Western Michigan University
ScholarWorks at WMU

Western Michigan University Course Catalogs (1904-present)

Western Michigan University

2017

Western Michigan University Graduate Catalog 2017-2018

Western Michigan University

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

Part of the Higher Education Commons

WMU ScholarWorks Citation

Western Michigan University, "Western Michigan University Graduate Catalog 2017-2018" (2017). *Western Michigan University Course Catalogs (1904-present)*. 178.
https://scholarworks.wmich.edu/course_catalogs/178

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

Western Michigan University

Graduate Catalog
2017 - 2018

1903 W. Michigan Avenue
Kalamazoo, MI 49008

Table of Contents

General Information
Calendars 6
Western Michigan University Strategic Plan 8
Graduate College 17

Admission Procedures 17
Degree Program Applicant, U.S. Citizen or U.S. Permanent Resident 17
Degree Program Applicant, International student 18
Graduate Certificate Program Applicant 29
Non-degree Applicant 20
Academic Graduate Degree-Level Information 20
Admission Requirements 20
Master's Program Applicant 21
Specialist Program Applicant 21
Doctoral Program Applicant 22
Graduate Certificate Program Applicant 22
Degree-Level Graduation Requirements 23
Departmental Program Policies 23
Non-degree Graduate Certificate 24
Master's Degree 24
Second Master's Degree 26
Acquiring a Master's Degree *en route* to the Doctoral Degree 26
Specialist Degree 27
Doctoral Degree 28
Doctoral Candidacy 31
Program Changes 32
Thesis, Project, and Dissertation *Committee* Requirements 32
Master's Thesis Committee 32
Specialist Project Committee 33
Doctoral Dissertation Committee 34
Graduate Faculty Appointments 35
Thesis, Project or Dissertation *Credit* Requirements and Policies 37
Continuous Enrollment 37
Research Subject Protection and Registration 37
Transfer & Other Credit Policies 37
Transfer Credits 37
Undergraduate Credit in a Graduate Program 39
University Graduation Procedures 40
Graduation Process 40
Graduation Audit 40
Non-degree Graduation Certificate Program 41

Funding Opportunities 42
Fellowships, Assistantships, Associateships, Grants, Awards 42
Policies Governing Graduate Appointees 45
Definitions and Classifications 45
Types of Appointments 45
Service Requirement 46
Stipends and Salaries 46
Affirmative Action 46
Professional Ethics 46
Notification of Status 46
Professional Development 47

Enrollment Status 47
Evidence of Status 47
Appointee Benefits 47
Tuition 48
Residency Policy 48
Auditing Courses, Tuition for 52
Drop, Withdraw and Tuition Refund Policy 52
Complete Withdrawal from All Courses, Effect on Tuition 52
Student Fees Other Than Tuition 52
Admission Application Fee 52
Class Fees 53
Collection Fees 53
Enrollment Fee 53
Extended University Programs Fee 53
Graduation Fee and Application Deadline 53
International Student Fee 54
Late Add Fee 54
Liability Insurance Fee 54
Records Initiation Fee 54
Residence Hall and Dining Fees 54
Student Assessment Fee 54
Sustainability Fee 55
Transcript 55
Tuition and Fee Payment for Graduate Appointees 55
Student Financial Aid 55
Types of Financial Aid 55
Procedures and Policies 56

Other Graduate Policies of Interest 59
Academic Standards 59
Attendance 50
Course Grades and Grading System 59
Grade Change 61
Grade Point Average 61
Graduate Credit by Examination 61
Honor Points 61
Repeated Course 62
Final Examination 62
Full-time/Part-time/Three-quarter time Student Status 62
Service-Learning, Co-Curricular learning and Volunteerism.....62
Accelerated Graduate Degree Program 64
Admission Procedure 64
Academic Advising, Records and Program Requirements 64
Annual Review of Graduate Students 65
Academic Forgiveness 65
Graduate Student Permanent Program of Study 65
Leave of Absence, Graduate Student 66
Preparing the Application for Leave 66
Graduate Appointees Requesting a Leave 66
Graduate Credit and Course Numbers 67
Independent Study 67
Proposals for Independent Study 67
Approval Process 67
Faculty Responsibility 68
Registration 69
Registering for Classes 69

Adding and Withdrawing from Classes Before the Final Date to Drop 69
Dropping Classes and Withdrawing from all Classes 69
Records 70
Identification Card 70
Name Change 70
Preferred Name 70
Transcript 71
University Admission Types, Degree Status 72
General Admissions 72
Provisional Admission 72
Conditional Admission 72
Dual Undergraduate/Graduate Enrollment Admission 72
Not Admitted 73
Readmitted with Academic Forgiveness 73
Admission Status, Active and Inactive 73
University Admission Types, Non-Degree Status, Graduate Level 74
Non-degree Admission 74
Graduate Certificate Program Admission 74
Michigan Intercollegiate Graduate Studies (MIGS) 74
Project S.C.O.P.E. (Senior Citizens' Opportunity Program in Education) 75

General University Policies 76
Code of Honor 76
Student Rights 76
Student Academic Conduct 77
Course Grade and Program Dismissal Appeals 82
Dissertation/Specialist Project/Thesis Appeals Procedure 85
The Family Educational Rights and Privacy Act 86
Residency Policy of Western Michigan University 87
Policies on Reporting Criminal and Unethical Activities....88
Western Michigan University Statements, Policies, and Procedures regarding Diversity, Multiculturalism, Inclusion and Non-Discrimination 90
Non-Discrimination Policy 91
WMU Sexual and Gender-Based Harassment and Violence, Intimate Partner Violence, and Stalking Policy and Procedures ("Sexual Assault and Misconduct Policy") 91
Western Michigan University's *Student Code* 93
Western Michigan University Expectations for Good Practice in Graduate Education 94
Transmission of Knowledge in Graduate Education....96
Western Michigan University Adjudication of Situations Involving Graduate Students' Rights and Responsibilities 97

University and Student Services 101
Archives 101
Athletics, Intercollegiate 101
Career and Student Employment Services 101
Children's Place Learning Center 101
Counseling Services 103
Disability Services for Students 102
Housing 102
Office of Information Technology 103
International Programs and Services 103
Multicultural Affairs, The Division of 103
Online Education 106
Parking and Vehicle Registration 107
Police 107
Publications 107

Radio 107
Sindecuse Health Center 108
Speech, Language, and Hearing Services 108
Student Engagement, Office of 108
Substance Abuse Services 119
Telephone Directory 119
University Counseling and Testing Center 119
University Libraries 110
University Recreation 110
Veterans' Assistance 112
Writing Center 112
University & Program Accreditations 114
University Accreditation 114
Disclosure of Academic Program Accreditation and Certification Status 114
Additional Specialized Program Recognition Leading to Post-Graduation Certification or Licensure 116
Extended University Programs 120
Glossary of Terms 125

Colleges

Arts and Sciences 141
Anthropology 146
Biological Sciences 148
Chemistry 153
Communication, School of 157
Comparative Religion 161
Economics 164
English 167
Geography 174
Geosciences 177
History 185
Mathematics 191
Medieval Institute 198
Philosophy 201
Physics 203
Political Science 207
Psychology 213
Public Affairs and Administration 218
Science Education, Mallinson Institute for 226
Sociology 238
Spanish 241
Statistics 247
Interdisciplinary Programs 255
Haworth College of Business 257
Accountancy 258
Business Information Systems 261
Interdisciplinary Programs 265
Education and Human Development 272
Counselor Education and Counseling Psychology 273
Educational Leadership, Research and Technology 279
Family and Consumer Sciences 295
Human Performance and Health Education 301
Special Education and Literacy Studies 307
Teaching, Learning and Educational Studies 318
Interdisciplinary Programs 327
Engineering and Applied Sciences 329

Chemical and Paper Engineering 332
Civil and Construction Engineering 345
Computer Science 350
Electrical and Computer Engineering 358
Engineering Design, Manufacturing, and Management Systems 369
Industrial and Entrepreneurial Engineering & Engineering Management 371
Mechanical and Aeronautical Engineering 377
Fine Arts 387
Art, Gwen Frostic School of 389
Music, School of 392
Health and Human Services 402
Blindness and Low Vision Studies 403
Nursing, Bronson School of 410
Interdisciplinary Health Programs, School of 413
Occupational Therapy 420
Physical Therapy 425
Physician Assistant 426
Social Work, School of 428
Speech, Language and Hearing Sciences 432
Interdisciplinary Programs 436
Graduate College 439
Interdisciplinary Programs – Graduate College 441
Course Descriptions (by College) 446
University Officers and Faculty 676

University Calendar

Fall Semester 2016		
Sep 1-2		Advising Days
Sep 5	Mon	Labor Day recess
Sep 6	Tue	Classes begin at 8 a.m.
Nov 23	Wed	Thanksgiving recess begins at noon
Nov 28	Mon	Classes resume
Dec 12-15		Final examination week
Dec 17	Sat	Semester ends/Commencement
Spring Semester, 2017		
Jan 5-6		Advising Days
Jan 9	Mon	Classes begin at 8 a.m.
Jan 16	Mon	MLK Day Recess, Convocation, and Activities
Mar 3	Fri	Spirit Day – no classes
Mar 6	Mon	Spring Break
Mar 13	Mon	Classes resume
Apr 24-27		Final examination week
Apr 29	Sat	Semester ends/Commencement
Summer I, 2017		
May 8	Mon	Classes begin at 8 a.m.
May 29	Mon	Memorial Day recess
Jun 28	Wed	Session ends
Jun 24	Sat	Commencement
Summer II, 2017		
Jun 29	Thu	Classes begin at 8 a.m.
Jul 4	Tue	Independence Day recess
Aug 18	Fri	Session ends
		- No commencement exercises

Fall Semester, 2017		
Aug 31-Sep 1		Advising Days
Sep 4	Mon	Labor Day recess
Sep 5	Tue	Classes begin at 8 a.m.
Nov 22	Wed	Thanksgiving recess begins at noon
Nov 27	Mon	Classes resume
Dec 11-14		Final examination week
Dec 16	Sat	Semester ends/Commencement
Spring Semester, 2018		
Jan 4-5		Advising Days
Jan 8	Mon	Classes begin at 8 a.m.
Jan 15	Mon	MLK Day Recess, Convocation, and Activities
Mar 2	Fri	Spirit Day – no classes
Mar 5	Mon	Spring Break
Mar 12	Mon	Classes resume
Apr 23-26		Final examination week
Apr 28	Sat	Semester ends/Commencement
Summer I, 2018		
May 7	Mon	Classes begin at 8 a.m.
May 28	Mon	Memorial Day recess
Jun 27	Wed	Session ends
Jun 23	Sat	Commencement
Summer II, 2018		
Jun 28	Thu	Classes begin at 8 a.m.
Jul 4	Wed	Independence Day recess
Aug 17	Fri	Session ends
		- No commencement exercises

Academic Calendar

Important dates for each semester or session, including registration dates, refund dates, withdrawal dates, finals, midterm grading, final grading and more. **Note:** ***Academic calendars are subject to change without notice.***

Item	Fall – 2017	Spring - 2018	Summer - 2018	
			I	II
Course offerings open for viewing	Feb 20	Sep 18	Jan 22	Jan 22
Registration begins	Mar 13	Oct 9	Feb 5	Feb 5
Advising Days	Aug 31 – Sep 1	Jan 4 – 5	N/A	N/A
One- Stop Convenience Center	Aug 30 – Sep 8	Jan 8 - 10	N/A	N/A
Fall Welcome	TBA	N/A	N/A	N/A
Classes begin	Sep 5	Jan 8	May 7	Jun 28
Tuition and fees due	Aug 29	Jan 8	May 7	Jun 28
Last day to drop/add classes	Sep 11	Jan 12	May 11	Jul 5
Census	Sep 12	Jan 16	May 14	Jul 6
$100 Late Add fee begins	Sep 13	Jan 17	May 15	Jul 7
Begin recording withdraws as “W” on transcript	Sep 13	Jan 17	May 15	Jul 7
Last day to withdraw from classes	Nov 6	Mar 19	Jun 4	Jul 23
Final Exam Week	Dec 11 – 14	Apr 23 – 26	N/A	N/A
Semester Ends	Dec 16	Apr 28	Jun 27	Aug 17
Refunds				
Last day to receive 100% refund	Sep 12	Jan 16	May 14	Jul 6
Last day to receive 90% refund for a complete withdrawal	Sep 14	Jan 18	N/A	N/A
Last day to receive 50% refund for a partial withdrawal	Sep 18	Jan 22	N/A	N/A
Last day to receive a 50% refund for a complete withdrawal	Sep 29	Feb 5	May 18	Jul 10
Last day to receive a 25% refund for a complete withdrawal	Oct 25	Mar 2	Jun 1	Jul 23
Grades				
Midterm grades due	Oct 30	Mar 12	N/A	N/A
Final grades due	Dec 19	May 1	Jul 3	Aug 21
Graduation				
Last day to apply for graduation	Aug 1	Dec 1	Feb 1	Feb 1
Commencement	Dec 16	Apr 28	Jun 23	N/A
Holidays and Recesses				
Labor Day	Sep 4			
Thanksgiving (begins at noon)	Nov 22			
Dr. Martin Luther King Jr. Day recess, convocation and activities		Jan 15		
Spirit Day		Mar 2		
Spring Break		Mar 5 – 9		
Memorial Day			May 28	
Independence day recess				Jul 4

The Western Michigan University Strategic Plan 2015-20

The Western Michigan University Commitment

With adoption of its first strategic plan in 2012, the University embraced three basic tenets developed to describe its identity and provide guideposts for the future. In 2016, as the University launches The Gold Standard 2020, a refined and expanded five-year version of its strategic plan, those three tenets remain at the very core of all that WMU is and aspires to be. The University is learner centered, discovery driven, and globally engaged. Every goal that it sets and every challenge it tackles is intended to maintain and enhance those three tenets. The Gold Standard 2020 is a planning tool for the future that is premised on that basic understanding.

As a premier, comprehensive, public research University, WMU will use this plan to recruit and nurture talented minds wherever they will be found. The University strives to add value to the lives of its learners and continuously improve the quality of its programming to meet the needs and expectations of the communities it serves. The strategic plan reflects a campus-wide commitment to academic rigor, service, inclusivity, collaboration, economic development, sustainability and good stewardship of institutional resources.

As an extension of the original Gold Standard, the Gold Standard 2020 is an affirmation of the University community's commitment to the values of shared governance, transparent and timely communication, and accountable and responsible behavior within an ethical, compassionate, diverse and respectful environment.

Western Michigan University has embraced the challenge of strategic planning to ensure that it will be a premier educational environment that provides opportunity for a diverse and globally representative community of learners. Those learners will be part of a setting in which discovery and innovation are used to enhance the economic vitality of the communities served and make the world a better and more hospitable place.

Mission

Western Michigan University is a learner-centered, research university, building intellectual inquiry and discovery into undergraduate, graduate, and professional programs in a way that fosters knowledge and innovation, and transforms wisdom into action. As a public university, WMU provides leadership in teaching, research, learning, and service, and is committed to enhancing the future of our global citizenry.

Vision

Nationally and internationally recognized, the University aspires to distinguish itself as learner centered, discovery driven, and globally engaged.

Learner centered.
Western Michigan University is a university where every member of our community is responsive to and responsible for the education of our students. We challenge and engage all members of our community with a university experience that creates skilled, life-long learners.

Discovery driven.
Western Michigan University offers experiences that enable discovery, and promote creativity and research. We are committed to pursuing inquiry, disseminating knowledge, and fostering critical thinking that encourages life-long learning. Our scholarship creates new knowledge, forms a basis for innovative solutions, leads to economic development, and makes substantial contributions to society.

Globally engaged.
Western Michigan University impacts the globe positively. We are a community of learners committed to human dignity, sustainability, social responsibility, and justice. Our campus embraces a diverse population of students, faculty and staff who develop learners and leaders who are locally oriented and globally competent, culturally aware and ready to contribute to world knowledge and discovery.

The Gold Standard 2020 Embraces Five Strategic Goals

The University Strategic Plan guides the way for the next five years and allows time for meaningful institutional goals to be achieved. Developing the goals, objectives and strategies that will serve the University community both now and in the future, demands that the University undertake honest, thorough and ongoing examinations of the challenges and risks the institution faces. This strategic plan acknowledges that both risk and opportunity must be balanced, assessed and reassessed and includes the mechanisms to meet those demands. Both risks and opportunities must be prioritized as time passes, and resources must be allocated according to that prioritization.

Objectives and strategies have annual benchmarks to measure progress and allow for responsiveness to internal and external changes impacting WMU. Institutional Effectiveness Measures will be used to monitor critical University functions, as well as provide evaluation for continuous quality improvement throughout the Strategic Plan's implementation and resource allocation processes.

Upon formal adoption of the strategic plan by the University's Board of Trustees, the document will become Western Michigan University's roadmap into the future. Annual monitoring to ensure benchmarks are met will take place. Each unit and vice presidential area are expected to integrate the goals and objectives of the strategic plan into daily work.

Learner Success

Goal #1: Ensure a distinctive and supportive learning experience that fosters success.

WMU fosters learners who are critical thinkers, knowledge expanders, and solution providers. WMU students are provided a broad range of learning opportunities in a respectful, healthy and safe living-learning environment focused on student success. Curricular and co-curricular opportunities encourage engagement, prepare learners for the globalized world, and enhance student retention and degree completion. Each learner is encouraged to synthesize and translate WMU experiences into a unique Signature defining who they are as learners, professionals, leaders and globally engaged citizens.

Objective 1.1: A learner-centered culture maximizes student retention and degree completion.
Objective 1.2: The learning experience prioritizes critical thinking, application, and experiential learning.
Objective 1.3: Learning experiences are heightened through innovative and responsive co-curricular learning opportunities.
Objective 1.4: International learning experiences prepare all learners for the globalized world.
Objective 1.5: University community advances and sustains a respectful, healthy, and safe campus.
Objective 1.6: The student living-learning environment enhances learning, personal development, and engagement in campus communities.

Academic Excellence

Goal #2: Promote innovative learning, discovery, and service.

WMU pursues academic excellence through innovative approaches to learning, discovery, and service. WMU embraces collaboration and leverages resources to offer academic programs that are responsive to the needs of all students and society. A distinguished faculty and support staff offer high quality curricula in graduate and undergraduate education. Instruction is delivered through high-impact practices in learning platforms that meet the needs of contemporary learners.

Objective 2.1: WMU's academic programs respond to student and global needs through innovative, high quality curricula.
Objective 2.2: The strategic hiring and retention of a distinguished faculty and staff ensures academic excellence, enhances innovation in discovery and pedagogy, and elevates the University's stature.
Objective 2.3: Academic excellence will be maintained through the execution of best practices.
Objective 2.4 WMU will be positioned as leader in quality graduate education.

Objective 2.5: The delivery of learning platforms and locations reflect the breadth and diversity of enrollment that is supportive of the University's mission and strategic goals.
Objective 2.6: Faculty research, scholarship, and creative activities enhance innovative teaching and discovery.

Discovery and Collaboration

Goal #3: Progress as a Carnegie-classified higher research doctoral university that advances new knowledge and value-added discovery.

WMU is flexible and responsive to the ever-changing demands of the world. To meet the needs of society, WMU investigates, develops, and produces new knowledge; contributes to technological and economic advancement; and elevates the human condition through community outreach and engaged scholarship.

Objective 3.1: WMU strengthens its position as a Doctoral University: Higher Research Activity in accordance with Carnegie Classification criteria.
Objective 3.2: WMU's strengths in research and engaged scholarship create mutually beneficial partnerships that impact significant scientific, economic, and social problems.
Objective 3.3: WMU's outreach is attentive to local and world needs.

Inclusive Excellence and Equity

Goal #4: Promote a diverse, equitable, and inclusive University culture to ensure social sustainability and accessibility.

WMU cultivates a diverse and inclusive community that recognizes the value of each individual and helps ensure civility and respect for all people. In doing so, WMU embraces diversity as a community value in which all stakeholders are prepared to understand the complexity of issues and perspectives needed to offer solutions to world challenges. A system of accountability and purposeful institutional reflection will promote a high level of social sustainability.

Objective 4.1: A system of continuous accountability and evaluation contributes to a culture of inclusive excellence.
Objective 4.2: A diverse student, faculty, and staff population enriches the learning and working environment.
Objective 4.3: WMU models a welcoming, accessible, and supportive university culture.
Objective 4.4: WMU advances as a viable setting for social sustainability.

Sustainable Stewardship

Goal #5: Advance economic and environmental sustainability practices and policies.

WMU supports a culture of sustainability by modeling practices and policies that result in increased flexibility to respond to economic and environmental challenges. Allocation of resources will be transparent and in accordance with strategic planning priorities creating stability across funding cycles, respecting the individual needs of all students and employees, reducing our environmental footprint, and relying on evaluation and accountability to ensure continuous improvement. A robust communication system will effectively promote the University distinctive mission to enhance marketing, advocacy and investment in WMU.

Objective 5.1: WMU continues to be a leader in responsible utilization of financial and human resource management, process, and deployment.
Objective 5.2: WMU utilizes available financial strategies to optimize enrollment management.
Objective 5.3: WMU is a national leader in achieving environmental sustainability.
Objective 5.4: Effective marketing and communication promotes the University's distinctive mission.
Objective 5.5: Community support, advocacy, and philanthropic giving advance WMU

Learner Success

Goal #1: Ensure a distinctive and supportive learning experience that fosters success.

Objective 1.1: A learner-centered culture maximizes student retention and degree completion.

Strategies

a. Operationalize and integrate evidence-based retention practices to increase first-year student retention.
b. Develop advising and retention efforts appropriate to the needs of sophomore, junior, and transfer students.
c. Improve support programming to help students with varying levels of academic preparation.
d. Enhance training to help WMU employees recognize how their roles can/do support student success.
e. Develop and operationalize best practices that promote persistence and degree completion of graduate students.

Objective 1.2: The learning experience prioritizes critical thinking, application, and experiential learning.

Strategies

a. Coordinate and promote off-campus, non-classroom, internship, and service-learning opportunities for all students.
b. Enhance career preparation services and provide more opportunities for professional development to boost post-graduation student success.
c. Use the development and articulation of learning outcomes in training and mentoring student employees to further their workforce readiness.
d. Promote greater involvement of undergraduate and graduate students in research and creative activities.

Objective 1.3: Learning experiences are heightened through innovative and responsive co-curricular learning opportunities.

Strategies

a. Develop and implement the *Signature Designation* to support student engagement and distinction.
b. Continue implementation and development of programming to increase student financial literacy.
c. Facilitate participation in benefit-supported learning opportunities for all employees.

Objective 1.4: International learning experiences prepare all learners for the globalized world.

Strategies

a. Increase feasibility of broad-based participation in study abroad programs and other globally focused learning opportunities.
b. Implement the faculty-adopted *internationalize education* initiative.
c. Provide enhanced living-learning support for the growing number of international students at WMU.
d. Increase recruitment of University employees with international experience and expertise.
e. Facilitate intercultural understanding through greater interaction between domestic and international students.

Objective 1.5: University community advances and sustains a respectful, healthy, and safe campus.

Strategies

a. Implement proactive outreach and intervention programs to enhance mental health and physical well-being of all students, faculty, and staff.
b. Promote collegiality through greater inter- and intra-departmental collaboration.
c. Implement recommendations from the *Title IX Sexual Misconduct and Safety Survey* to ensure a safe and supportive environment for all stakeholders.
d. Reinforce campus safety through informed modification in University policies and physical environment.

Objective 1.6: The student living-learning environment enhances learning, personal development, and engagement in campus communities.

Strategies

a. Revitalize University facilities to enhance informal space for student learning, personal development, and interaction with others.
b. Plan for a self-sustaining, award-winning student center known for its vibrancy, responsiveness, and aesthetic appeal.
c. Renovate aging facilities to create neighborhood environments that add value to the University experience.
d. Support and develop a championship athletic culture that promotes institutional pride and community connectedness, and also enhances the University experience for all stakeholders.

Academic Excellence

Goal #2: Promote innovative learning, discovery, and service.

Objective 2.1: WMU's academic programs respond to student and global needs through innovative, high quality curricula.

Strategies

a. Increase flexibility within the curriculum development process to better respond to a rapidly changing world.
b. Revise general education curricula to respond to the needs of the 21st century student.
c. Develop and utilize University-wide student learning outcomes for University planning and assessment.
d. Develop stronger connections across colleges and among external constituents to facilitate interdisciplinary opportunities.
e. Identify and support growth in the number of programs that achieve national or international distinction.

Objective 2.2: The strategic hiring and retention of a distinguished faculty and staff ensures academic excellence, enhances innovation in discovery and pedagogy, and elevates the University's stature.

Strategies

a. Promote academic excellence and innovative discovery through strategic investment in personnel.
b. Structure and align technology and operations to advance information resources and pedagogical innovations.
c. Support and recognize faculty and staff engagement in their professional disciplines.
d. Develop an operational succession plan for faculty, staff, and administrators.

Objective 2.3: Academic excellence will be maintained through the execution of best practices.

Strategies

a. Increase systematic assessment of student learning for continuous improvement of curricula.
b. Create and sustain a culture that supports the use of high impact practices for instruction in all academic units.
c. Enhance opportunities for instructional staff to engage in learning communities.
d. Incorporate early alert technology and holistic advising to support student success.
e. Advocate for proposed capital outlay projects, such as the College of Aviation expansion.

Objective 2.4 WMU will be positioned as leader in quality graduate education.

Strategies

a. Develop appropriate financial support strategies to assist graduate students.
b. Improve data systems to monitor, review, and assess graduate student success.
c. Strengthen the capacity of graduate programs to educate and graduate a diverse population of contemporary learners in a timely manner.
d. Promote cross-discipline learning and research opportunities to enhance the educational experiences of graduate students.
e. Provide relevant engagement opportunities and student support resources to meet the unique needs of graduate students.

Objective 2.5: The delivery of learning platforms and locations reflect the breadth and diversity of enrollment that is supportive of the University's mission and strategic goals.

Strategies

a. Expand and optimize WMU's recruitment and delivery of educational opportunities to new, targeted demographics and strategic geographic regions.
b. Implement a comprehensive enrollment management plan to maximize program capacity and achieve academic program goals.
c. Maximize use of technology to increase convenience and expand boundaries for delivery of degree programs.
d. Engage in new, non-traditional pathways to degree completion.

Objective 2.6: Faculty research, scholarship, and creative activities enhance innovative teaching and discovery.

Strategies

a. Develop efficient mechanisms to gather and distribute faculty, staff, and student scholarship and discovery data.
b. Establish clear expectations for faculty engagement and support of student research and creative activities.
c. Strategically align staff and faculty expertise and strengths with available resources at the unit level to promote learning and discovery.
d. Align support resources to increase discovery activity for all faculty in all disciplines.

Discovery and Collaboration

Goal #3: Progress as a Carnegie-classified higher research doctoral university that advances new knowledge and value-added discovery.

Objective 3.1: WMU strengthens its position as a Doctoral University: Higher Research Activity in accordance with Carnegie Classification criteria.

Strategies

a. Expect University centers and institutes to stimulate externally funded research and creative activities through interdisciplinary discovery, encouraging innovation, and widespread dissemination of scholarship.
b. Support implementation and accountability of discovery communities to increase both the aggregate and per-capita level of research activity supportive of a Carnegie-classified Doctoral University: Higher Research Activity.
c. Foster a culture of collaboration by developing effective infrastructure for faculty and staff to share their expertise and research across disciplines and regional research entities.
d. Enhance the delivery of doctoral programs to increase the number of doctoral degrees awarded.
e. Enhance information technology and data management infrastructure to support research.

Objective 3.2: WMU's strengths in research and engaged scholarship create mutually beneficial partnerships that impact significant scientific, economic, and social problems.

Strategies

a. Foster investment in student, staff and faculty innovation, infrastructure and entrepreneurism.
b. Actively support technology and knowledge transfer in partnership with WMU spin-off companies, industry, and community.
c. Develop curricular programs that will contribute to incumbent and future workforce needs.
d. Establish engaged scholarship systems to support research likely to impact public policy and community-based endeavors.
e. Expand mechanisms for the dissemination of research and scholarship to stakeholders and the community at large.

f. Continue to leverage resources through effective relationships with WMed and WMU Cooley, local affiliates, and global partnerships.

Objective 3.3: WMU's outreach is attentive to local and world needs.

Strategies

a. Develop and implement a renewed *Campus Compact Action Plan*, dedicating the University to work with other institutions to advance the public purposes of higher education.
b. Review and improve outreach practices and policies to achieve the *Carnegie Community Engagement Reclassification* by 2020.
c. Operationalize a unified vision to support the University's public engagement mission.
d. Develop rigorous, systematic evaluations of all outreach and community engagement programs to increase impact in conjunction with community agencies' planning initiatives.
e. *Know, measure, tell, and increase* WMU's economic impact and social value.
f. Assist all students with developing meaningful connections in their local and global communities.

Inclusive Excellence and Equity

Goal #4: Promote a diverse, equitable, and inclusive University culture to ensure social sustainability and accessibility.

Objective 4.1: A system of continuous accountability and evaluation contributes to a culture of inclusive excellence.

Strategies

a. Foster a shared understanding of University-wide definitions pertaining to diversity, equity, and inclusion.
b. Improve accountability to inform and advance equity, inclusivity, and accessibility, at every level of the University.
c. Ensure viable, safe avenues to report instances of inequitable behavior.

Objective 4.2: A diverse student, faculty, and staff population enriches the learning and working environment.

Strategies

a. Understand and work to remove systemic institutional barriers for recruitment, retention, and degree completion of students from historically underrepresented groups in higher education.
b. Employ institutional strategies so that hiring and retention practices encourage diversity in all its forms.
c. Continue to create opportunities for affinity groups to gather and develop a sense of community.

Objective 4.3: WMU models a welcoming, accessible, and supportive university culture.

Strategies

a. Expand educational and cultural programming to increase equity mindedness of all stakeholders.
b. Support professional development opportunities for all stakeholders that promote global understanding and cultural humility.
c. Promote human resource practices and programming that meet the needs of WMU employees to enhance workplace engagement.
d. Implement changes in student service facilities that create a barrier-free, welcoming environment for a diverse population.

Objective 4.4: WMU advances as a viable setting for social sustainability.

Strategies

a. Provide services and support networks that function to create a sense of place that provides a viable setting for human interaction, communication, and cultural development.
b. Identify and appropriately resource staffing levels in critical areas to support quality learner-centered service.

c. Offer and encourage participation in professional skills training to increase employee retention, advancement, and workplace satisfaction.
d. Develop and maintain a motivated workforce through leadership by example and recognition for contributions that exceed expectations.
e. Support strategies to foster faculty, staff, and student responsibility as active participants in University governance.

Sustainable Stewardship

Goal #5: Advance economic and environmental sustainability practices and policies.

Objective 5.1: WMU continues to be a leader in responsible utilization of financial and human resource management, process, and deployment.

Strategies

a. Expand use of a resource-effective integrative review processes for all programs and services.
b. Leverage multiple revenue streams to support clearly defined University goals and responsible budget forecasts.
c. Expand and improve integrated data-driven information systems for decision-making.
d. Promote transparency and University accountability in all institutional systems.
e. Prioritize the maximum utilization of facilities and fixed resources in campus planning and scheduling.
f. Develop proactive practices to meet the pace of change in emerging technology.

Objective 5.2: WMU utilizes available financial strategies to optimize enrollment management.

Strategies

a. Develop regionally competitive tuition models for academically qualified students.
b. Utilize innovative and competitive financial aid strategies to maintain the fundamental principle of providing access to an affordable, quality education for all admitted students.
c. Implement new strategies at the program level that enhance yield of admitted students.
d. Incorporate effective forecasting models that anticipate and respond to changes in regional, national, and global factors in managing enrollment.

Objective 5.3: WMU is a national leader in achieving environmental sustainability.

Strategies

a. Maintain a leadership position in conservation efforts to reduce energy consumption and costs.
b. Work with community partners to recycle, reuse, and reduce waste.
c. Increase the number and scope of green programs that maximize return on University investment.
d. Increase opportunities for sustainability education.
e. Promote responsible acquisition and use of natural resources, increasing green space on campus.

Objective 5.4: Effective marketing and communication promotes the University's distinctive mission.

Strategies

a. Develop and execute an external and internal communication plan that effectively engages all stakeholders and reflects the shared narrative of the University.
b. Define and disseminate a coherent and consistent brand identity to local, national, and global markets.
c. Engage in new digital strategies that increase access to all stakeholders and advance the recruitment of prospective students and families.
d. Implement a transformational wayfinding plan to improve navigation to and within WMU campuses.

Objective 5.5: Community support, advocacy, and philanthropic giving advance WMU.

Strategies

a. Provide services that effectively connect and engage WMU’s global network of alumni and friends as advocates for the University.
b. Raise external support for student scholarships, named professorships, innovation infrastructure, capital projects, and other University-identified priorities.
c. Utilize WMU's strategic plan and University-wide accomplishments to articulate WMU's narrative and value to potential donors.
d. Engage in development and promotion communication to increase donor retention and employee annual giving.

Enterprise Risk Management and Strategic Planning

Built into the 2020 University Strategic Plan are a number of specific strategies that directly address challenges identified in the planning process. Since these challenges affect all aspects of Western Michigan University’s mission and operations, they should be a critical tool in the implementation and oversight of the plan. This approach integrates risk management into the strategic deliberations of senior leaders and board members, positioning the University to accomplish its long term goals and objectives. The Gold Standard 2020 will begin the implementation process by focusing on how the challenges may impact achievement of the University strategic goals.

Graduate College

The Graduate College is the institution's primary advocate for graduate study. The functions of the Graduate College include promoting academic excellence by providing leadership in shaping graduate policy, assisting faculty in guiding and mentoring graduate students, and integrating services that help to recruit, retain, support, and graduate a diverse population of students in becoming accomplished and ethical scholars, researchers, and professionals within and across disciplines.

To provide leadership and advocacy in support of graduate education at Western Michigan University, the Graduate College has the following goals: develop and improve the environment for graduate education at WMU; assist graduate programs with enrollment management; support and promote graduate student success in teaching, learning, and scholarly activities; and provide quality control and maintain equitable and consistent standards in graduate programs.

Admission Procedures

A person planning to earn a degree or a graduate certificate beyond the baccalaureate needs to be admitted to the University as a degree program student or a graduate certificate program student; a person planning to elect either undergraduate or graduate courses only needs to be admitted to the University as a non-degree student. The admission procedures for U.S. citizens and non-U.S. citizens are different, however, as described immediately below. To avoid delay in the processing of an application, U.S. citizens and permanent residents, as well as those with asylum or refugee status, can obtain information by calling (269-387-2000), sending e-mail to ask-wmu@wmich.edu, completing the online degree admission application at www.wmich.edu/apply. Potential applicants on non-immigrant or temporary visas should request information and application materials by mail from the Office of International Services and Student Affairs, A411 Ellsworth Hall, Western Michigan University, Kalamazoo, Michigan 49008-5246 or by fax (269 387-5899) or by completing the online admission application available at (www.wmich.edu/international).

WMU Faculty Applicant: All Western Michigan University faculty and staff are eligible to apply for admission to master's and specialist programs at the University. WMU faculty members holding tenure track appointments and all University staff are eligible to apply for admission to doctoral programs at Western, but only in the academic units where they are not employed. WMU faculty holding explicitly temporary or term appointments may apply for admission to any doctoral program.

Degree Program Applicant, U.S. Citizen or U.S. Permanent Resident

Applicants who are U.S. citizens and those who have an I-551 Permanent Resident card or have asylum or refugee status will seek admission to a graduate degree program by following the applicant-managed process described below. Applicants are encouraged to use the University's online application.

1. Complete the online Application for Graduate Admissions following the instructions found at www.wmich.edu/apply. The $50 application fee must be paid in order to submit the application.

NOTE: Since most graduate programs require materials in addition to the University application, applicants are advised to review additional application requirements which can be found on the appropriate website, http://www.wmich.edu/grad/admissions/landing.php, or by contacting the program department or advisor directly.

2. The following materials are required to complete the University's admission application file:

- a completed application
- the $50 application fee; and

- An official transcript from the institution from which you received your Bachelor degree is required, as well as a transcript from institution(s) where any graduate level courses or degrees have been taken/completed. Applicants are not required to submit an official transcript of courses taken/completed at Western Michigan University. Departments may request additional course information/transcripts as necessary. Please check the requirements listed for your chosen program at http://www.wmich.edu/grad/admissions/landing.php.
- if also required for admission, have official entrance test scores (such as the GRE using WMU school code 1902 or GMAT) sent to the Office of Admission by the testing agency.

3. Submit supplemental admission materials required by the graduate program through the online application.
4. Application for admissions from U.S. citizens and permanent residents should be submitted no later than July 1 for the Fall semester, November 1 for the Spring semester, March 1 for the Summer I session, and May 1 for the Summer II session. Most programs, however, have earlier deadline dates, and not all programs admit students for all semesters or sessions. Applicants are advised, therefore, to read the program's admission requirements section in this catalog or consult the relevant program office or advisor to learn the application deadline date and other germane information for a specific program. **Individual program application deadlines take precedence over general University deadlines.**

Degree Program Applicant, International students

The Haenicke Institute's Office of International Admissions and Services (IAS) handles the special needs of international students by processing applications for admission, conducting orientation programs for new international students, assisting with housing arrangements, coordinating community programs involving international students, providing immigration advice, serving as liaison between students and their financial sponsors, and offering personal and social counseling.

International students interested in seeking admission to Western Michigan University apply on-line at www.wmich.edu/internationaladmissions/apply.

To qualify for admission, international students must show that they are academically, financially, and linguistically capable of succeeding at full-time study. Before an international student can be admitted and the Certificate of Eligibility for a visa issued, the student must:

1. Complete an application form at www.wmich.edu/internationaladmissions/apply.
2. Provide complete and official transcripts of secondary, undergraduate, and post-graduate studies (if completed) as well as copies of diplomas, certificates or degrees earned. These must be translated into English and list course titles and grades (marks) received for each. Upload and then send hard copies of the documents to the IAS at International Admissions and Services, Western Michigan University, 1903 W Michigan Avenue, Kalamazoo, Michigan 49008-5246 U.S.A.
3. Provide proof of adequate funding per academic year. This funding amount includes tuition, room and board, books, and health insurance. Personal/family savings must be verified by a bank statement. If sponsored by a government, or other agency, an official letter must be submitted showing that the scholarship is valid for use at WMU, and indicating beginning and ending dates of validity. Complete costs may be viewed at http://wmich.edu/sites/default/files/attachments/u64/2016/2015-16%20Application%20folder.pdf.
4. Complete the Student and Dependent Information form and provide a copy of passport I.D. page.
5. Provide proof of English competency. Students who have completed English-medium schooling from the countries on the list here may be exempted from providing test scores www.wmich.edu/internationaladmissions/apply/proficiency.

   The following tests and scores are accepted at Western Michigan University as measures of English competency:

Test of English as a Foreign Language (TOEFL) A score of 500 PBT (61 IBT) is required for restricted admission (part-time academic English and part-time academics during the first semester) or 550 PBT (80 IBT) for unrestricted admission.

Michigan English Language Assessment Battery (MELAB) A score of 69 is required for restricted admission or 77 for unrestricted admission.

General Certificate of Education Advanced Level Pass in English with grade of A, B, or C from one of the five British-based examining boards only. This is equivalent to a 550 TOEFL.

International English Language Testing System (IELTS) Academic Module. A score of 6 is required for restricted admission or 6.5 for unrestricted admission.

International Baccalaureate (IB) A grade of 5 in English is required at the Higher Level for unrestricted admission.

Successful completion of ELS Level 112 from one of the ELS Language Centers.

Pearson Test of English Academic Module. A score of 45 is required for restricted enrollment and 53 required for unrestricted enrollment.

CELCIS Successful completion of the advanced level and instructor recommendations from CELCIS, Western Michigan University's ESL program. A prospective student may enroll in CELCIS until achieving the required TOEFL score for academic enrollment or completion of the advanced level with instructor recommendations. For more information, see the CELCIS information at http://www.wmich.edu/internationaladmissions/eslatwmu .

Note: some graduate programs have higher score requirements.

Applications for admission from applicants classified as international students (http://wmich.edu/apply/international) must be submitted no later than June 15 for the Fall Semester, October 15 for the Spring Semester, and March 15 for the Summer I Session. Many programs have earlier deadline dates, and not all programs admit students for all semesters. Applicants are advised to read the program's admission requirements section or consult the relevant program office or advisor to learn the application deadline date and other information for a specific program.

It is advisable to apply well before the application deadline since some programs have earlier deadline dates for admission consideration and/or departmental assistantship awards. Departmental information and requirements may be found at www.wmich.edu/academics/graduate.

INTERNATIONAL STUDENTS ARE REQUIRED TO HAVE HOSPITAL, MEDICAL AND SURGICAL HEALTH INSURANCE
All international students are required to carry health insurance. There is no University-sponsored program. International students must show proof of coverage including effective dates and a copy of the insurance card, front and back during the first two weeks of a semester/session. Office of International Admissions & Services will approve the policy. The insurance coordinator is available to assist students via email at ias-insurance@wmich.edu.

Graduate Certificate Program Applicant

An applicant with a bachelor's degree who wishes to gain admission to a graduate certificate program should use the online application. Follow the instructions for completion of the application. Students accepted into a Graduate

Certificate Program are considered non-degree students (except for the Alcohol and Drug Abuse Certificate Program which is considered a "Degree Seeking" program).

An official transcript from the institution from which you received your Bachelor degree is required, as well as a transcript from institution(s) where any graduate level courses or degrees have been taken/completed. Applicants are not required to submit an official transcript of courses taken/completed at Western Michigan University. Departments may request additional course information/transcripts as necessary. Please check the requirements listed for your chosen program at http://www.wmich.edu/grad/admissions/landing.php (except WMU). If also required for admission, have official entrance test scores (such as the GRE or GMAT) sent to the Office of Admissions by the testing agency.

Submit within the online application any supplemental admission materials as required by the program before the published admission dates.

When an applicant plans to obtain a graduate certificate in conjunction with a graduate degree program, the applicant must meet admission requirements for both the graduate degree program and the graduate certificate program and submit a separate online application and application fee for each program.

Non-degree Applicant

An applicant with a bachelor's degree who wishes to enroll in undergraduate or graduate courses, but does not plan to pursue a degree program or graduate certificate program or is not eligible for admission to a degree program or graduate certificate program, may enroll in certain classes with Non-degree status. This status also is granted to a visiting student from another university. Non-degree status does not constitute admission to a degree or certificate program, and the courses taken under this status might not apply to a particular degree or certificate program.

To secure admission with this status, applicants should submit an online application for Graduate Non-Degree status, along with a non-refundable application fee of $50. Applicants who did not receive a degree from WMU must upload proof of their undergraduate degree when submitting the application. The following credentials (photocopies are permissible) are acceptable as verification of the degree: transcript, diploma, teaching certificate, letter from the registrar of the undergraduate institution or letter from the registrar or comparable university official of an affiliated institution (e.g., WMed, Cooley). Applications will not be processed without the accompanying credential. If a student received their degree from an institution outside of the United States, a copy of their international transcript will be required.

Academic Graduate Degree-level Information

Admission Requirements

All applicants are expected to meet the same academic standards required for admission consideration. The minimum academic requirements vary, however, by degree level, by discipline, and by admission type. For more specific information on each program, read the admission requirements section of the relevant program's listing in this catalog or contact the program's graduate advisor or the department office.

Overall, a student seeking admission to a graduate degree program must have the endorsement of the academic unit offering the program. For admission, a student must have a baccalaureate degree from an accredited, postsecondary educational institution or its international equivalent; meet or exceed the requirements by each degree-level, including the minimum grade point average as evidenced by the transcripts(s) of all previous course work; and meet requirements established by the academic unit offering the degree program. The department or academic unit sponsoring the degree program may petition the graduate dean for a waiver of some of the admission criteria in individual cases or in the case of institutional agreements through a Memorandum of Understanding. The petition must be accompanied by a written justification.

Master’s Program Applicant

In addition to the minimum requirements for admission to a master's program listed below, many academic programs ask applicants to submit supplemental materials such as letters of recommendation, standardized test scores (such as the GRE General Test, GRE Subject Test, GMAT, TWE, or the like), or an essay describing the applicant's academic interests and professional goals; to schedule a personal interview with departmental faculty; to present evidence of having completed specific courses with specific grades or of having specific kinds of work or life experiences; or to hold certain endorsements or certificates (such as a teaching certificate). For more specific information on each program, read the admission requirements section of the relevant program's listing in this catalog or contact the program's graduate advisor or the department office.

1. Bachelor's degree from an accredited institution, indicated on an official transcript. Exceptions may be granted to students from other institutions that have signed agreements through a Memorandum of Understanding (MOU).
2. An official transcript from the institution from which you received your Bachelor degree is required, as well as a transcript from institution(s) where any graduate level courses or degrees have been taken/completed. Applicants are not required to submit an official transcript of courses taken/completed at Western Michigan University. Departments may request additional course information/transcripts as necessary. Please check the requirements listed for your chosen program at www.wmich.edu/grad/admissions/landing.php.
3. An overall grade point average of at least 3.0 in the last two years of undergraduate work.
4. Evidence of having met any additional admission requirements stipulated by the individual degree program.
5. Acceptance by the academic unit offering the master's program and endorsement of the acceptance by the graduate dean.

Additionally, master’s students will be reviewed annually for eligibility to continue in the program. Upon the student’s initial enrollment, the department shall provide a document to the graduate student outlining the annual review criteria and procedures. The review will assist the student in measuring timely progress toward completion of the program of study and in providing documentation for awards or assistantships or, if deficiencies are apparent, note them and indicate corrections necessary. Uncorrected deficiencies and/or unsatisfactory progress may result in a student’s dismissal from the program.

Specialist Program Applicant

In addition to the minimum requirements for admission to a specialist program listed below, the University's single Specialist in Education (Ed.S.) program asks applicants to submit letters of recommendation and an autobiography; to present evidence of having completed specific courses with specific grades or of having specific kinds of work or life experiences; and may require the applicant to schedule a personal interview with departmental faculty. For more specific information on the specialist program in educational leadership, read the admission requirements section of the educational leadership, research and technology program's listing in this catalog or contact the program's graduate advisor or the department office.

1. Bachelor's degree from an accredited institution, indicated on an official transcript.
2. An official transcript from the institution from which you received your Bachelor degree is required, as well as a transcript from institution(s) where any graduate level courses or degrees have been taken/completed. Applicants are not required to submit an official transcript of courses taken/completed at Western Michigan University. Departments may request additional course information/transcripts as necessary. Please check the requirements listed for your chosen program at www.wmich.edu/grad/admissions/landing.php.
3. An overall grade point average of at least 3.0 in the last two years of undergraduate work, if applying with a bachelor's degree and no graduate work, and an overall grade point average of at least 3.0 for all graduate work undertaken beyond the bachelor's degree.

4. Scores on the GRE General Test (unless the program requires the completion of a Master's Degree prior to admission, at which point the program can decide if a GRE score is required for admission).
5. Evidence of having met any additional admission requirements stipulated by the individual specialist degree program.
6. Acceptance by the academic unit offering the specialist program and endorsement of the acceptance by the graduate dean.

Additionally, a specialist student's academic performance, professional development, research progress, and, where applicable, professional/ethical behavior will be reviewed annually to determine the student's eligibility to continue in the program. Upon the student's initial enrollment, the department shall provide a document to the graduate student outlining the annual review criteria and procedures. The review will assist the student in measuring timely progress toward completion of the program of study and in providing documentation for awards or assistantships or, if deficiencies are apparent, note them and indicate corrections necessary. Uncorrected deficiencies and/or unsatisfactory progress, performance, or behavior may result in a student's dismissal from the program.

Doctoral Program Applicant

In addition to the minimum requirements for admission to a doctoral program listed below, many of the University's doctoral programs will ask applicants to submit supplemental materials such as letters of recommendation or an autobiography or an essay describing the applicant's academic interests and professional goals; to present scores on a specific GRE Subject Test; to schedule a personal interview with departmental faculty; to present evidence of having completed specific courses with specific grades or of having specific kinds of work or life experiences; or to hold certain degrees or endorsements or certificates (such as a teaching certificate). For more specific information on each program, read the admission requirements section of the relevant program's listing in this catalog or contact the program's graduate advisor or the department office.

1. Bachelor's degree from an accredited institution, indicated on an official transcript.
2. An official transcript from the institution from which you received your Bachelor degree is required, as well as a transcript from institution(s) where any graduate level courses or degrees have been taken/completed. Applicants are not required to submit an official transcript of courses taken/completed at Western Michigan University. Departments may request additional course information/transcripts as necessary. Please check the requirements listed for your chosen program at www.wmich.edu/grad/admissions/landing.php.
3. For students who have completed any hours of graduate work, an overall grade point average of at least 3.0 for all graduate work undertaken beyond the bachelor's degree.
4. Scores on the GRE General Test.
5. Evidence of having met any additional admission requirements stipulated by the individual doctoral degree program.
6. Acceptance by the academic unit offering the doctoral program and endorsement of the acceptance by the graduate dean.

Additionally, a doctoral student's academic performance, professional development, research progress, and, where applicable, professional/ethical behavior will be reviewed annually to determine the student's eligibility to continue in the program. Upon the student's initial enrollment, the department shall provide a document to the graduate student outlining the annual review criteria and procedures. The review will assist the student in measuring timely progress toward completion of the program of study and in providing documentation for awards or assistantships or, if deficiencies are apparent, note them and indicate corrections necessary. Uncorrected deficiencies and/or unsatisfactory progress, performance, or behavior may result in a student's dismissal from the program.

Graduate Certificate Program Applicant

The graduate certificate program applicant will need to meet the following, minimum admission requirements.

1. Bachelor's degree from an accredited institution, indicated on an official transcript.

2. An official transcript from the institution from which you received your Bachelor degree is required, as well as a transcript from institution(s) where any graduate level courses or degrees have been taken/completed. Applicants are not required to submit an official transcript of courses taken/completed at Western Michigan University. Departments may request additional course information/transcripts as necessary. Please check the requirements listed for your chosen program at www.wmich.edu/grad/admissions/landing.php.
3. Evidence of having met any additional admission requirements stipulated by the individual graduate certificate program; and,
4. Acceptance by the academic unit offering the graduate certificate program and endorsement of the acceptance by the graduate dean.

Some graduate certificate programs may ask applicants to submit supplemental materials or to meet additional requirements. For more specific information on each certificate program, read the admission requirements section of the relevant program's listing in this catalog or contact the program's advisor.

Often an applicant will plan to pursue a graduate certificate program in conjunction with a graduate degree program. In such an instance, the applicant will need to meet the admission requirements for both the graduate degree program and the graduate certificate program.

Degree-Level Graduation Requirements

Departmental Program Policies

Each department requiring master's theses, specialist projects, or doctoral dissertations shall clearly describe its policies to the students, their advisors/chairpersons, committee members, and The Graduate College in formal written statements.

In addition, each department and its respective college, through the student's major advisor/chairperson and committee members, shall be responsible for the content and quality of the student's work and final project. Approval of the substance of the thesis/project/dissertation shall rest solely with the advisor/chairperson and committee members.

The Graduate College shall be responsible for approving proper format and style of the final product. The department shares preliminary responsibility for format and style through its program policies, and through faculty advising.

In addition, each academic unit in which there is a doctoral or specialist program or a master's thesis option will declare to the Graduate College its choice of a *single* style manual to be followed in the preparation of the body of the manuscript for all dissertations and theses in that unit. The academic unit may choose any manual which is considered standard to the discipline. The front a matter of the dissertation, specialist project or master’s thesis will follow the format of the University Guidelines.

Each doctoral program at Western Michigan University shall establish, and publish in the program's student manual, the procedures that govern the preparation and oral defense of the dissertation by the doctoral candidate. A model process is posted on the Graduate College website, but each program may establish, with the approval of The Graduate College, its own appropriate guidelines. In all cases, the manuscript must conform to the style and format requirements explained in the University’s Guidelines for the Preparation of These, Specialist Projects, and Dissertations.

Graduates of specific degree programs offered by Western Michigan University are expected to meet the same academic standards and requirements. These academic standards and requirements vary, however, by discipline, by degree level, by program concentration, and often by conditions related to a student's admission (for example, the completion of specified courses or experiential prerequisites). For more specific information about the graduation

requirements for each department's degree programs, read the program requirements section of the relevant department's listing in this catalog or contact the degree program's graduate advisor or the department office.

Non-degree Graduate Certificate

Each certificate program must have a minimum of nine (9) hours, with the number of hours required for each certificate commensurate with the breadth and depth of the program's topic. An outline of the Graduate Certificate Program requirements for each student must be submitted by the graduate advisor or program director to the Office of Graduation Auditing. The graduate certificate program of study will then be audited in the same manner as that used to audit a degree program. For a student concurrently pursuing a degree program and a Graduate Certificate Program, the outline of the graduate certificate program would be submitted separately from the master's, specialist, or doctoral program of study. For a student not pursuing a graduate degree, the outline of the graduate certificate program alone would be submitted to the Office of Graduation Auditing.

A student must apply, through the Office of Graduation Auditing, to graduate with a Graduate Certificate. The following general requirements must be met:

1. Completion of the requirements, as stated on the program of study, of the Graduate Certificate Program with a "B" (3.0) or better average;
2. A grade of "C" or better must be earned in every course listed on the program of study; and
3. Completion of departmental requirements, if any, of all graduate students in that department.

To signify that a student has satisfactorily completed an approved curriculum in a Graduate Certificate program, a certificate of completion is awarded. Regular admission to the program by the relevant academic unit is required.

Courses for the certificate must be completed no more than six years prior to the conferral of the certificate. Students whose certificate programs are taken primarily through part-time study have the option of requesting an extension from the graduate dean. Extensions beyond the six years may also be granted for other students by the dean of the Graduate College for such legitimate reasons as illness, injury, or hardship. In such situations, the student and department must demonstrate how the student will bring up to date the content knowledge from courses taken more than six years before the projected date of completion of the certificate program.

For more information about the completion requirements for each certificate program, read the program requirements section of the relevant program's listing in this catalog or contact the program's advisor or the department office.

Master’s Degree

In addition to the minimum University requirements for graduation listed below, each master's degree program requires students to complete satisfactorily specific courses, examinations, research, and/or experiences. For more complete information about the requirements for each master's program, read the program requirements section of the relevant program's listing in this catalog or contact the program's graduate advisor or the department office.

1. Minimum Credit Hours: Completion of a minimum of thirty hours of accepted graduate credit in an approved program of study. Hours in addition to thirty may be required by a specific program; consult the program advisor for complete information.
    - At least one-half of the credits earned for the master’s degree must be in courses numbered 6000 or above.
    - A master’s level Graduate Student Permanent Program of Study may include a maximum of four hours of credit in 5980 (Readings).
2. Grade Point Average: A degree program grade point average of at least 3.0 is required for all work taken for the master's degree at Western Michigan University.
    - Credit toward the master's degree is granted only for graduate courses in which a grade of "C" or better is earned. Courses with lower grades will not count toward graduation.

3. Transfer Credit: Credits may be transferred from one master's program at Western Michigan University to another as long as all requirements of the new program are met. A student enrolled in a master's program must complete a minimum of 24 semester hours at Western Michigan University unless an agreed upon Memorandum of Understanding for a 1+1 program exists with a partner institution where specific course work and semester hours have been identified for transfer credit. Any credits transferred into a master's program from other universities may not exceed sixteen semester credit hours. Graduate credit may be transferred from other institutions provided:
    - The credits were earned at an institution accredited for graduate study and are of "B" grade (3.0) or better. Moreover, the student's overall grade point average for all graduate work taken at the other institution must also be "B" (3.0) or better. [Honor points and grades earned at another institution do not transfer to Western Michigan University. Transfer credit will be recorded on the Western Michigan University transcript at "Credit" (CR) only and will not be calculated into the honor points earned and the grade point average at Western Michigan University.]
    - The credit is earned within a six-year period prior to graduation from Western Michigan University, is represented on an official transcript of the other institution, and is identified on that transcript as graduate credit.
    - The student's department verifies that the transfer credits contribute to the student's degree program and includes them in the student's Graduate Student Permanent Program of Study.
    - The graduate dean approves the inclusion of the transferred credits in the student's Graduate Student Permanent Program of Study.
4. Time Limit: All work accepted for the degree program must be completed within six years preceding the date on which the master's degree is conferred. All work must be completed satisfactorily by the day of graduation. Students whose degrees are taken primarily through part-time study have the option of requesting an extension from the graduate dean. Extensions beyond the six years may also be granted for other students by the dean of the Graduate College for such legitimate reasons as illness, injury, or hardship. In such situations, the student and department must demonstrate how the student will bring up to date the content knowledge from courses taken more than six years before the projected date of graduation.
5. Research Compliance: Students conducting research that involves human or animal subjects, biohazards, genetic materials, or nuclear materials/radiation must have prior approval of the research proposal by the appropriate University board/committee/official, thus assuring compliance with the regulations for the protection of such subjects or for the use of such materials. There are no exceptions to this requirement. For more information, call the Office of the Vice President for Research, (269) 387-8298.
6. Enrollment in Master's Thesis (7000): A student who intends to register for the Master's Thesis (7000) for the first time is required to file a completed Permission to Elect form (available at wmich.edu/grad/forms/) with the Graduate College before registering to ensure that the student is informed about the regulations pertaining to the preparation and submission of the manuscript and the requirements for research involving regulated subjects and hazardous materials.
7. Continuous Enrollment in 7000: The course 7000, Master's Thesis, is six credit hours and may be registered for in increments of one to six hours. Following a student's first enrollment in 7000, the student must have continuous enrollment in 7000 until all thesis requirements are completed satisfactorily and approved by the appropriate bodies. Continuous enrollment is defined as enrollment in all Fall and Spring semesters from the initial enrollment in 7000 to the semester in which the student graduates (some programs may require students to be enrolled during Summer sessions as well as Fall and Spring semesters; students should refer to respective program handbooks).

    - A student unable to complete the thesis within the first six hours of registration will be required to continuously enroll in 7000; however, only six hours of 7000 will count toward meeting the program requirements for the master's degree.
    - If the student will graduate in Summer I or Summer II, the student must be enrolled in that session.
    - For students on continuous enrollment who are not enrolled in Summer I and Summer II sessions, pre-enrollment in the subsequent Fall semester is necessary for access to library resources during Summer I and Summer II. Students who desire to have remote access to WMU's library databases during the Summer I and Summer II sessions may do so by paying the customary computer fee for each session in which computer and remote library services are desired.

- Students on continuous enrollment status who are not enrolled in Summer I or Summer II may not hold graduate appointments during any session in which they are not enrolled and will not qualify for resources restricted to enrolled students, such as the Graduate Student Research and Travel Fund.

8. Submission of Master's Thesis (7000) Manuscript: The manuscript must be submitted by the deadline established by the Graduate College and must conform to the style and format requirements explained in the University's *Guidelines for the Preparation of Theses, Specialist Projects, and Dissertations* (deadlines and the guidelines available on the Graduate College website)Also, the manuscript may be submitted for review only after it has been approved by the student's thesis committee and only with the signed committee approval forms certifying departmental approval of the manuscript and of the student's successful defense of it. Students must submit these approval forms as well as any other documents containing signatures, such as research protocol approval letters, to the Graduate College.

See the Graduate Studies section of this catalog, under GRAD 7000, for additional information regarding the Master's Thesis.

Second Master's Degree

A student enrolled for a second master's degree from Western Michigan University may transfer internally up to 12 semester hours from the first master's degree from Western Michigan University and must fulfill all requirements of the second master's degree. Any credits transferred internally into the second master's program must have been completed within 6 years of the conferral of the second master's degree. The second degree program must fulfill all of the other usual requirements for a master's degree.

Acquiring a Master's Degree *en route* to the Doctoral Degree

Students who enter a doctoral program with a bachelor's degree may, upon recommendation of their department, acquire the master's degree by the following means:

1. The student requests the departmental graduate advisor to review the student's program of study to ascertain that it meets the requirements for the master's degree.
2. The graduate advisor or chair submits a program of study demonstrating that the student has met all requirements for the master's degree as defined by the Graduate College and the student's academic unit/department and submits a letter indicating that the department recommends that the student be awarded the master's degree.
3. The student files an application for graduation with a master's degree, initiating the graduation audit which determines the student's eligibility for graduation.
4. A student who receives a master's degree *en route* to the doctoral degree must complete the minimum number of semester hours of graduate course work beyond the master's degree specified by the doctoral program in which the student is enrolled and must meet the additional competencies that distinguish the doctoral degree from the master's degree.
5. A separate application for graduation with a doctoral degree must be filed.

Students who enter a doctoral program holding a master's degree may, upon recommendation of their department, acquire a second master's degree *en route* to the doctoral degree by the following means:

1. Six hours from the first master's program may be applied to the second degree if evaluated and approved by the advisor and the graduation auditor as meeting the general and program requirements for transfer credit to a graduate program.
2. The student requests the departmental graduate advisor to review the student's program of study to ascertain that it meets the requirements for the master's degree.

3. The graduate advisor or chair submits a signed program of study for the master's degree demonstrating that the student has met all requirements for the master's degree as defined by the Graduate College and the student's academic unit/department and appends a letter indicating that the department recommends that the student be awarded a master's degree.
4. The student files an application for graduation with a master's degree, initiating the graduation audit which determines the student's eligibility for graduation.
5. With the approval of the advisor, the semester hours of course work earned and applied to the second master's degree may be applied to the doctoral degree. The student must complete the minimum number of semester hours specified by the doctoral program and must demonstrate that he or she has met the additional competencies that distinguish the doctoral degree from the master's degree.
6. A separate application for graduation with a doctoral degree must be filed.

Specialist Degree

In addition to the minimum University requirements for graduation listed below, each specialist degree program requires students to complete specific courses, examinations, research, and/or experiences. For more complete information about the requirements for a specialist program, read the program requirements section of the relevant program's listing in this catalog or contact the program's graduate advisor or the department office.

1. Minimum Credit Hours: Completion of a minimum of sixty hours of accepted graduate credit in an approved program of study. Hours in addition to sixty may be required by a specific program; consult the program advisor for complete information.
    - At least one-half of the credits earned for the specialist degree must be in courses numbered 6000 or above.
    - A specialist level Graduate Student Permanent Program of Study may include a maximum of four hours of credit in 5980 (Readings).
2. Residency Requirement: A residency requirement is established by each specialist program and approved by the University's curriculum review process and must be met prior to graduation. Unless otherwise approved by the University for an individual academic unit, the general residency requirement for specialist students is one academic semester of full-time study on campus or enrollment in two sessions in consecutive years and the intervening semesters. Consult the program advisor for complete information.
3. Grade Point Average: A degree program grade point average of at least 3.0 is required for all work taken for the specialist degree at Western Michigan University.
    - Credit toward the specialist degree is granted only for graduate courses in which a grade of "C" or better is earned. Courses with lower grades will not count toward graduation.
4. Transfer Credit: A student with a master's degree from another institution who completes the remaining credits for a specialist degree at Western Michigan University may transfer up to thirty-six semester hours of approved graduate credit. A student without a master's degree who completes a specialist degree at Western Michigan University may transfer up to twelve semester hours of approved graduate credit. Graduate credit earned at another institution is eligible for transfer to a Western Michigan University specialist program provided:
    - The credit is earned at an institution accredited for graduate study and is of "B" grade (3.0) or better. Moreover, the student's overall grade point average for all graduate work taken at the other institution must also be "B" (3.0) or better. [Honor points and grades earned at another institution do not transfer to Western Michigan University. Transfer credit will be recorded on the Western Michigan University transcript as "Credit" (CR) only and will not be calculated into the honor points earned and the grade point average at Western Michigan University.]
    - The credit is earned within a six-year period prior to graduation from Western Michigan University, is represented on an official transcript of the other institution, and is identified on that transcript as graduate credit.
    - The student's program advisor verifies that the transfer credits contribute to the student's degree program and includes them in the student's Graduate Student Permanent Program of Study.
    - The graduate dean approves the inclusion of the transferred credits in the student's Graduate Student Permanent Program of Study.

5. Time Limit: A student admitted to the specialist program with a master's degree is required to complete the specialist program within five years; a student admitted without a master's degree is required to complete the specialist program within six years. Students entering with a master's degree will be permitted five years instead of six. All work must be completed satisfactorily by the day of graduation. Students whose degrees are taken primarily through part-time study have the option of requesting an extension from the graduate dean. Extensions beyond the six years may also be granted for other students by the dean of the Graduate College for such legitimate reasons as illness, injury, or hardship. In such situations, the student and department must demonstrate how the student will bring up to date the content knowledge from courses taken more than six years before the projected date of graduation.
6. Research Compliance: Students conducting research that involves human or animal subjects, biohazards, genetic materials, or nuclear materials/radiation must have prior approval of the research proposal by the appropriate University board/committee/official, thus assuring compliance with the regulations for the protection of such subjects or for the use of such materials. There are no exceptions to this requirement. For more information, call the Office of the Vice President for Research, (269) 387-8298.
7. Enrollment in Specialist Project (7200): A student who intends to register for the course Specialist Project (7200) for the first time is required to file a completed Permission to Elect form with the Graduate College before registering to ensure that the student is informed about the regulations pertaining to the preparation and submission of the manuscript and to the requirements for research involving regulated subjects and hazardous materials.
8. Continuous Enrollment in 7200: The course 7200, Specialist Project, may be registered for in increments of one to six hours. Following a student's first enrollment in 7200, the student must have continuous enrollment in 7200 until all project requirements are completed satisfactorily and approved by the appropriate bodies. Continuous enrollment is defined as enrollment in all Fall and Spring semesters from the initial enrollment to the semester in which the student graduates (some programs may require students to be enrolled during Summer sessions as well as Fall and Spring semesters; students should refer to respective program handbooks).

    - A student unable to complete the project within the first six hours of registration will be required to continuously enroll in 7200; however, only six hours of 7200 will count toward meeting the program requirements for the master's degree.
    - If the student will graduate in Summer I or Summer II, the student must be enrolled in that session.
    - For students on continuous enrollment who are not enrolled in Summer I and Summer II sessions, pre-enrollment in the subsequent Fall semester is necessary for access to library resources during Summer I and Summer II. Students who desire to have remote access to WMU's library databases during the Summer I and Summer II sessions may do so by paying the customary computer fee for each session in which computer and remote library services are desired.
    - Students on continuous enrollment status who are not enrolled in Summer I or Summer II may not hold graduate appointments during any session in which they are not enrolled and may not qualify for resources restricted to enrolled students, such as the Graduate Student research and Travel Fund.

9. Submission of Specialist Project (7200) Manuscript: The manuscript must be submitted by the deadline established by the Graduate College and must conform to the style and format requirements explained in the University's *Guidelines for the Preparation of Theses, Specialist Projects, and Dissertations* (deadlines and guidelines available on the Graduate College website). Also, the manuscript may be submitted for review only after it has been approved by the student's project committee and only with the signed committee approval forms certifying departmental approval of the manuscript and of the student's successful defense of it. Students must submit these approval forms as well as any other documents containing signatures, such as research protocol approval letters, to the Graduate College.

See the Graduate Studies section of this catalog, under GRAD 7200, for additional information regarding the Specialist Project.

Doctoral Degree

The doctoral degree is awarded by Western Michigan University on the basis of evidence that the candidate has achieved a high level of proficiency in research and scholarship, a mastery of a special field of learning, and the professional competence to work independently in that special field. The degree is not conferred merely upon fulfillment of minimum, technical requirements nor merely by accumulating course credits.

All doctoral programs at Western Michigan University have special and particular requirements for the degree, and the student will be governed by these, which are described in department handbooks and in the *Graduate College Catalog*.

In addition to the minimum University requirements for graduation listed below, each doctoral degree program requires students to complete specific courses, examinations, research, and/or experiences. For more complete information about the requirements for each doctoral program, read the program requirements section of the relevant program's listing in this catalog or contact the program's graduate advisor or the department office.

1. Minimum Credit Hours: After admission to the doctoral program, completion of a minimum of thirty hours, excluding the dissertation, at Western Michigan University in an approved program of study. Hours in addition to thirty may well be required by a specific program; consult the program advisor for complete information. The thirty hours, excluding the dissertation, may not include any credit earned at another institution. Credit earned at another institution in addition to the thirty hours and dissertation earned at WMU after admission to the doctoral program, however, may be approved by the doctoral program advisor and included in the student's program of study.

    - Each student's program will be planned by a committee selected in consultation between the student and the graduate advisor of the program in which the student wishes to study. The exact distribution of courses, seminars, and research will depend upon the program and may vary from one student to another. Each program, however, will contain a significant amount of research, and each student will be required to complete a dissertation [except in those programs where a dissertation is not a program requirement]. In addition to the appointment of a doctoral dissertation committee, approval of the dissertation proposal must be made by the committee.
    - At least one-half of the credits earned for the doctoral degree must be in courses numbered 6000 or above.
    - A doctoral level Graduate Student Permanent Program of Study may include a maximum of four hours of credit in 5980 (Readings).

2. Research Tools: Demonstration of proficiency in two appropriate research tools, as determined by the department and approved by the University. Normally, the research tools are selected from among foreign language, statistics, research methodology, and computer programming; however, other tools have been approved for some programs.
3. Residency Requirement: There is no general residency requirement for doctoral students. Each doctoral program or degree granting unit (e.g. college) may, however, with approval of the University through the curriculum review process, establish its own residency requirement. (See the Graduate College website for the doctoral candidacy admission form). Students must meet any such residency requirement prior to approval for candidacy. Students should consult with their advisor regarding the residency requirement for the specific program of interest.
4. Comprehensive Examinations: Passing the required comprehensive examination(s) that cover the principal subject matter areas included in the student's program of study.
5. Grade Point Average: A degree program grade point average of at least 3.0 (or 3.25 in some programs) is required for all work taken for the doctoral degree at Western Michigan University.

    - Credit toward the doctoral degree is granted only for graduate courses in which a grade of "C" or better is earned. Courses with lower grades will not count toward graduation.

6. Transfer Credit: Credits may be transferred from one doctoral program at Western Michigan University to another as long as all requirements of the new program are met. Often doctoral students attend Western

Michigan University after earning a master's or other graduate degree elsewhere, and their subsequent course work is then usually elected at Western Michigan University. However, graduate credit earned at another institution after admission to the doctoral program is eligible for transfer provided:

- The credit is earned at an institution accredited for graduate study and is of "B" grade (3.0) or better. Moreover, the student's overall grade point average for all graduate work taken at the other institution must also be "B" (3.0) or better. [Honor points and grades earned in courses at another institution do not transfer to Western Michigan University. Transfer credit will be recorded on the Western Michigan University transcript as "Credit" (CR) only and will not be calculated into the honor points earned and the grade point average at Western Michigan University. A graduate degree earned elsewhere that comprises part of the student's doctoral program of study at Western Michigan University will be posted on the student's transcript, but the degree's courses, grades, and honor points will not be transferred nor posted on the transcript.]
- The credit is earned within a seven-year period prior to graduation from Western Michigan University, is represented on an official transcript of the other institution, and is identified on that transcript as graduate credit.
- The student's program advisor verifies that the transfer credits contribute to the student's degree program and includes them in the student's Graduate Student Permanent Program of Study.
- The graduate dean approves the inclusion of the transferred credits in the student's Graduate Student Permanent Program of Study.

7. Time Limit: After admission, all requirements for the degree must be completed within seven years preceding the date on which the degree is conferred. Students whose degrees are taken primarily through part-time study have the option of requesting an extension from the graduate dean. Extensions beyond the seven years may also be granted for other students by the dean of the Graduate College for such legitimate reasons as illness, injury, or hardship. In such situations, the student and department must demonstrate how the student will bring up to date the content knowledge from courses taken more than seven years before the projected date of graduation.
8. Research Compliance: Students conducting research that involves human or animal subjects, biohazards, genetic materials, or nuclear materials/radiation must have prior approval of the research proposal by the appropriate University board/committee/official, thus assuring compliance with the regulations for the protection of such subjects or for the use of such materials. There are no exceptions to this requirement. For more information, call the Office of the Vice President for Research, (269) 387-8298.
9. Enrollment in Doctoral Dissertation (7300): A student who registers for the course Doctoral Dissertation (7300) for the first time is required to file a completed Permission to Elect form with the Graduate College before registering to ensure that the student is informed about the regulations pertaining to the preparation and submission of the manuscript and to the requirements for research involving regulated subjects and hazardous materials. An approved, written dissertation and the oral defense of it are required for graduation.

    - Doctoral Dissertation (7300) varies in credit from a minimum of twelve hours to a maximum of twenty-four hours. The minimum and maximum number of hours of 7300 required by each department in a student's program of study will be determined by the department in a proposal approved by the University's curriculum review process. A department may require all students within the program to register for a specific, common total of hours between twelve and twenty-four, or a program may require different students within the program to register for a variety of total hours between twelve and twenty-four. For more complete information about the dissertation requirements for each doctoral program, read the program requirements section of the relevant program's listing in this catalog or contact the program's graduate advisor or the department office.
    - See the Graduate Studies section of this catalog, under GRAD 7300, for additional information regarding the Doctoral Dissertation.

10. Continuous Enrollment in 7300: The course 7300, Doctoral Dissertation, may be registered for in increments of one or more hours. Following a student's first enrollment in 7300, the student must have continuous enrollment in 7300 until all dissertation requirements are completed satisfactorily and approved

by the appropriate bodies. Continuous enrollment is defined as enrollment in all Fall and Spring semesters from the initial enrollment in 7300 to the semester in which the student graduates (some programs may require students to be enrolled during Summer sessions as well as Fall and Spring semesters; students should refer to respective program handbooks).

- A student unable to complete the dissertation within the number of hours specified on the program of study will be required to continuously enroll in 7300; however, only the program-stipulated hours for 7300 will count toward meeting the program requirements for the doctoral degree.
- If the student will graduate in Summer I or Summer II, the student must be enrolled in that session.
- For students on continuous enrollment who are not enrolled in Summer I and Summer II sessions, pre-enrollment in the subsequent Fall semester is necessary for access to library resources during Summer I and Summer II. Students who desire to have remote access to WMU's library databases during the Summer I and Summer II sessions may do so by paying the customary computer fee for each session in which computer and remote library services are desired.
- Students on continuous enrollment status who are not enrolled in Summer I or Summer II may not hold graduate appointments during any session in which they are not enrolled and will not qualify for resources restricted to enrolled students, such as the Graduate Student Research and Travel Fund.

11. Dissertation Defense Scheduling: The doctoral candidate must schedule an oral, public dissertation defense. The following procedures must be observed:

    - The doctoral candidate and the candidate's advisor are responsible for scheduling the oral defense with all members of the doctoral committee, notifying the department office, and reserving the room. The department representative will then notify the Graduate College.
    - The doctoral candidate must have applied for graduation, be currently listed in an active graduation class, and the candidate's graduation audit must show that all requirements except the defense and submission of the dissertation have been met. The oral defense may not be scheduled without a graduation audit and clearance from the Office of Graduation Auditing that completion of all program requirements except the dissertation has taken place.
    - The candidate must complete the dissertation defense scheduling form found on the Graduate College website and email the abstract to the Coordinator of Theses and Dissertations.
    - The dissertation defense scheduling form must be submitted to the Graduate College at least ten (10) working days (2 weeks) prior to the proposed defense in conjunction with the Graduate College calendar of deadlines, and
    - A two-hour block of time must be reserved for the defense. At least three members of the student's committee must be present at the defense.

12. Submission of Doctoral Dissertation (7300) Manuscript: The manuscript must be submitted by the deadline established by the Graduate College and must conform to the style and format requirements explained in the University's *Guidelines for the Preparation of Theses, Specialist Projects, and Dissertations* (deadlines and guidelines available on the Graduate College website). Also, the manuscript may be submitted for review only after it has been approved by the student's dissertation committee and only with the signed committee approval forms certifying departmental approval of the manuscript and of the student's successful defense of it. Students must submit these approval forms as well as any other documents containing signatures, such as research protocol approval letters, to the Graduate College.
13. Publication of the Dissertation Manuscript: All doctoral dissertations will be published by ProQuest/UMI and an abstract of the dissertation will be prepared by the student for publication in their online database. A check made payable to WMU, as well as other items specified on the dissertation check-in form on the Graduate College website, must accompany the manuscript when it is submitted to the Graduate College.
14. Doctoral students must complete all requirements for graduation by the established commencement date.

Doctoral Candidacy

A candidate for a doctoral degree, prior to the session or semester in which the dissertation is defended, is required to have earned or completed satisfactorily the following and to have received approval by the academic program unit to continue study toward a doctoral degree:

1. A degree program grade point average of 3.0 or better (3.25 in some programs)
2. Appointment of a doctoral dissertation committee and approval of the dissertation proposal by the committee
3. All courses (excluding dissertation credit) and program requirements
4. All research tool requirements
5. Comprehensive examinations
6. Fulfillment of the residency requirement, if required by the program
7. Graduate dean's approval of an advisor-approved Doctoral Student Permanent Program; and
8. Graduate dean's approval of the Doctoral Candidacy form.

Individual programs may have additional requirements for candidacy. See wmich.edu/grad/forms for the doctoral candidacy admission form.

Program Changes

Any program change occurring after the last day of the drop/add period will be effective for the following semester or session.

Thesis, Project, and Dissertation *Committee* Requirements

Master's Thesis Committee

A master's thesis committee shall be appointed for each student undertaking a thesis as partial fulfillment of the requirements for a master's degree. The purpose of the thesis committee is twofold: 1) to provide the range of expertise necessary to advise a student in the conduct of the master's thesis, and 2) to ensure that evaluation of the thesis represents a consensus of professionals in the student's chosen discipline.

The master's thesis committee is charged with the supervision and evaluation of the master's thesis, a task that includes but is not limited to the following responsibilities: a) advise the student on selection and/or development of a master's thesis topic; b) review and approve a proposal for the master's thesis; c) provide consultation regarding progress on the thesis; d) evaluate the final document; and e) in those departments requiring an oral defense, evaluate the oral defense of the thesis.

In addition to the previously described responsibilities that are generic to all thesis committee members, the chairperson of the committee assumes the following additional responsibilities: a) in those departments where this responsibility is not discharged through other mechanisms, advise the student regarding selection of thesis committee members; b) routinely monitor student progress on the thesis; c) call thesis committee meetings; d) evaluate the readiness of the thesis proposal and of the thesis for committee review and action; and e) inform the student of the need to adhere to the *Guidelines for the Preparation of Theses, Specialist Projects, and Dissertations* (available on the Graduate College website).

Each thesis committee shall consist of a minimum of three members or associate members of the graduate faculty of Western Michigan University. The committee chair must be a full member of the graduate faculty. At least two of the committee members must be from the department or academic program in which the student is pursuing the master's degree. The appointment of a master's thesis committee is a three-stage process requiring, first, a mutual agreement between the master's student and the prospective committee members; second, a formal appointment by the chairperson of the department (or the chairperson's designee); and third, notification of and approval by the office of the dean of the Graduate College regarding this appointment.

Each unit offering a master's degree in which the thesis is either required or optional may approve and disseminate additional guidelines concerning master's thesis committees, including the qualifications for committee membership, the procedures used to select and appoint committee members, and the specific functions and responsibilities that the members of these committees have. Additionally, each unit is encouraged to disseminate an updated list of faculty who qualify to serve on master's thesis committees and their respective areas of expertise (a current list of graduate faculty members by department is available on the Graduate College website).

The thesis must be in a form acceptable to the unit and to the Graduate College before the student may be awarded the master's degree. The thesis format must adhere to the Guidelines for the Preparation of Theses, Specialist Projects, and Dissertations and the thesis submitted to the Graduate College for review by the deadline for the student's term of graduation (deadlines and guidelines available on the Graduate College website).

If there are differences among the members of a master's thesis committee over the approval of the thesis and its oral defense, it shall be the responsibility of the committee to undertake every reasonable effort to resolve these differences and come to a unanimous decision.

In the event a student wishes to appeal a negative decision by the student's master's thesis committee, the student shall first take the appeal to this same committee, which shall hear the appeal and render a decision. In case the committee cannot reach a unanimous agreement and the student wishes to appeal further a negative decision, a Review Committee shall be established consisting of the dean of the Graduate College, the appropriate academic dean, and the chairperson or director of the unit. The Review Committee shall seek to resolve the controversy without passing on the thesis. The Review Committee handling such a case is limited to procedural actions, such as reconstituting the master's thesis committee if the case merits it.

Specialist Project Committee

A specialist project committee shall be appointed for each student undertaking a project as partial fulfillment of the requirements for a specialist degree. The purpose of the project committee is twofold: 1) to provide the range of expertise necessary to advise a student in the conduct of the specialist project, and 2) to ensure that evaluation of the project represents a consensus of professionals in the student's chosen discipline.

The specialist project committee is charged with the supervision and evaluation of the specialist project, a task that includes but is not limited to the following responsibilities: a) advise the student on selection and/or development of a specialist project topic; b) review and approve a proposal for the specialist project; c) provide consultation regarding progress on the project; d) evaluate the final document; and e) in those departments requiring an oral defense, evaluate the oral defense of the project.

In addition to the previously described responsibilities that are generic to all project committee members, the chairperson of the committee assumes the following additional responsibilities: a) in those departments where this responsibility is not discharged through other mechanisms, advise the student regarding selection of project committee members; b) routinely monitor student progress on the project; c) call project committee meetings; d) evaluate the readiness of the project proposal and of the project for committee review and action; and e) inform the student of the need to adhere to the *Guidelines for the Preparation of Theses, Specialist Projects, and Dissertations* (available on the Graduate College website).

Each project committee shall consist of a minimum of three members or associate members of the graduate faculty of Western Michigan University. The committee chair must be a full member of the graduate faculty. At least two of the committee members must be from the department or academic program in which the student is pursuing the specialist degree. The appointment of a specialist committee is a three-stage process requiring, first, a mutual agreement between the specialist student and the prospective committee members; second, a formal appointment by the chairperson of the department (or the chairperson's designee); and third, notification of and approval by the office of the dean of the Graduate College regarding this appointment.

Each unit offering a specialist degree in which the project is either required or optional may approve and disseminate additional guidelines concerning specialist project committees, including the qualifications for committee membership, the procedures used to select and appoint committee members, and the specific functions and responsibilities that the members of these committees have. Additionally, each unit is encouraged to disseminate an updated list of faculty who qualify to serve on specialist project committees and their respective areas of expertise (a current list of graduate faculty members by department is available on the Graduate College website).

The specialist project must be in a form acceptable to the unit and to the Graduate College before the student may be awarded the specialist degree. The project format must adhere to the *Guidelines for the Preparation of Theses, Specialist Projects, and Dissertations* and the project submitted to the Graduate College for review by the deadline for the student's term of graduation (deadlines and guidelines available on the Graduate College website).

If there are differences among the members of a specialist project committee over the approval of the project and its oral defense, it shall be the responsibility of the committee to undertake every reasonable effort to resolve these differences and come to a unanimous decision.

In the event a student wishes to appeal a negative decision by the student's specialist project committee, the student shall first take the appeal to this same committee, which shall hear the appeal and render a decision. In case the committee cannot reach a unanimous agreement and the student wishes to appeal further a negative decision, a Review Committee shall be established consisting of the dean of the Graduate College, the appropriate academic dean, and the chairperson or director of the unit. The Review Committee shall seek to resolve the controversy without passing on the project. The Review Committee handling such a case is limited to procedural actions, such as reconstituting the specialist project committee if the case merits it.

Doctoral Dissertation Committee

A doctoral dissertation committee shall be appointed for each student undertaking a dissertation as partial fulfillment of the requirements for a doctoral degree. The purpose of the dissertation committee is to review the dissertation proposal, procedures, and results; to make suggestions relative to these matters to the student; and to decide whether to approve the dissertation and the oral defense as fulfilling these requirements for the doctoral degree.

Each doctoral dissertation committee shall consist of at least three members. The student's major dissertation advisor shall serve as chairperson of the committee. At least one member shall be from outside the student's department (this person may be from a related cognate discipline, from outside the student's college, or from outside WMU) who shall serve as a bona fide, fully participating member of the committee. The committee shall be approved and recommended by the unit, approved by the office of the appropriate academic dean, and approved and appointed by the graduate dean. Each member of the committee must be either a member or an associate member of the graduate faculty; the committee chair must be a full member of the graduate faculty (a current list of graduate faculty members by department is available on the Graduate College website).

Each unit offering a doctoral program shall approve and publish its policies concerning doctoral dissertation committees, including the qualifications for membership on doctoral dissertation committees, the procedures used to select who should serve on these committees, and the specific functions and responsibilities that the members of these committees have. The chairperson of each student's doctoral dissertation committee shall indicate in writing the specific responsibilities that individual members of that committee have.

The formal defense of the dissertation must be scheduled with the Graduate College at least two weeks in advance. All members of this committee must approve the dissertation and at least three must be in attendance for and approve its oral defense. The dissertation must be in a form acceptable to the unit and to the Graduate College before the student may be awarded the doctoral degree. The dissertation format must adhere to the *Guidelines for the Preparation of Theses, Specialist Projects, and Dissertations* and the dissertation submitted to the Graduate College for review by the deadline for the student’s term of graduation (deadlines and guidelines available on the Graduate College website).

If there are differences among the members of a doctoral dissertation committee over the approval of the dissertation and its oral defense, it shall be the responsibility of the committee to undertake every reasonable effort to resolve these differences and come to a unanimous decision.

In the event a student wishes to appeal a negative decision by the student's doctoral dissertation committee, the student shall first take the appeal to this same committee, which shall hear the appeal and render a decision. In case the committee cannot reach a unanimous agreement and the student wishes to appeal further a negative decision, a Review Committee shall be established consisting of the dean of the Graduate College, the appropriate academic dean, and the chairperson or director of the unit. The Review Committee shall seek to resolve the controversy without passing on the dissertation. The Review Committee handling such a case is limited to procedural actions, such as reconstituting the doctoral dissertation committee if the case merits it.

Graduate Faculty Appointments

The Graduate Faculty is responsible for graduate education at Western Michigan University. Membership in the Graduate Faculty may be as full members or associate members. Full members are able to provide all functions relating to graduate education. Associate members may provide specific functions according to the sub category in which they are appointed. All faculty members who hold Board appointments are eligible to be members of the Graduate Faculty. Other individuals who are needed to perform specific functions of the Graduate Faculty may be approved as associate members of the Graduate Faculty. The Graduate College shall periodically publish a complete list of current graduate Faculty appointments.

Functions of the Graduate Faculty

Individuals with full membership in the Graduate Faculty are able to perform all of the following functions:

a. Teach graduate level courses.
b. Advise students in graduate degree and certificate programs.
c. Serve on graduate thesis, project, dissertation, and examination committees.
d. Direct graduate theses, projects, and dissertations.
e. Serve on the Graduate Studies Council and its subcommittees, on departmental graduate committees, and on other University committees relating solely to graduate education.

Individuals with associate membership in the Graduate Faculty may assume functions as designated below:

1. Board appointed faculty
    a. teach graduate level courses;
    b. advise students in graduate degree and certification programs;
    c. serve on graduate thesis, project, dissertation, or examination committees; and
    d. serve on the Graduate Studies Council and its subcommittees, on committees relating solely to graduate education.
2. Non-board appointed faculty
    a. teach graduate level courses;
    b. advise students in graduate degree and certification programs;
    c. serve on graduate thesis, project, dissertation, or examination committees; and
    d. serve on the Graduate Studies Council and its subcommittees, on departmental graduate committees, and on other University committees relating solely to graduate education.
3. Individuals not employed by Western Michigan University
    a. serve on graduate thesis, project, dissertation, or examination committees as appropriate.

Criteria for Appointment

1. Criteria for appointment to full membership
    a. General criteria
        1) Appointment to the faculty by the Board of Trustees of Western Michigan University.
        2) Earned doctorate or other earned terminal degree as identified in departmental criteria

3) Current involvement in appropriate research and/or artistic or professional endeavors. Unless otherwise specified in departmental criteria, determination for appointment is to be based upon the following evidence within the previous five years:
   a) One book; OR
   b) two publications in peer reviewed journals, national monographs, or chapters in a book; OR
   c) three presentations at a regional, national, or international venue; OR
   d) five performances or exhibits;
   e) some appropriate number and/or amount of external grants and contracts, as determined by departmental criteria; OR
   f) a combination of the above criteria.
4) Appropriate teaching and/or professional experience as determined by departmental criteria.

b. Department criteria
   1) Each department/unit shall specify the terminal degree required in its discipline(s). If departmental criteria have not been specified, the terminal degree shall be the doctorate.
   2) A department/unit may specify additional criteria. Department criteria shall be approved by the dean of the college, the dean of the Graduate College, and the Graduate Studies Council.

2. Criteria for appointment to associate membership
   a. General criteria
      1) Board appointed faculty
         a) terminal degree in one's discipline, as determined by departmental criteria; and/or
         b) appropriate teaching and/or professional experience as determined by departmental criteria.
      2) Non-board appointed faculty
         a) terminal degree in one's discipline, OR
         b) expertise in one's discipline by virtue of education or experience as specified by the department.
      3) Individuals not employed by Western Michigan University
         a) expertise in one's discipline by virtue of education or experience as specified by the department.

3. Term of appointment of full members

The usual period of an appointment to full membership in the Graduate Faculty shall be from 1 July of a given year to 30 June five years later. Faculty members holding a temporary board appointment with a term of at least two years duration shall not be given an appointment to membership on the Graduate Faculty for a period of time in excess of their term of appointment to the University. Appointments with effective dates other than 1 July shall be for a period of time not exceeding five and one-half years and shall expire on 30 June of the appropriate year.

4. Term of appointment for associate members

The usual period of an appointment to associate membership in the Graduate Faculty shall be from 1 July of a given year to 30 June three years later. Appointments with effective dates other than 1 July shall be for a period of time not exceeding three and one-half years and shall expire on 30 June of the appropriate year. Approval for associate members not employed by Western Michigan University shall be only for the period of time required to complete their service on the thesis, project, or dissertation committee.

5. Procedures for appointment of members
   a. Each department/unit offering graduate work shall nominate for membership in the Graduate Faculty those eligible faculty members who meet the established departmental criteria. Departments/units may nominate faculty members from outside their own departments/units.
   b. Departmental nomination shall be made on the Graduate Faculty Nomination Form. Nominations shall be reviewed by the dean of the college and shall be forwarded with recommendation to the dean of the Graduate College for action.
   c. Individuals who hold appointment in one department may serve on graduate thesis, project, dissertation, or examination committees in other departments when appropriate and when requested by those departments.
   d. Appeals concerning procedures for appointment can be made to the dean of the Graduate College.

6. Reappointment and termination of appointment

a. Each appointment of a member of the Graduate Faculty shall be reviewed by the department/unit during the fall semester preceding its expiration date. Reappointment shall follow the same procedures as for appointment, including submission of an updated curriculum vitae. The Graduate College may terminate graduate faculty status upon request from the approved departmental committee.
b. The termination of an appointment of an individual to the faculty of WMU shall automatically terminate the individual's appointment as a member of the Graduate Faculty.
c. In case of termination of the individual's appointment to the Graduate Faculty, the individual may complete duties assigned during the period of the individual's appointment as a member of the Graduate Faculty.

Thesis, Project, or Dissertation *Credit* Requirements and Policies

A student who intends to register for the courses Master's Thesis (7000), Specialist Project (7200), or Doctoral Dissertation (7300) for the first time is required to file a completed Permission to Elect form (available on the Graduate College website forms page) with the Graduate College before registering to ensure that the student is informed about the regulations pertaining to the preparation and submission of the manuscript and the requirements for research involving regulated subjects and hazardous materials.

Continuous Enrollment

Following a student's first enrollment in the courses Master's Thesis (7000), Specialist Project (7200), or Dissertation (7300), the student must have continuous enrollment in that same course until all thesis or project or dissertation requirements are completed satisfactorily and approved by all appropriate bodies. Registration deadlines apply. For students not enrolled in the Summer I and Summer II sessions, pre-enrollment in the subsequent Fall semester is necessary for access to library resources during Summer I and Summer II.

Continuous enrollment is defined as enrollment in all Fall and Spring semesters from the initial enrollment to the semester in which the student graduates (some programs may require students to be enrolled during Summer sessions as well as Fall and Spring semesters; student should refer to respective program handbooks). If the student will graduate in the Summer I or Summer II session, the student must be enrolled in that session. Students who desire to have remote access to WMU's library databases during the Summer I and Summer II sessions may do so by paying the customary computer fee for each session in which computer and remote library services are desired.

Research Subject Protection and Registration

Students conducting research that involves human or animal subjects, biohazards, genetic materials, or nuclear materials/radiation must have prior approval of the research proposal by the appropriate University board, thus assuring compliance with the regulations for the protection of such subjects or for the use of such materials. (For resources on the different kinds of regulated subjects and material, see http://www.wmich.edu/research/compliance.) There are no exceptions to this requirement. Registration for courses in which research is conducted that requires such prior approval should not be attempted until the appropriate University board grants approval. The department requiring the course is responsible for assuring that the student has complied with federal, state, and WMU requirements. The student completing such regulated research for a master's thesis, specialist project, or doctoral dissertation must include the written approval or exemption letter from the appropriate board/committee/official as an appendix to the thesis, project, or dissertation, and a student completing such regulated research for a course report, paper, or project must include the written approval or exemption letter from the appropriate board/committee/official as an addendum to the report, paper, or project. For more information, call the Office of the Vice President for Research, (269) 387-8298.

Transfer & Other Credit Policies

Transfer Credits

Transfer credit will be recorded on the Western Michigan University transcript as "Credit" (CR) only and will not be calculated into the honor points earned and the graduate grade point average at Western Michigan University. Grades and honor points do not transfer; only credit transfers. As a consequence, honor point deficiencies acquired in credits earned at Western Michigan University cannot be made up by credits earned at another university. (Exception: Grades for courses taken at other Michigan institutions under the Michigan Intercollegiate Graduate Studies [MIGS] program are applied to the student's grade point average at WMU and appear on the student transcript. See the Graduate College website forms page for more information about the MIGS program.

Graduate credit may be transferred from other schools provided:

1. The credits were earned at an institution accredited for graduate study and are of "B" grade (3.0) or better. Moreover, the student's overall grade point average for all graduate work taken at the other institution must also be "B" (3.0) or better.
2. The credit is earned within the time limit for the student's WMU degree program (six years for master's or specialist programs or seven years for doctoral programs), is represented on an official transcript of the other institution, and is identified as graduate credit.
3. The student's department verifies that the transfer credits contribute to the student's degree program and includes them in the student's Graduate Student Permanent Program of Study.
4. The graduate dean approves the inclusion of the transferred credits in the student's Graduate Student Permanent Program of Study.

Master's Program

A student enrolled for a second master's degree from Western Michigan University may transfer internally up to 12 semester hours from the first master's degree from Western Michigan University and must fulfill all requirements of the second master's degree. Any credits transferred internally into the second master's program must have been completed within six (6) years of the conferral of the second master's degree. The second degree program must fulfill all of the other usual requirements for a master's degree. A maximum of two semester hours of graduate credit for any workshop completed at another accredited institution may be applied to a master's degree at Western Michigan University. (Exceptions may be approved by the graduate dean only upon the recommendation of the program advisor or the chairperson of the department in which the student is enrolled for graduate study.) Credits may be transferred from one master's program at Western Michigan University to another as long as all requirements of the new program are met.

Second Master's Program

A student enrolled for a second master's degree from Western Michigan University may transfer internally up to 12 semester hours from the first master's degree from Western Michigan University and must fulfill all requirements of the second master's degree. Any credits transferred internally into the second master's program must have been completed within six (6) years of the conferral of the second master's degree. The second degree program must fulfill all of the other usual requirements for a master's degree.

Specialist Program

A student with a master's degree from another institution who completes a specialist degree at Western Michigan University may transfer up to thirty-six semester hours of approved graduate credit. A student without a master's degree who completes a specialist degree at Western Michigan University may transfer up to twelve semester hours of approved graduate credit. All credits transferred into a specialist program must have been earned within the six-year period prior to graduation.

Doctoral Program

A student enrolled in a doctoral program must complete a minimum of thirty semester hours, excluding the dissertation, at Western Michigan University after admission to a doctoral program. The thirty hours, excluding the dissertation, may not include any credit earned at another institution. Credit earned at another institution in addition

to the thirty hours (excluding the dissertation) earned at WMU after admission to a doctoral program, however, may be approved by the doctoral program advisor and included in the student's Graduate Student Permanent Program of Study. All credits transferred into a doctoral program must have been earned within the seven-year period prior to graduation. Credits may be transferred as long as all requirements of the new program are met.

Undergraduate Credit in a Graduate Program

In certain instances, an advisor may permit a student to include up to six semester hours of 3000- or 4000-level courses in a graduate program, provided the student receives written permission from the advisor, the department chair, and the graduate dean (form available on the Graduate College website forms page) prior to registering for these courses and then earns a grade of "B" or better. These courses earn undergraduate credit only which is not computed into the graduate grade point average.

The criteria for approval are:

1. Offering departments must certify those 3000- and 4000-level courses that may be included in graduate degree programs.
2. The courses certified must be taught by a member of the graduate faculty for acceptance in a graduate program.

The form used to request approval of a graduate student's election of a 3000- or 4000-level course may be obtained from the Graduate College website.

University Graduation Procedures

When a student satisfactorily completes all academic requirements for a degree, fulfills all financial and legal obligations to the University, and meets all relevant processing deadlines, the student is eligible for graduation and to receive the appropriate degree. An eligible student may graduate at the end of a semester or a session - in December, April, June, or August; however, a Commencement Ceremony is held only following Fall, Spring and Summer I terms.

Graduation Process

The graduation process requires students to

1. Apply for graduation by submitting an Application for Graduation Audit. A $55.00 fee will be applied to the student account. The application form may be obtained from the Registrar's Office website http://www.wmich.edu/registrar/graduation-graduate. Doctoral students should apply at least two semesters prior to intended graduation date.

   Graduation Fee and Application Deadline:

   Graduation Fee: $55

   Application Deadlines:
   Fall Semester Graduation (December) August 1
   Spring Semester Graduation (April) December 1
   Summer I Session Graduation (June) February 1
   Summer II Session Graduation* (August) February 1
   *No Commencement Exercises in August

2. Fulfill all degree and University requirements and obligations.
3. If required for the degree, successfully complete, defend, and have approved by the graduate dean the master's thesis, specialist project, or doctoral dissertation.
4. Meet all department, Graduate College, and University deadlines for the completion of all work required for the program or degree and the submission of all materials required for graduation.

All work taken either on or off the campus must be completed by graduation day.

Graduation Audit

The graduation audit, initiated by the submission of the Application for Graduation, is a process by which a student's academic record is examined to make sure all the requirements for the degree have been met. A graduation auditor in the Registrar's Office conducts the audit, and its outcome depends greatly on the completeness and appropriateness of the materials contained in the student's academic record. Students should ensure that the following requirements are met and the following documents are contained in their academic record before applying for graduation:

1. A Graduate Student Permanent Program of Study is completed, approved by the advisor and graduate dean, and filed in the Registrar's Office with the appropriate graduation auditor. The Graduate Student Permanent Program of Study should be filed as soon as practicable after the student begins enrollment following admission to the degree program.
   a. Master’s degree students will file their Permanent Program of Study prior to completion of 12 credit hours of study.
   b. Specialist degree students will file their Permanent Program of Study after completion of 12 credit hours

of study or by the end of their first academic year of enrollment.
c. Doctoral degree students will file their Permanent Program of Study after completion of 18 credit hours of study or by the end of the second semester of enrollment.

2. All transfer credit, if applicable, is approved, and the Graduate Transfer Credit form is appropriately signed by the advisor and the graduation auditor.
3. All completed course work (and other program requirements, where applicable) coincides with the Graduate Student Permanent Program of Study.
4. Where applicable, all relevant documents are filed attesting to the approval of committee appointments, passing of comprehensive examinations, completion of research tools, successful defense of thesis or specialist project or dissertation, fulfillment of any residency requirement, and compliance with the continuous enrollment requirement within the time limit allowed for the completion of degree requirements.

Students who do not meet all degree and University requirements will be removed from the graduation class automatically. Such students must change their graduation date. Under no circumstances will any student be graduated with a class if the student's academic record does not show complete fulfillment of all requirements within thirty days after the established commencement date.

Students who wish to change from one graduation class to another need to complete a change of graduation date form. The graduation auditor will not automatically move the student to another graduation class. No fee is charged for submitting a change of graduation date form.

Non-degree Graduate Certificate Program

Students completing the requirements for a Graduate Certificate Program, whether together with a degree or independent of a degree, may apply for a certificate of completion. The process, fee, and requirements for obtaining a graduate certificate are similar to that described above for obtaining a degree. The essential differences are that the student applying for a graduate certificate will have been officially admitted to the certificate program, will have completed the application form entitled Application to Receive Graduate Certificate, and will have completed satisfactorily the certificate program requirements recorded on the student's advisor-approved Graduate Certificate Program, Program Outline.

Funding Opportunities

Fellowships, Assistantships, Associateships, Grants, Awards

Western Michigan University offers many funding opportunities through fellowships, associateships, assistantships, grants and awards to provide financial assistance to students pursuing graduate study.

Graduate students receiving such assistance are first and foremost students. As such, their most important task is to complete their degree requirements in a timely fashion; this is the primary expectation of the University. These financial resources are provided by the University for at least three principal reasons. First, employment of graduate students in teaching, research, and non-teaching positions during their graduate education encourages and supports their participation in these major functions of University life and thereby strengthens the quality of the students' educational experience. Second, appointments provide direct financial support to outstanding students who are essential to the development of quality graduate programs. Third, graduate students provide valuable and necessary services to the University in their roles as appointees.

Application deadlines, funding amounts, and requirements vary. For more information, visit or call the Graduate College (269) 387-8212, or visit the Graduate College website at www.wmich.edu/grad/fellowships-grants .

The following financial assistance opportunities are available. Please review the Graduate College Website for additional details.

Departmental Doctoral Associateship
Doctoral Associateships are available to students that have reached candidacy status in a doctoral program. A full appointment requires 20 hours of service per week from the student in the department or in a related area. Types of appointment duties include teaching, research discovery, or research application (service). Enrollment of at least six hours per semester and three hours per session is required (even for partial appointments). The associateship will pay up to nine hours of full tuition per semester or three hours per session for a full appointee; tuition is pro-rated for a partial appointment. Application deadlines vary by department; inquiries should be made with the academic unit.

Departmental Graduate Assistantship
Graduate Assistantships are available in many departments of the University for both master's and doctoral students. A full appointment requires twenty hours of service per week from the student in the department or in a related area. Types of appointment duties include teaching, research discovery, or research application (service). Enrollment of at least six hours per semester and three hours per session is required (even for partial appointments). The assistantship also provides up to nine hours of full tuition per semester or three hours per session for both doctoral and master's students for a full appointee; tuition is pro-rated for partial appointments. Inquiries should be sent to the chairperson of the department.

Graduate College Dissertation Completion Fellowship
Non-renewable Graduate College Dissertation Completion Fellowships for up to two semesters and two sessions are awarded in open competition and on the basis of superior scholarly achievement to assist full time doctoral students with completion of their dissertations. To be eligible, an applicant must be a doctoral candidate who can demonstrate superior academic achievement and a record of timely and steady progress toward degree completion. Applicants must have completed all requirements for the degree, except the dissertation, and must have an accepted dissertation proposal as well as reached candidacy. In addition to a stipend at the doctoral associate level, the Fellowship pays the Fellow's tuition for 1-6 hours per semester and 1-3 hours per session of 7300 hours only, depending on the number of hours out of 7300 the Fellow has yet to complete. During the period of the fellowship, enrollment of at least six credits per semester or three credits per session is required, unless the student is on continuous enrollment status for the summer sessions. For non-residents of Michigan, the fellowship will pay the out-of-state portion of the tuition. Applications are available only online at www.wmich.edu/grad/fellowships-grants/diss-complete. Application deadline: Consult the application after the first of the new year. Deadline generally occurs in mid-March. Part of this award includes a one-time supplemental fee of $500 for costs associated with dissertation research.

Thurgood Marshall Fellowship
Thurgood Marshall Fellowships for the academic year plus the Summer I and Summer II sessions are available to U.S. citizens who are beginning their master's or doctoral degree programs and who have regular admission to the program. They are awarded to exceptional students who exemplify the life, career and ideals of Justice Thurgood Marshall. Full-time enrollment (a minimum of six hours per semester and three hours per summer session) is required for both masters and doctoral recipients. Recipients are also required to perform 10 hours of service per week in the department or academic unit. Recipients receive both a salary and tuition award. For further details, contact the Graduate College. Application deadline: February 15.

Martin Luther King/César Chavez/Rosa Parks Future Faculty Fellowship
The Martin Luther King/César Chavez/Rosa Parks Future Faculty Dissertation Fellowship is are available to U.S. citizens with regular admission to a doctoral program and who intend to pursue a full-time teaching or administrative career in post-secondary education within the United States. The KCP Dissertation Fellowship is a one-year dissertation completion award for doctoral students who have reached candidacy. The Fellowship does not require departmental service; however, students must meet other requirements as stipulated in the State of Michigan guidelines for KCP Fellowships. For further details, contact the Graduate College. Application deadline: February 15.

Western Michigan University (WMU) – Graduate Education and the Professoriate (GEP) Fellowship
WMU-GEP Fellowships are available to U.S. citizens who derive from African-American, Hispanic, or Native American (with tribal affiliation) heritage and who have secured regular admission to a doctoral degree program in a STEM (science, technology, engineering, or mathematics) or SBE (sociology, political science, psychology, or economics) area. The GEP Fellowship is competitive and awarded to exceptional students. Full-time enrollment (a minimum of six hours per semester and three hours per summer session) is required. Recipients are also required to perform 10 hours of service per week in the department or academic unit. Recipients receive both a salary and tuition award. For further details, contact the Graduate College. Application deadline: March 1.

Graduate Student Research Grant
The Graduate Student Research Grant was established to support graduate students engaged in independent scholarly research, scientific inquiry, inventive technology, and original artistic activity. The grants are intended to help students defray extraordinary or unusual costs incurred in research projects. The typing of theses and dissertations and project papers, as well as the purchase of supplies and equipment commonly provided by departments or by other existing grants or funds, do not qualify under this grant.

To be eligible for a Graduate Student Research Grant, an applicant must be regularly admitted to a graduate degree program, in good academic standing, enrolled for at least six hours in the semester or for at least three hours in the session that the research takes place (students on "continuous enrollment" status can meet this requirement with one hour of enrollment), and the sole or principal investigator.

Grant amounts vary and may range up to $1,000.00 based on number of applicants. Applications are available only online at www.wmich.edu/grad/fellowships-grants/gsrg. There are three funding cycles for this grant in September, January, and April. Check the URL above for specific deadlines.

Graduate Student Travel Grant

The Graduate Student Travel Grant was established to support graduate students engaged in independent scholarly research, scientific inquiry, inventive technology, and original artistic activity. The grants support graduate student travel to conferences or events sponsored by professional organizations for the purpose of presenting the results of research, exhibiting or performing creative works, or otherwise disseminating results of their scholarly activity. These grants do not cover conference attendance for other purposes (e.g., as a non-presenting attendee or workshop participant), to present the findings of another's scholarly work, or for credit-generating activities such as study abroad programs.

To be eligible for a Graduate Student Travel Grant, an applicant must be regularly admitted to a graduate degree program, in good academic standing, enrolled for at least six hours in the semester or for at least three hours in the session that the travel takes place (students on "continuous enrollment" status can meet this requirement with one hour of enrollment), and the sole or principal investigator and the invited presenter.

Grant amounts vary and can range up to $700.00 based on number of applicants and availability of funds.

Applications are available only online at www.wmich.edu/grad/fellowships-grants/gstg. There are three funding cycles for this grant in September, January, and April. Check the Graduate College Web site at the URL above for specific deadlines.

University Dames Endowed Scholarship Grant
University Dames Endowed Scholarship grants are available for candidates who are admitted to a graduate degree program, who have successfully completed at least 15 credit hours of graduate work, and who are in good academic standing and can demonstrate financial need. Preference is given to female candidates, but men also are encouraged to apply.

The scholarship is awarded on an annual basis each spring. The application is available only online at www.wmich.edu/grad/fellowships-grants/dames. Application deadline is usually mid-May and posted each year at the URL above.

George and Beatrice Fisher Gerontology Dissertation Prize
This annual award recognizes the doctoral dissertation that best advances the study and understanding of the process of aging and elderly populations, as these individuals encounter various life experiences associated with aging. The prize may be awarded in any discipline or field as it would relate to gerontology. This area of interest is broad and expansive and could include research not directly conducted on elderly populations, per se, but could have application for the treatment of diseases associated with the process of aging: for example disease progression in animals or the development of potential pharmacological treatments that could enhance quality of life/longevity in elderly populations. Oral history projects centered on the experiences of elderly adults are also welcome. Both qualitative and quantitative research methodologies are welcome.

Application is available only online at www.wmich.edu/grad/fellowships-grants/fisher. Application deadline is usually mid-May and posted on the Graduate College Web site at the URL above. Awards are announced in June.

Gwen Frostic Doctoral Fellowships
These generous and highly competitive fellowships will be awarded semi-annually by the Graduate College to doctoral students engaged in dissertation research from any field. Students must have an approved dissertation proposal. The fellowships, in an amount to be determined by the Graduate College, will defray educational expenses, including tuition and fees, materials, and travel. Funds must be spent in the year (365 days) following the award. The award terminates when the doctoral degree has been conferred upon a Fellow.

Upon announcement of the application deadline by the Graduate College, students may be nominated by their dissertation advisor, with a letter of transmission from the department chair or program head. Access the application at www.wmich.edu/grad/fellowships-grants/frostic.

Patricia Lee Thompson Dissertation Award
The Patricia Lee Thompson Dissertation Award is an annual award that assists students with completion of the dissertation. Nominees must have completed all requirements for the degree except the dissertation and be in good academic standing. The application and complete information including the deadline to apply can be accessed only online at www.wmich.edu/grad/fellowships-grants/thompson. The nomination deadline is generally mid-March.

Department Level and All-University Graduate Research and Creative Scholar Awards and Graduate Teaching Effectiveness Awards

The Graduate Studies Council and the Graduate College have established four annual award programs to recognize graduate student contributions at Western Michigan University: Department Level Graduate Research and Creative Scholar Awards and Graduate Teaching Effectiveness Awards, and the All-University Graduate Research and Creative Scholar Awards and Graduate Teaching Effectiveness Awards. The Graduate Research and Creative Scholar Awards were established in 1986 to acknowledge graduate students' contributions to the scholarly and artistic productivity of Western Michigan University. The Graduate Teaching Effectiveness Awards were established in 1998 to recognize effective teaching done at WMU by graduate students as assistants to faculty, as independent instructors, or in other capacities that directly promote and facilitate student learning.

Nominations for all programs are sought on an annual basis by the Graduate College. Departments are contacted at the end of the fall semester and again early in the spring semester regarding nomination procedures and deadlines. Each department or unit with a graduate program may nominate one student per program code for each of the four award programs.

Policies Governing Graduate Appointees

Definitions and Classifications

1. A graduate appointee is a student enrolled in a program leading to a graduate degree or to a graduate certificate who receives a University-administered salary and a payment for part or all of the appointee's tuition. Amounts may vary by program, but minimum established rates are posted on the Graduate College website.
2. To be eligible for a graduate appointment a student must be regularly admitted, in good academic standing, and enrolled in a program leading to a graduate degree or a graduate certificate. In most cases graduate appointees are required to be enrolled as full-time students, even if on a partial appointment. A student admitted to a graduate degree program or concurrently to a graduate degree program and a graduate certificate program is eligible for an appointment in any unit in the University. A student admitted only to a graduate certificate program is eligible for an appointment only within the academic unit offering the graduate certificate.
3. Although graduate appointments differ in many important ways, each can be classified as either an assistantship/associateship or a fellowship. Assistants/Associates provide service to the University which is part of the learning experience in their disciplines. As apprentices they perform part of the functions of their academic units. In contrast, Fellows either have no formal service obligation to the University, or have a reduced service obligation, although they are expected to participate in the normal activities of their academic units which is considered training for participants within the program.
4. More than one fractional appointment may be held simultaneously. However, in no case shall one person hold more than the equivalent of one full appointment.
5. A master's level student may receive funding for up to two years. At the academic dean's discretion, a third year of funding may be provided.
6. A doctoral level student may receive funding for up to five years.

Types of Appointments

Assistantship

a. Assistantships are awarded to students in any graduate-level program with the expectation of appropriate professional service. Graduate assistants are apprentices in the profession, and while the service aspect is emphasized in the definition in order to make a distinction, Graduate Assistants, first and foremost, are students and valued members of the community of scholars. They are selected for their scholarship and manifest interest in the discipline as well as for their ability to perform the needed service.
b. The service of a Graduate Teaching Assistant (TA) consists of activities directly related to teaching, while the service of a Graduate Research Discovery Assistant (RD) consists of research activity under the supervision of a faculty member or administrator, and the service of a Graduate Research Application

Assistant (RA) includes all other professional work in the unit accepted as appropriate and germane to the student's educational goal.

c. Teaching assistants as defined in the Teaching Assistants Union (TAU) Agreement are subject to the terms and conditions of the current Agreement between Western Michigan University and TAU www.tauaft.org. Under terms of the Agreement, at the beginning of each academic term TAU will be provided with a list of all graduate teaching assistants and these will be considered employees represented by the bargaining unit. The bargaining unit will communicate with these employees about rights and responsibilities accorded by the Agreement, including the payment of union dues.

Associateship

Associateships can be offered to doctoral students that have reached candidacy.

Fellowship

Fellowships are awarded to students who have distinguished themselves by outstanding academic achievement or special abilities. Fellowships are provided by the University or by another donor with the approval of the University. Fellowships do not typically have a service requirement, but this may vary for some fellowship programs.

Service Requirement

The kinds of service required of Graduate Assistants/Associates may vary among departments, each of which determines its own range of appropriate responsibilities subject to administrative review. Whatever kind of service is expected, however, a full associateship/assistantship in any department consists of twenty hours of service per week or its equivalent. Equivalency is calculated on the basis of the value assigned by a department to the performance of each particular service.

No service is required of students holding Fellowships, but this may vary for some fellowship programs.

Stipends and Salaries

1. The amount of a fellowship grant (stipend) is set by the donor with the concurrence of the Provost and Vice President for Academic Affairs.
2. The minimum salary for full-time Assistants and Associates in each type of appointment is established by the Provost and Vice President for Academic Affairs.
3. Fractional awards are made for fractional appointments.
4. Assistantship, associateship, and fellowship awards have tax implications. Assistantship and associateship salaries are administered through the University payroll system while fellowship stipends may be paid to student accounts as a scholarship. Detailed records of educational expenses and check stubs from any payment received from the University should be kept for tax purposes.
5. Unless otherwise notified by the hiring department, appointees are responsible for paying their own fees (e.g. enrollment fee, Student Assessment Fee, international student fee, etc.).

Affirmative Action

The University's Affirmative Action/Equal Opportunity Policy shall apply to graduate appointments.

Professional Ethics

Graduate assistants and associates shall adhere to the same standards of professional ethics as those of the regular faculty. (See "Statement on Professional Ethics" in current *Agreement* between WMU and the AAUP.)

Notification of Status

1. At the time of their appointment, graduate appointees shall be informed in writing of the specific conditions of the appointment. They shall be informed that the offer of an appointment is contingent upon acceptance into a graduate degree program at the University, and continuance of the appointment depends in part on satisfactory progress in that program and satisfactory performance of assigned duties. The letter shall also state the amount of both the salary and tuition award, the probable assigned activities, the length of the appointment, conditions of service, and, if appropriate, the criteria for renewal. Any other conditions specific to an individual appointment shall be contained in the letter of appointment.
2. Each appointee shall be provided with information prepared by the Graduate College concerning current University-wide procedures, practices, privileges, and responsibilities that relate to graduate appointees. Each department is responsible for providing any supplemental information on these matters that is necessary and special.

Professional Development

1. Assigned activities of graduate appointees shall be relevant professional experiences.
2. Graduate appointees can expect professional guidance and timely evaluation in the performance of their duties.

Enrollment Status

1. A full graduate appointment (i.e., 20 hours of service per week) requires a minimum enrollment of six credits per semester or three credits per session unless an under-enrollment has been approved by the Graduate College. Individual departments may require an enrollment of more than the minimum number of credit hours. Some circumstances may allow for decreased enrollment; however, departments will advise appointees. Assistants/associates on partial appointment are still expected to meet the full-time enrollment requirement.
2. It should be noted that students assessed the full enrollment fee are allowed access to Sindecuse Health Center services, paying student rates. Also included is access to the University Recreation Center facilities. Students assessed a lesser enrollment fee continue to receive access to the recreation center facilities but health center service costs will be charged at a higher rate. Students registered without being assessed the enrollment fee may pay an additional fee to enable them access to both the recreation center and the health center services.

Evidence of Status

1. For formal identification as a graduate appointee, students are placed on an electronic list shared with various campus offices that provide services to appointees.
2. Validation may be authorized during the summer sessions for graduate appointees on academic year appointments even if the appointee is no longer receiving a stipend.

Appointee Benefits

1. Tuition Awards: Graduate appointees may, at the discretion of the University, be granted partial or full tuition awards. Any such tuition award will be identified in the appointment letter. Tuition awards are awarded only during the semester(s) or session(s) a graduate appointment is held. Students who are granted such partial or full tuition awards and subsequently withdraw from a class or from classes after the refund period will be required to repay a portion or all of the tuition award that was granted as a benefit of the appointment.
2. Library: Graduate appointees will be accorded the same privileges and responsibilities as faculty members in the use of the library facilities. These are specified in the faculty handbook (Western Michigan University Policy Handbook). Appointees will also have access to library carrels on a space available basis after faculty requests have been filled.

3. Parking: Graduate appointees are exempt from paying the motor vehicle registration fee, but are required to register their motor vehicles. Application may be made to the Public Safety Annex for parking privileges in designated lots; the appointee will be required to present the ID and the letter of appointment.
4. Campus Bookstore: Graduate appointees will be accorded discount privileges on purchases at the Western Michigan University Bookstore in the same manner and degree as faculty and staff members. Discount will be given for current semester or session only; the appointee will be required to present the student identification card.
5. University facilities: Graduate appointees will be accorded the use of University facilities (e.g., student offices, research facilities, etc.) authorized by the director of the facilities on the same basis that they are authorized for part-time faculty.

Tuition

For the current tuition and fee rates, go to www.wmich.edu/registrar/tuition/. These rates are subject to change without notice by action of the Board of Trustees.

Residency Policy of Western Michigan University

The governing board at each university in Michigan has the authority to establish a residency policy for admissions and/or tuition and fee purposes. Therefore, residency policies will vary between institutions and are independent of those used by the State to determine residency for purposes such as income and property tax liability, driving and voting.

Any Western Michigan University undergraduate student who has been admitted as a degree seeking student and began enrollment as of the Spring 2017 semester or earlier, may apply for in-state resident status for any semester/session in which they are enrolled in on-campus courses by completing a residency application in accordance with University procedure. Graduate students may apply for in-state resident status for any semester/session in which they are enrolled in on-campus courses by completing a residency application in accordance with university procedure.

Any Western Michigan University undergraduate student who has been admitted as a degree seeking student and began enrollment effective with the Summer 1 2017 semester or later, will have their residency status determined at the time of admission and it will remain the same throughout the student's enrollment at Western Michigan University.

Since a student normally comes to Western Michigan University for the primary purpose of attending the University rather than to establish a domicile in Michigan, one who enrolls in the University as a non-resident shall continue to be deemed a non-resident, unless and until the student demonstrates that his/her previous domicile has been abandoned and a Michigan domicile established.

Domicile is defined as the place where an individual's true, fixed and permanent home and principle establishment is and to which the individual returns whenever absent from the University. Twelve consecutive months of physical presence immediately preceding the first day of classes is a strong indicator of domicile.

A. Residence of Student

A student may be considered domiciled in Michigan if the student is in continuous physical presence in this state for one year (12 consecutive months) immediately preceding the first day of classes of the term for which resident status is sought and intends to make Michigan his/her permanent home and has no domicile elsewhere. The year of continuous presence is never the only criterion used for determining in-state residency status and, by itself, will not qualify a student for residency status for tuition paying purposes at Western.

B. Residence of Parents

The domicile of a dependent student is presumed to be the same as that of the student's parents. Regardless of whether the parent is the student's custodial parent, a dependent student with one or both parents domiciled in Michigan, according to Western's Residency Policy, is presumed to be eligible for resident status as long as the student has not taken steps to establish a domicile outside of Michigan or any other action inconsistent with maintaining a domicile in Michigan.

The domicile of a dependent student's legal guardian(s) has the same evidentiary effect as that of a dependent student's parent(s), and references to parents in this policy shall include legal guardians, only when the student is the dependent of the legal guardian, and such guardianship has been established due to complete incapacity or death of the student's natural parent(s). A parent's inability to provide funds necessary to support a college education does not qualify as complete incapacity.

A dependent student who is living in Michigan and who is, according to Western's Residency Policy, permanently domiciled in Michigan would maintain resident status if the parents leave Michigan provided: (1) the student has completed at least the junior year of high school prior to the parent's departure; (2) the student remains in Michigan, enrolled as a full-time student in high school or an institution of higher education and (3) the student has not taken steps to establish a domicile outside of Michigan or any other action inconsistent with maintaining a domicile in Michigan.

C. Residence of Spouse

The residence of a student who otherwise would be classified as a non-resident will follow that of his/her spouse if the spouse qualifies as a resident for tuition-paying purposes.

D. Michigan High School Enrollment and Graduation

A Michigan high school graduate who completes his/her senior year at a Michigan high school, remains physically present in Michigan immediately following high school graduation to the first day of classes of the term in which the student is enrolled in on-campus courses, and provides the required State of Michigan tax documents of parent(s) or guardian(s) (for dependent student) or student (if independent) qualifies as a resident student for tuition and fee purposes at Western.

E. In-state Tuition for Military and Dependents

Western Michigan University will grant in-state tuition to all individuals who are eligible for VA educational benefits.

Western Michigan University will also grant in-state tuition to all individuals who are not eligible for VA educational benefits but have honorably served or are serving in the Reserve or Active Components of the U.S. Armed Forces.

Western Michigan University will additionally grant in-state tuition to dependents of those individuals who have honorable served or are serving in the Reserve or Active Components of the U.S. Armed Forces, but would otherwise not be eligible for VA educational benefits. For this purpose, a child is a dependent as defined by IRS income tax regulations. This term also includes a spouse, widow or widower of a service member or veteran who has honorably served.

F. Individuals Holding Visas

International students attending on a student visa of F1, J1, or M1 and H (work) visas are in Michigan on a temporary basis. By definition, these students are not able to establish a permanent domicile in Michigan and should not apply for Michigan resident tuition unless they qualify for residency under another provision of this policy such as residence of spouse.

Persons entitled to reside permanently in the United States may be eligible to obtain resident status. These individuals must still prove that they have established a Michigan domicile as defined in this policy. Currently, individuals will qualify under this classification only if they hold and can provide one of the following: 1) a fully processed Permanent Resident Alien Card or passport stamp verifying final approval by the filing deadline established for the applicable term 2) an I-94 card with "Refugee" designation; or 3) an A, E (primary), G or I visa.

G. Migrant Worker (Seasonal/Agricultural Employment)

If an independent student, or the parent of a dependent student, has been employed as a migrant worker in Michigan for a minimum of two (2) months each year for three (3) of the five (5) years prior to the date of the proposed in-state classification or for a minimum of three (3) months each year for two (2) of the five (5) years prior to the date of the proposed in-state classification, the student shall be classified as resident. Proof and verification of employment is required. A migrant worker in Michigan is defined as one who travels to Michigan to pursue agricultural or related industry employment.

H. In-State Tuition Rates Required by Law

Western Michigan University will comply with all state and federal laws that require a student to be classified as a Michigan resident for the purpose of tuition and fees.

I. Misrepresentation and Falsification of Information

Students who provide false or misleading information or who intentionally omit relevant information on their admissions application or the residency application or any other document relevant to residency eligibility may be subject to disciplinary and/or legal measures. Decisions made based upon misrepresented or falsified information may be revoked.

J. Appeal Process

Any student may appeal the decision on their residency application by following the prescribed appeal process. Failure to comply with the procedure shall constitute a waiver of all claims to reclassification or rebates for the applicable semester/session. The student will receive a written response on the appeal request. The decision on the residency appeal shall be the final recourse within the University.

K. Required Documentation

A student must provide the following documentation when applying for residency.

- A copy of their valid Michigan driver's license **and** a copy of the Michigan driver's license of the person(s) upon whom the applicant is basing the claim to resident eligibility.
- Verification of U.S. citizenship or of visa status if the applicant was born outside of the United States. This verification may be based upon information already provided by the student to the University through the admission process.
- Any other documentation requested by the University that is deemed necessary to support the applicant's claim to residency eligibility.

When applicable, applicants claiming in-state residency will be asked to provide documentation verifying the 12-month consecutive domicile requirement of Western's policy. Types of documentation that may be requested include proof of employment, proof of Michigan personal income taxes being withheld, copies of recent Michigan and federal tax returns and W2 or 1099 forms, and enrollment verification at a Michigan school, if applicable. Additional documentation may also be requested. The application procedure for residency specifies additional detail on the nature of documentation that is required. In addition, the documentation provided must apply to the person(s) upon whom the applicant is basing the claim to resident eligibility.

L. Initial Residency Classification

A student enrolling at Western for the first time shall be classified as a resident or non-resident for tuition paying purposes. The student is responsible for reading the Residency Policy and to register under the proper residency classification. Admissions reviews the residency classification at the time of application. If an application does not denote residency status, a status of non-resident will be assigned. If an applicant indicates Michigan residency on the admissions application and Admissions questions this status then the applicant will be classified as a non-resident. Additionally, if an applicant previously attended Western as a non-resident and reapplies for admission, he/she will be classified as a non-resident at the time of readmission. Questions raised regarding a student's Michigan residency do not necessarily mean that the student will be ineligible for in-state residency. It simply means that the student's circumstances must be documented by completing an application for a change in residency status.

M. Establishing a Michigan Domicile

The circumstances and activities described in sections A through H above may demonstrate Michigan domicile, though not conclusive or exhaustive, they may lend support to a claim of eligibility for resident status.

The following circumstances, standing alone, shall not constitute sufficient evidence of domicile to effect classification of a student as a resident under these regulations; however, they do provide some supporting evidence.

- A Michigan's driver license
- Enrollment in a Michigan educational institution
- Michigan employment
- Payment of Michigan income or property taxes
- Ownership of property in Michigan
- 12-month lease in Michigan
- Presence of relative(s) in Michigan (other than parent(s) for dependent student)

N. Administration of the Policy

The Office of the Vice President for Business and Finance will administer this policy and is authorized to establish procedures to effectuate and interpret the Residency Policy. The Vice President and Associate Vice President for Business and Finance may grant residency status based upon the use of professional judgment in applying this policy.

Residency Application Submission Dates

You **must be registered for on-campus classes** for the semester/session that you are applying for a change in residency status. Your application **must include your WESTERN IDENTIFICATION NUMBER (WIN).** Applications for residency reclassification for tuition-paying purposes must be received in the Accounts Receivable Office, Western Michigan University, 1903 W. Michigan Avenue, Kalamazoo, MI 49008-5210 according to the schedule below.

Application for:	Earliest Date to Turn in Application:	Deadline Date to Turn in Application:
Spring Semester	December 1	First Day of Classes
Summer I Session	April 1	First Day of Classes
Summer II Session	June 1	First Day of Classes
Fall Semester	August 1	First Day of Classes

Applications are generally processed within a three week time period. Incomplete information and/or lack of required documents could result in immediate denial and/or delay the processing of your application. All official actions concerning the review of your residency application for tuition-paying purposes will be sent to you at your WMU email address.

The application form and additional information are online at wmich.edu/accounts-receivable/students. Click on "For Students" and then select "Residency Policy" under students. Frequently Asked Questions (FAQs) on the residency policy are at the same web site. To access, click on "Frequently Asked Questions" and then select "Residency" on the bottom of the list.

(Policy as approved 4/22/2015)

Auditing Courses, Tuition for

Students who audit courses (who register for classes but do not desire credit) are governed by the same regulations and tuition and fees as students desiring credit.

Drop, Withdraw and Tuition Refund Policy

Students who reduce their number of credit hours or withdraw from Western Michigan University may be eligible for a refund. The date for refund purposes will be determined based on the date when a course was dropped or withdrawn in GoWMU or the date the Registrar's Offices received a request.

Students dropping a class before census are eligible to receive a 100% refund. There is a 24-hour grace period provided to students who drop a class that meets for the first time on, or after, census. Students who withdraw from all their classes after census may qualify for a 90%, 50% or 25% refund. The percentage is based on dates published in the Academic Calendar.

During fall and spring semesters, student who withdraw from some, but not all, of their classes may qualify for a 50% refund based on the dates published in the Academic Calendar. No refunds are available for partial withdraws after census during summer sessions.

Students who drop or withdraw from any or all classes and are eligible for a refund will receive the refund within 30 days of the drop or withdraw date. Withdrawing from classes may affect current and future financial aid, veteran benefits and academic standing. Please consult your academic advisor, Financial Aid counselor or your VA certifying official before reducing credit hours or withdrawing.

Complete Withdrawal from All Courses, Effect on Tuition

The Registrar's website should be consulted for the refund policy that pertains to complete withdrawal.

Students completely withdrawing from all classes **must** enter this information into GoWMU or by going to the Registrar's office during the official drop/add days in order to process their withdrawal and assure a refund. The withdrawal date for refund purposes will normally be determined by the date that the Registrar receives a Request to Late Drop form or an Appeal for a Late Withdrawal form.

Students who find it impossible to be on campus to process a complete withdrawal and do not have access to GoWMU may write to the Registrar's office, Room 3210 Seibert Administration Building, for aid in processing their withdrawal. All written requests for complete withdrawal must bear the appropriate postmark date for consideration of any refund.

Student Fees Other Than Tuition

Admission Application Fee

A non-refundable fee of $50 must accompany each application for admission.

Class Fees

Some courses have class-specific fees for which the student will be responsible. The University makes every effort to publish such class-specific fees in the online class schedule.

Collection Fees

In addition to the tuition and fees, in the event the account is referred to a collection agency, the student will be responsible for any collection fees, which may be based on a percentage at a maximum of 39% of the debt, and all costs and expenses, including reasonable attorney fees, that WMU incurs in such collection efforts.

Enrollment Fee

For all students registered in on-campus courses, the enrollment fee incorporates all required fees with the exception of the student organizations' assessment fee into a single per capita assessment. The enrollment fee for students registered in on-campus classes can be found on www.wmich.edu/registrar/tuition/.

Extended University Programs Fees (effective fall 2013)

Regional Location Courses
A $20 per course technology fee will be assessed for courses taken at regional sites.

Online Education Courses
A $60 per credit hour support fee will be charged for all undergraduate students. Graduate students will be charged a $20 per course technology fee.

Students enrolled in a combination of courses on the main campus and online, who fall in the flat rate credit hour range, may see an adjustment on their account to reflect the flat rate (less the online support fee of $60/credit hour). The $20 per course EUP technology fee will not be charged for the undergraduate online courses.

Records Initiation Fee (entering students only)
A one time fee of $300 is assessed for each entering (undergraduate, graduate, or transfer) student who is degree seeking. This fee helps subsidize the establishment of each student's official academic record at the University, and supports related activities such as integrated web course registration, online grade and program reviews, automated degree audit, student accounts receivables, and the provision of an individual electronic portfolio that reflects the learning, educational growth, and personal accomplishments for each student.

Class Related Fees
A student may be charged a laboratory or other supplemental fees per class.

Graduation Fee and Application Deadline

Summer II Session Graduation (August)
$55.00 Application Deadline: February 1

Fall Semester Graduation (December)
$55.00 Application Deadline: August 1

Spring Semester Graduation (April)
$55.00 Application Deadline: December 1

Summer I Session Graduation (June)
$55.00 Application Deadline: February 1

International Student Fee

International students will be charged a $25.00 fee each semester or $12.50 fee each session.

Late Add Fee

Students who are not registered for at least one class the day after census will be charged a late add fee of $100 per course. For the specific dates that this fee begins, look on www.wmich.edu/registrar.

Liability Insurance Fee

Students enrolled in courses requiring participation off-campus for field experience or practicum will be charged a liability insurance fee. This fee will be assessed each semester/session. Students registered in classes that require more than one type of liability insurance will be charged for each type one time.

Records Initiation Fee

A one time fee of $300 is assessed for each entering undergraduate, graduate, or transfer student who is degree seeking. This fee is not charged to concurrently enrolled high school students, guest students (including MIGS students), or SCOPE students. This fee helps subsidize the establishment of each student's official academic record at the University, and supports related activities such as integrated web course registration, online grade and program reviews, automated degree audit, student accounts receivable, and the provision of an individual electronic portfolio that reflects the learning, educational growth, and personal accomplishments for each student.

Residence Hall and Dining Fees

For current rates go to http://wmich.edu/housing/.

The rates quoted are on the basis of two or more students per room and include a $25.00 per semester deferred maintenance fee. These fees and rates are subject to change without notice by action of the Board of Trustees. The Board of Trustees reviews annually the room and dining rates and may increase the rates if, in its opinion, such an increase is necessary.

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

Student Assessment Fee

A student assessment fee (SAF) of $42.00 per semester (Fall and Spring) and $21.00 per session (Summer I and Summer II) will be collected from all undergraduate and graduate students at the time of registration. This assessment is for the support of student organizations and agencies. The student organizations and agencies use this money to enhance the out of classroom experience on campus. The following is a sample of the programs funded in previous years: Bronco Bash, Homecoming, College Bowl, Miller Movies, Bernie's Afterhours, Bernhard Center's Center Stage, lectures, etc.

Sustainability Fee

In March 2010 the Western Student Association (WSA) voted in favor of introducing a sustainability fund fee of $8.00 per semester and $4.00 per summer session. The funds are to be used to enrich course offerings, create student green jobs, support a Sustainability Office, support student-driven initiatives, and provide research grants, fellowships, scholarships and awards for students. A student-majority committee will work in consultation with the President's University-wide Sustainability Office and the Vice President of Student Affairs to determine the appropriate allocation process.

Transcript

A student's transcript from Western Michigan University is a document listing, at minimum, all courses taken and credit hours from WMU and grades earned in the courses.

Complete information on how to obtain a Western Michigan University transcript and transcript fees can be found at http://www.wmich.edu/registrar.

Tuition and Fee Payment for Graduate Appointees

Graduate appointees (i.e., those holding assistantships, associateships, or fellowships) are entitled to a charge privilege for tuition and related fees. However, installment payments must be made. An account is considered to be delinquent thirty days after the beginning of a semester and thirty days after the beginning of a session. At that time a one and one-half percent monthly service charge will be added to the unpaid balance. Delinquent accounts are subject to all University collection procedures, including referral to an external collecting agency. All tuition and fees must be paid prior to registration for the next semester/session.

Student Financial Aid

Financial assistance is available for those who qualify. At Western Michigan University, we encourage every student to apply for Federal Financial Aid FIRST. Federal financial aid is the best, most cost-efficient way to pay for college. Financial aid comes in several forms. Your aid package may include a federal student loan, which offers the lowest interest rates and allows you to defer repayment. Other types of financial aid may come from private sources.

The information in this section is based on the 2016-17 award year criteria. Should federal, state, or university regulations and procedures change, Student Financial Aid will administer programs according to updated regulations.

We are dedicated to meeting the needs of our diverse and talented campus community by providing excellent customer service in an accurate and timely manner through the use of advanced technology and a knowledgeable staff. To view the most current information about opportunities and application procedures, visit the Student Financial Aid website: www.wmich.edu/finaid. If you have questions, you may visit Bronco Express in the lower level of the Bernhard Center, email finaid-info@wmich.edu or call (269) 387-6000.

Types of Financial Aid

Graduate Scholarships

There are a variety of scholarships and programs available. For complete and up-to-date information, visit our website: http://wmich.edu/finaid/scholarships-grants/graduate.

Teacher Education Assistance for College and Higher Education (TEACH)

TEACH provides federally funded grants of $3,724 per academic year ($8,000 total for graduate study) to full-time students who are enrolled in TEACH-eligible programs. In exchange for receiving a TEACH grant, students must agree to serve as a full-time teacher in a high-need field in a public or private elementary or secondary school that serves low-income students. As a recipient of a TEACH grant, students must teach for at least four academic years within eight calendar years of completing the program of study for which you received a TEACH grant. If students fail to complete the service obligation, all funds received from the TEACH grants will be converted to a federal direct unsubsidized loan. Students must then repay this loan to the U.S. Department of Education. Students will be charged interest from the date the grants were disbursed.

Loans

These financial aid programs are designed to assist students, allowing them to borrow at a lower interest rate with opportunities to defer principal payments and possibly interest payments until after enrollment ends. Federal rates are subject to change and were current as of the time of publication.

Federal Perkins Loan – allows graduate students with unmet need to borrow funds on an annual basis with an interest rate of 5 percent. The annual amount per academic year is $8,000 for graduate students. Interest and principal payments are deferred as long as a student is enrolled at least half-time. Repayment of the loan plus interest begins nine months after the student ceases to be enrolled at least half-time.

Federal Direct Unsubsidized (FDU) Loan – allows graduate students to borrow funds on an annual basis with a fixed interest rate of 5.31 percent. The annual amount is dependent upon cost of attendance, grade level, and other resources received. Interest accrues while the student is enrolled in school and the student has the option of paying the interest payments or letting the interest payments be added to the principle loan amount. Loan principal payments are deferred as long as a student is enrolled at least half-time. Borrowers pay an origination fee of 1.069 percent that is deducted from each disbursement. Repayment of the loan plus interest begins six months after the student ceases to be enrolled at least half-time.

Federal Direct Graduate PLUS – allows graduate students to borrow funds on an annual basis with a fixed interest rate of 6.31 percent. Repayment of interest and the principle begins 60 days after the loan is fully disbursed. Repayment will be deferred automatically if the student is enrolled a minimum of half-time. Borrowers pay an origination fee of 4.276 percent that is deducted from each disbursement. The Graduate PLUS application must be completed by the student. Borrowers must pass a credit check.

Alternative Loans – available through a variety of private loan programs. These loans supplement financial aid. Each program will vary. For more information about how to choose a private loan lender, see our website, www.wmich.edu/finaid/loans/.

Procedures and Policies

Applying for Financial Aid

To receive any federal aid, most state aid, and WMU need-based grants, you will need to complete the Free Application of Federal Student Aid (FAFSA) which can be found online at fafsa.ed.gov. Remember, you MUST reapply each year to receive aid. Some aid programs have limited funding, so be sure to apply early. You can apply for the upcoming year beginning October 1. The FAFSA-filing deadline to qualify for Michigan state aid is March 1. When completing FAFSA, please enter school code 002330 when prompted to make sure we receive your information. Some scholarships require FAFSA to be complete by February 15. Other types of aid are awarded until funds are exhausted, so apply as early as possible. Returning students should file a renewal FAFSA each year as well.

The FAFSA gathers information regarding a students' income, assets, and other related information to determine the expected family contribution (EFC). The EFC is used to determine the amount of need-based eligibility for the

student based on the cost of attendance (COA). The COA is based on an estimate of tuition, fees, books, supplies, housing, food, transportation and personal expenses. The amount of need-based aid may also be affected by other financial aid resources. The cost of attendance and a personal budget worksheet can be found on our website at http://www.wmich.edu/finaid/costs.

Along with the FAFSA, other documents and processes may be required before an award notice or payment is processed. Notification of these additional requirements will be emailed to students through their WMU email address. Students may also check on the status of their financial aid online any time through GoWMU.

Awarding Process

Student Financial Aid automatically considers applicants for all types of federal, state, and institutional grants, work-study, and loans. Any scholarships, stipends, or other resources will be assessed first before awarding need-based financial aid. Additional eligibility factors will be considered in determining the type and amount of aid programs in the award package.

In general, the eligibility factors that are reviewed are citizenship, residency, class and grade level, enrollment hours, semesters of enrollment, degree status, default status, and satisfactory academic standing.

Most financial aid programs require a minimum enrollment equivalent to half-time status to be eligible for payment. Awards are initially based on full-time enrollment; however, payments to the student's account will be based on actual enrollment.

Any additional resources, changes to funding or regulations may affect student's financial aid awards. If the information received affects student's financial aid awards, a revised award letter will be emailed through the student's WMU email address.

Payment Process

Disbursement of financial aid payments to a student's WMU account begin as early as 10 days before the beginning of the semester, if all requirements have been met. Payments are disbursed based upon program eligibility requirements and enrollment. Payments will be applied to tuition, fees, housing, food and other authorized charges. Any excess funds remaining will be refunded to students (or parents if requested for the Parent PLUS loan) via direct deposit or a mailed check. For complete details on the refund policy and procedures, please visit http://wmich.edu/finaid/costs/payments.

Maintenance Requirements

In accordance with federal and state regulations, the financial aid office must monitor academic progress toward graduation. Graduate students must complete at least 67 percent of attempted hours to maintain eligibility for federal and state financial aid. The maximum total hours for a master's or doctoral degree, and GPA requirements are monitored and enforced through the University's Graduate Academic Standards policy. Students who lose financial aid eligibility and who have experienced unusual circumstances may submit a written appeal with documentation and submit it to Student Financial Aid to be considered by an appeal committee.

Withdrawing or Dropping from Courses

Financial aid recipients considering a partial or complete withdrawal should discuss withdrawal or complete withdrawal plans with a financial aid counselor before withdrawal. Make an appointment by calling Bronco Express, (269) 387-6000.

Financial aid recipients who drop some classes during the drop/add period (or indicate having never attended some classes) may lose some or all financial aid eligibility. Financial aid recipients who drop all classes prior to the start

of the semester (or having never attended any classes) are no longer eligible for financial aid for that semester. All scholarship, grant and loan payments and refunds of financial aid must be returned to Western Michigan University.

A federal financial aid recipient who completely withdraws from all classes after the beginning of the semester will have the amount of federal aid earned up to that point determined by a specific formula. If more federal aid was received than earned, the excess aid must be returned. The amount of federal aid earned is determined on a pro-rata basis. For example, if 30 percent of the semester is completed, then 30 percent of the federal aid is earned. Once a student has completed more than 60 percent of the semester, all of the federal aid is earned.

Assistantships and Fellowships

An assistantship, associateship, or fellowship awarded by a department or college will not be indicated on the financial aid award letter until the financial aid office has been notified of the award. If a student has been awarded federal loans, the loans may be reduced when the assistantship, associateship, or fellowship (or any other awards) is added to the award file. Federal loans may be reduced at the time the financial aid office receives notification of the receipt of additional assistance.

Admittance Status

Students need to be admitted to a graduate degree-seeking program to be eligible for most types of financial aid. Students who are admitted to WMU in a non-degree program may not be eligible for financial aid. Students admitted to complete teacher education certification requirements to obtain permanent certification may be eligible for loans at the undergraduate level.

Eligibility

A student who wants financial aid must meet certain eligibility requirements. The student must be a regular admitted, degree-seeking student enrolled in courses at WMU. Once the student has completed degree requirements, he is no longer eligible for aid. Guest students are not eligible. Certificate programs are not eligible, except for the Specialty Program in Alcohol and Drug Abuse. Students who are completing hours for professional teacher certification are eligible for undergraduate loans.

International Students

International students are not eligible for Federal or State aid. There may be scholarships, assistantships, associateships, or fellowships available through WMU departments or the Graduate College. International students may also be eligible for an alternative loan if a U.S. citizen who is credit-worthy is willing to co-sign the loan.

Consumer Information

As a consumer, students have the right to certain disclosures and information per federal regulations. Students may view a list of rights and responsibilities, as well as other consumer disclosures related to financial aid on our website, http://wmich.edu/finaid/resources/consumerinfo. A request for printed information may be submitted in writing to:

WMU Student Financial Aid
1903 W. Michigan Avenue
Kalamazoo, MI 49008-5337

Other Graduate Policies of Interest

Academic Standards

Notwithstanding the Academic Standards policy outlined below, a student admitted with Conditional Admission or Provisional Admission status must meet the specified performance level within the time frame identified in the letter of admission or may not continue to enroll in University courses. Further, the Academic Standards policy inherently presumes the student will first meet satisfactorily any obligations or requirements specified in the letter of admission before the Academic Standards policy shall have any effect on the continuing enrollment of the student.

1. Good Standing: A graduate student admitted to a graduate degree or certificate program is in good standing whenever that student's degree or certificate program grade point average is at least 3.0.
2. Warning: Whenever the grade point average for any enrollment period is less than 3.0, but the degree program grade point average is 3.0 or above, the student will be warned.
3. Probation: If a student's degree program grade point average falls below 3.0, the student will be placed on probation.
4. Extended Probation: The student will be placed on Extended Probation when, following a semester on Probation, the student's degree program grade point average is below 3.0 and the student's grade point average for the enrollment period is 3.0 or above.
5. Final Probation: The student will be placed on Final Probation when, following a semester on Extended Probation, the student's degree program grade point average is below 3.0 and the student's grade point average for the enrollment period is 3.0 or above.
6. Probation Removed: When the conditions of Good Standing are restored, Probation will be removed.
7. Dismissal: Students on Probation or Extended Probation who fail to achieve at least a 3.0 grade point average for the enrollment period, or students on Final Probation who fail to achieve a 3.0 cumulative grade point average will be dismissed from the University.
    - Dismissed students must apply for readmission through the normal admission process. The student will send a Readmission Application to the Admissions Office that, in turn, will forward the student's Readmission Application to the program or academic unit admission body for decision on readmission.
8. Appeal Procedure: Upon appeal by the student, the program or academic unit admission body will determine whether to grant Extended Probation or Final Probation status. The status must be granted by the program or academic unit admission body in order for the student to register. The appeal must be initiated and the decision made by the program or unit prior to the subsequent semester's last day to add classes.

Attendance

Students are responsible directly to their instructors for class and laboratory attendance, and for petitions to excuse absences.

Course Grades and Grading System

A grade is given in each course in which a student registers. Grades are indicated by letters and assigned honor points as shown in the table below. **Credit toward a degree program will be granted only for courses in which a grade of "C" or better is earned.**

Grade	Definition	Honor Points Per Credit Hour
A	Outstanding, Exceptional	4.0
BA		3.5
B	Very good	3.0
CB		2.5

C		2.0
DC		1.5
D		1.0
E	Failing	0.0
X	(Failure) Unofficial Withdrawal	0.0
I	Incomplete ~	
W	Official Withdrawal ~	
CR	Credit	
NC	No Credit	
AU	Audit	

X - (Failure) Unofficial Withdrawal: The symbol "X" is used to indicate that a student has never attended class or has discontinued attendance and does not qualify for the grade of "I." The "X" will be computed into the student's grade point average.

I - Incomplete: This is a temporary grade which the instructor may give to a student when illness, necessary absence, or other reasons beyond the control of the student prevent completion of course requirements by the end of the semester or session. The grade of “I” (Incomplete) may not be given as a substitute for a failing grade.

A grade of "I" must be removed by the instructor who gave it or, in exceptional circumstances, by the department chairperson.

Incomplete grades (except those given in Master's Thesis 7000, Specialist Project 7200, and Doctoral Dissertation 7300, and courses directly related to them or identified by departments) will convert to an "X" if not removed within one calendar year, or sooner if so stipulated by the instructor. Students who receive an incomplete grade in a course must not reregister for the course in order to remove the "I".

An instructor who assigns a grade of "I" will submit a Report of Incomplete Grade Form located on the faculty menu in GoWMU indicating the remaining requirement for removal of the incomplete grade and indicating the time allowed, if less than one year. An e-mail will be automatically generated to the student, the Registrar’s Office as well as an e-mail confirmation sent to the instructor.

W - Official Withdrawal: A grade of "W" is given in a course when a student officially withdraws from that course or from the University before the final withdrawal date in the semester or session.

CR or NC - Credit or No Credit: The Credit/No Credit grading system is used in all 7000-level courses, as well as some departmental courses approved by the University. The student's transcript will indicate "CR" when the grade received is an A, BA, or B; "I/NC" when incomplete; and "NC" when the grade received is a CB, C, DC, D, E, or X. The student must enroll as Credit/No Credit at the time of registration, and may not change from Credit/No Credit grading after the drop/add period has ended.

AU - Audit: The symbol "AU" is used to indicate that a student has enrolled in a course as an auditor, has attended at least three-fourths of the class or laboratory sessions, and has given evidence to the course instructor that the role as auditor has been satisfactory. A student who registers for a graduate course as an auditor, with the permission of the instructor, is not eligible to sit for examinations, earns no credit hours for the registration, and pays full tuition. The student must enroll in the audit status at the time of registration, and may not be transferred from the audit status after the drop/add period has ended.

For 7000-level credits, grades of Credit (CR) or No Credit (NC) may be given, with departments held responsible for insuring that progress on the thesis/project/dissertation has in fact been made in any term for which the grade of

Credit (CR) is given. The grade of No Credit (NC) will not affect a student's over-all GPA, but it will stay on the record as an accurate representation of a student's history in that term.

Because a transcript is to be an honest and accurate record of a student's academic work, should a student receive a series of Credit (or even No Credit) grades for 7000, 7200, or 7300 and then decide not to complete that work, the enrollments and grades for 7000, 7200, or 7300 will remain on the transcript.

Theses and projects will still involve only six (6) completed credits. Dissertations will involve whatever number of completed credits is stipulated on the student's program of study, which can range from 12 to 24. Consequently, until the student earns the required number of credits for the writing, registration for credits resulting in grades of "NC" will need to be repeated.

Grade Change

A student who believes that an error has been made in the assignment of a grade must follow the procedure described later in this catalog in the Student Rights and Responsibilities section under the heading, “Course Grade and Program Dismissal Appeals.”

Grade Point Average

A grade point average is obtained by dividing the total number of honor points earned by the total number of semester hours completed. For example, a total of forty-eight honor points earned in a semester by a student who completed sixteen hours of course work gives a grade point average of 3.0 for the semester.

Graduate Credit by Examination

Each academic unit responsible for offering a graduate program may, with the approval of its dean, establish a procedure for granting credit by examination for any course numbered 5000 through 6990. All credit by examination is subject to the following regulations:

1. The academic unit which offers a graduate program shall determine if an equivalency examination may be used to obtain credit for a particular 5000- or 6000-level course in that academic unit.
2. All equivalency examinations will be administered and graded by no fewer than two faculty members from the academic unit offering the particular course.
3. All credit by examination shall be graded "Credit" or "No Credit." "Credit" will be posted on the transcript as "Credit earned by examination" without letter grade or honor points. Students who do not achieve a sufficient score to receive "Credit" will have no entry made on their transcripts.
4. Credit by examination can be used to meet all other University graduation requirements except the residency requirement.
5. Credit by examination can be earned only by those students admitted to a specific graduate degree or certificate program and who are enrolled concurrently with the examination for credit.
6. Credit by examination earned at another university may transfer in accordance with the current policies of the Graduate College governing the transfer of credit.
7. Examination fees are assessed on a credit hour basis and are the same for all students. The current fee schedule: less than four credit hours, $50.00; four credit hours to eight credit hours, $100.00. By special arrangement, some course examinations may require higher fees.

Honor Points

The number of honor points earned in a course is the number of semester hours credit given by the course multiplied by the value of the letter grade received. (See the “Grading System” table above.) For example, a grade of "B" (3 honor points) in a four-hour course gives 3 X 4, or 12 honor points.

Honor points are not generated in a Credit/No Credit course, such as in any 7000-level course.

Credit earned in undergraduate courses is not computed into the graduate point-hour ratio.

Honor point deficiencies acquired in credits earned at Western Michigan University cannot be made up by credits and honor points earned at another university. Only credit hours transfer from another university-not grades and not honor points.

Repeated Course

With the exception of courses that are approved by the University Curriculum Review Policy as repeatable for credit (e.g., multi-topic or umbrella courses), no more than two courses may be retaken and no course may be repeated more than once during the student's graduate career (inclusive of both master's and doctoral programs) at WMU. This number may be further limited by individual departments. Permission to retake a course must be obtained from the program advisor and graduate dean before registration for the course to be repeated takes place. The original grade for the course will remain on the student's transcript, and both the original and repeated course grade will be computed into the degree program grade point average.

Final Examination

All students enrolled in a course in which a final examination is given must take the examination.

Student requests for an examination at any other time than that scheduled may not be honored.

Full-time/Part-time/Three-quarter time Student Status

For all graduate students taking courses for a stated degree or certificate program, six hours constitutes full-time status, five hours constitutes three-quarter time status, and three hours constitutes half-time status in Fall and Spring semesters. In the Summer I and Summer II sessions, three hours in either session constitutes full-time status for that session and two hours constitutes half-time status. Three-quarter time status is not available for sessions.

Students who have completed all course work for their master's or doctoral level program and who have only the thesis or dissertation to complete are required by Western Michigan University to enroll for a minimum of one-hour in thesis or dissertation credits in all Fall and Spring semesters through the semester of graduation. If the student will graduate in the Summer I or Summer II session, the student must be enrolled in that session. Such enrollment will satisfy WMU's continuous enrollment requirement.

However, students must be aware that FICA regulations and some federal loan deferment regulations require at least half-time enrollment, which at WMU is now at least three hours of enrollment. Graduate students, even those enrolled for thesis or dissertation hours, must be enrolled for at least half-time (3 hours at WMU) in order to qualify for FICA tax exemption or to be eligible for loan deferments.

Since enrollment fees are determined by hours enrolled, and not by full- or part-time status, students (whether graduate or undergraduate) who enroll for four or fewer hours are charged a lesser enrollment fee than those who enroll for five or more hours, and consequently they will be required to pay an additional fee for unlimited use of the recreation center. Students enrolling for four or fewer hours will have access to the recreation center for 10 visits without extra fee charges.

Service-Learning, Co-Curricular Learning and Volunteerism

Service-learning, co-curricular learning and volunteerism are all forms of experiential learning that do not include financial remuneration. Experiential learning is an important aspect of a student's academic career and includes pedagogies that incorporate practical application and hands-on experiences into learning.

Service-Learning: Service-learning, while enrolled at Western Michigan University, is a mutually beneficial endeavor in which course learning objectives are met by addressing community-identified needs--putting academics into practice. The criteria for the service-learning course designation are as follows:

- Service project must enhance understanding of course learning objectives
- Students provide at least 15 hours of service during the semester. Project-based learning is determined by completion of project goals rather than number of hours. *Hours must be logged*
- Must include critical reflection of student's experiences
- Projects must serve a community-identified need
- Must be a reciprocal partnership among community partners, students, and professors/instructors/staff
- Projects must be arranged by university faculty or staff
- Only courses in which service-learning is required for all students will receive the service learning designation
- To receive the designation, the course must include the service-learning requirement every time it is taught

Co-Curricular Learning: Co-curricular learning, while enrolled at Western Michigan University, takes place outside formal academic studies. The criteria for co-curricular learning include:

- Learning objectives are determined by the organizing body, and are not associated with course content and objectives
- Number of hours is set by the organizing body-Registered Student Organizations (RSO's), Resident Assistants (RA's), other student groups, etc.
- Includes structured reflection
- Service enhances student learning and meets community needs

Volunteerism: Volunteerism refers to work done to give back to the community and may be completed by individual students or by organized group activities. It may be done on a voluntary basis or as required for an academic course, program or other campus organization while enrolled at Western Michigan University. Volunteerism:

- Is usually not related to an academic course
- Has no minimum or maximum number of hours; hours should be logged in GoRSO
- Does not necessarily include reflection

Accelerated Graduate Degree Program

The Accelerated Graduate Degree Program (AGDP) allows students to begin accumulating credits towards completion of a Master's, Specialist or Doctoral degree while still enrolled as undergraduates. Undergraduate students admitted to an AGDP, with senior standing, could take 5000 and 6000 level courses for graduate credit. Up to 12 hours of designated 5000 and/or 6000 level courses could be used in both the Bachelor's degree and the Master's, Specialist or Doctoral degree. All departmental programs must be approved in advance through the regular curricular process, i.e. departmental curriculum committee, college curriculum committee, dean, Undergraduate Studies Council and Graduate Studies Council.

Admission Procedure

Participation in the AGDP by any department is optional. Each department will develop admission criteria based on the following guidelines:

1. Minimal criteria for admission will include: a cumulative undergraduate GPA of at least 3.0 based on at least 45 earned hours, 15 of which shall be earned at Western Michigan University, and additional criteria as determined by the department.
2. The student completes the online graduate application (http://www.wmich.edu/apply) and within the application selects the application type "Accelerated degree seeking - only available to current WMU undergraduate student."
3. International students must clarify their visa status with the Office of International Student and Scholar Services before submitting an application for AGDP.
4. Students intending to enroll in any AGDP must maintain a 3.0 GPA throughout their baccalaureate degree, or their admission to the AGDP will be revoked.

Academic Advising, Records and Program Requirements

Departments that want to participate in the AGDP will develop a clear admissions and advising process for the AGDP. The department will send the student and the registrar an Accelerated Graduate Degree Program Course Approval form stating which graduate courses may be counted in both degrees. A copy of this form will be placed with the student's record, and the change will be incorporated into the student's undergraduate and Master's, Specialist or Doctoral program as outlined below. Graduate courses substituting for required courses within the undergraduate degree must be designated by the program as equivalent in content but delivered with graduate level rigor. Current 5000 level courses (required or elective) in the bachelor's degree must be taken at the graduate level to be double counted. The courses for the AGDP may be used to complete the undergraduate degree credit hour requirements. Those students completing an AGDP related to a specialist or doctoral degree must meet the minimum number of required credits for that degree under the graduation requirements in the graduate catalog.

Administration of the program will include the following:

1. Students with senior standing who have been accepted into an AGDP could take 6000-level courses for graduate credit while undergraduates. This registration will be done by the Registrar's Office, with permission of the department and the student. This will occur in the same way that dually enrolled students are registered as undergraduates and graduates under current policy.

2. Students will pay undergraduate tuition for these 6000-level courses as long as they are undergraduates. The 6000-level courses will be included in the flat rate for tuition purposes.

3. Students will be considered undergraduates for financial aid purposes until they receive the baccalaureate degree.

4. The 6000-level courses, taken while the student is still an undergraduate, will appear on the student's graduate transcript. The grades earned in these courses will be reflected in the graduate GPA.

5. At the time when a student completes his/her bachelor's degree, the Registrar's Office staff will manually add the hours earned in the 6000-level courses to the student's undergraduate transcript. The undergraduate GPA will also be adjusted to include the grades earned in these courses.

6. The department will clearly identify for the Registrar's Office on the original proposal which 5000 and 6000 level courses are available to be double counted. Individual students will have specific courses identified to be double counted when they are admitted into the AGDP.

7. The 5000 and 6000 level courses which are double counted will be identified as such on the graduate transcript.

8. The transcript key, which is on the back of the transcript paper, will explain the double counting.

9. Both the undergraduate and graduate transcript will show that the student completed an accelerated graduate degree program.

10. If a student completes his/her bachelor's degree and then stops attending the AGDP, the graduate transcript will show the graduate courses completed.

11. It is expected that the baccalaureate degree will be awarded within one calendar year after initial enrollment in the AGDP or as determined by the department.

12. In order to progress automatically into the graduate program, a student must achieve a grade of "B" or above in each of the graduate courses being counted for the undergraduate degree, as well as maintain a 3.0 GPA overall. Students who do not meet this criterion will have the earned grade applied to their undergraduate program only, and must apply for readmission into the graduate program. If the student is admitted to the graduate program, the department and graduate dean will determine if any credit from the bachelor's degree will be carried forward for the graduate degree. Students who complete the undergraduate degree including a "B" or above in the specified graduate courses will be admitted as graduate students (with the relevant graduate credit) in the next semester or session after receiving the bachelor's degree.

Annual Review of Graduate Students

A graduate student's academic performance, professional development, research progress, and, where applicable, professional/ethical behavior will be reviewed annually to determine the student's eligibility to continue in the program. Annual review forms for doctoral and master's students may be found on the Graduate College website forms page or programs may use their own forms. Upon the student's initial enrollment in a graduate certificate, master's, specialist, or doctoral program, the department shall provide a document to the graduate student outlining its annual review criteria and procedures. The review will assist the student in measuring timely progress toward completion of the program of study and in providing documentation for awards or assistantships or, if deficiencies are apparent, note them and indicate corrections necessary within a specifies period of time. Uncorrected deficiencies and/or unsatisfactory progress, performance, or behavior may result in a student's dismissal from the program. Best practice guidelines can be found under Annual Review at: www.wmich.edu/grad/forms.

Academic Forgiveness

Students who are readmitted into graduate study may apply for academic forgiveness through the Graduate College. Students who are granted academic forgiveness will not have grades and credit hours count in the computation of their grade point average that were earned more than seven years prior to their new entrance date. In such cases, the transcript will read, “Grades and credit hours earned more than seven years prior to current entrance date were not included in the computation of the grade point average.” The request for academic forgiveness must occur at the time of readmission.

Graduate Student Permanent Program of Study

A Graduate Student Permanent Program of Study is a document composed by a graduate student's program advisor that lists all course and other requirements necessary for completion of the degree program to which the student was admitted. The Graduate Student Permanent Program of Study is approved by the student's program advisor and by the graduate dean, filed in the Registrar's Office, and used to audit the student's eligibility for the degree. For more information, see the section in this catalog entitled Graduation Procedures and Requirements.

Leave of Absence, Graduate Student

Western Michigan University supports a graduate leave of absence policy to assist graduate students who are temporarily unable to continue their programs. The leave of absence may extend consecutively for up to two semesters and two sessions (i.e., up to one year). Extensions of a leave of absence may be possible with a new application. Reasons for requiring a leave usually include bereavement, illness, care giving, maternity, paternity, and call to active military duty. Students requesting a leave of absence must submit an application to their department/school/unit chairperson or director, which then must be forwarded to the Graduate College for approval by the graduate dean. The policy and form can be found on the Graduate College website.

Preparing the Application for Leave of Absence

In consultation with the supervising faculty member, an Application for Leave of Absence form is to be completed by the student, and signed by both the student and the advisor or supervising faculty member. The application is to be submitted to the chairperson/director for review and signature before being forwarded to the dean of the Graduate College. Whenever possible, application should be made in advance of the anticipated leave or as soon as possible after commencement of the leave. Whenever possible, it is helpful if the commencement and termination of the leave coincide with the beginning of a semester or session.

It is the student's responsibility to ensure that the proposed leave is compatible with the regulations of any granting agency from which funding would normally be received during the leave period and that such agencies are informed of the proposed leave. Students on student loan programs should clarify the consequences that such a leave may have on their repayment status. International students are advised to consult with the Office of International Admissions and Services regarding their immigration status during a proposed leave.

A student granted a leave of absence will have his or her time-to-completion of degree extended by the amount of time granted in the leave of absence. The continuous enrollment policy will also be held in abeyance during this time.

Graduate Appointees Requesting a Leave of Absence

A graduate student holding an assistantship, associateship, or fellowship who is granted a leave of absence will have his or her salary and stipend (where applicable) suspended during the period of the leave. During the absence, a student replacement will serve usually on a temporary basis. Whenever possible, the remainder of the appointment will be held for the student upon his or her return to the next term. However, in situations where research activity has progressed substantially during the absence, the original appointee may no longer be able to resume the appointment. In situations where the student is returning in the next academic year, efforts will be made for that student to resume his or her appointment if possible.

In the event that a student appointee and chairperson/director disagree on the leave or its arrangements, students may follow the dispute resolution process available under the policy on Adjudication of Situations Involving Graduate Students Rights and Responsibilities.

Graduate Credit and Course Numbers

To receive graduate credit, graduate students will register for courses offered at the 5000-, 6000-, or 7000-level. Courses numbered 6000 and above are open only to graduate students; courses numbered 5000 through 5990 are open to both graduate students and advanced upperclass students who meet the course prerequisites. Graduate students enrolling in courses at the 5000-level or higher will receive graduate credit.

A 5000-level course is open to graduate and advanced undergraduate students. A graduate student must register for graduate credit in a 5000-level course.

All 7000-level courses are graded on a "Credit/No Credit" basis, without exception.

No graduate credit is given for registration in undergraduate courses, nor for any type of correspondence work, regardless of course number.

Independent Study

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

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

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

The following policy guidelines are intended to serve that function.

Proposals for Independent Study

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

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

Approval Process

The faculty member must accept and approve the student and the project, and then submit the agreed-upon proposal on the appropriate University form to the department chairperson for approval. If the chairperson approves, information copies of the form must be submitted to the dean and the Registrar.

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

Faculty Responsibility

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

A student is on his/her own in Independent Study in that it involves no class meetings or formal lectures, but the faculty member is the responsible custodian of the project, obliged to provide guidance, assistance, criticism, suggestion, and evaluation, and shall be the instructor of record who is responsible for turning in a grade to the Registrar's Office.

Registration

Registration at WMU is conducted via the schedule and procedures as found on the Registrar's website, http://www.wmich.edu/registrar. This website should be consulted for information on registration dates, the priority registration schedule, drop/add dates, refund dates, final exam schedules, deadlines and methods of payment, and all policies related to registration. **Registration by students signifies an agreement to comply with all regulations of the University whenever approved by WMU.**

Students should be aware that course information, including building, room, instructor, and time may change. The information in the online registration system is the most current.

To begin registration, the student will log in to GoWMU at http://gowmu.wmich.edu and follow the script displayed.

Registering for Classes

Western Michigan University offers advance registration for each enrollment period as described on the Registrar's website. Students are encouraged to take advantage of advance registration but are cautioned that any subsequent change in their schedules should be made before the final day of the drop/add period. See the sections below for more information about changing registration schedules.

Adding and Withdrawing from Classes Before the Final Date to Drop

Students may enroll in (add) any course through the first five days of classes of a semester or session. The final date for adding courses is published on the Registrar's website http://www.wmich.edu/registrar.

Only students who have a class that is not officially scheduled to meet during the five-day Drop/Add period will be given an additional opportunity to drop/add.

Students may withdraw (drop) classes through the fifth (5th) day of the semester or session and the course will not be reflected on the student's official transcript. All withdrawals received after the Drop/Add period will be reflected on the student's academic record as a non-punitive "W" (Official Withdrawal), as long as the withdrawal complies with the policy explained directly below.

Dropping Classes and Withdrawing from all Classes

Students may withdraw from one course, several courses, or all courses, without academic penalty from the day after the last day of the drop/add period for the semester or session, through the Monday of the tenth week (Fall/Spring semesters) and through the Monday of the fifth week (Summer I/II sessions). These withdrawals can be processed by the student online, through GoWMU. A non-punitive "W" will be recorded on the student's transcript for any classes the student withdraws from after the drop/add period.

Students are encouraged to discuss a withdrawal with their instructor before withdrawing as the student may not re-enroll.

Students should also be aware that there may be financial implications following a withdrawal. A withdrawal from any course or courses which changes a student's status from full time to part time may have insurance or other implications.

Withdrawal from a course at any time after the end of the student-initiated withdrawal period is effectively a grade change. As such it will be permitted only through the Grade Appeals Process, as described in the section Students Rights and Responsibilities, "Course Grade and Program Dismissal Appeals." To change an assigned grade to "W,"

documented hardship must be determined to have existed by a GAPDAC Hardship Assessment Panel, as described in the section Students Rights and Responsibilities, "Hardship Status".

Except for documented and exceptional circumstances, hardship petitions will not be accepted more than one year after the end of the term or session for which the hardship was documented. All petitions filed after the one year timeline must be granted an exception by the Office of the Provost prior to consideration by the Hardship Assessment Panel.

The student is strongly encouraged to consult with the University Ombudsman before initiating a hardship-based withdrawal appeal.

After a semester or session has ended, a student wishing to withdraw from a course may file an appeal for a late withdrawal, as described in the Course Grade and Program Dismissal Appeals section, in the Student Rights and Responsibilities section of this catalog.

The Registrar’s Office will record the drop or withdrawal if approvals are given as listed above.

Records

Identification Card

The Bronco Card is the student's photo identification card at WMU. In addition, the Bronco Card is the student's access card for the library, dining areas, Student Recreation Center, and computer centers and is a security access card for buildings on campus.

The Bronco Card also enables the student to ride for free on the Metro Bus Service on any route around the Kalamazoo area.

The Bronco Card has the size, look, and feel of a credit card. Included on the card are the student's picture and signature. On the back of the card is a magnetic strip, used for authentication.

The Bronco Card will serve the student as a University ID for as long as the student remains at WMU.

Name Change

Students may maintain academic records under the name used at the time of admission. However, any active student desiring to make an official name change must report to the Registrar's Office, third floor Seibert Administration Building to record the change. Legal proof is required.

Preferred Name

Western Michigan University recognizes that some students use first names other than their legal names to identify themselves. As an inclusive and diverse community, WMU allows students to use a preferred first name different than their legal name for certain purposes and records in the course of university business, communication, and education.

The legal name must still be submitted at the time of application and will continue to be used where required by law or university requirements. Appropriate WMU senior administration is authorized to make revisions, develop, manage and enforce guidelines to implement this policy to comply with the law, other university requirements, and collective bargaining agreements.

Students are expected to be respectful and appropriate in the use of preferred name. The use of the preferred name is not permitted to avoid legal obligations or for misrepresentation purposes. Any misuse can result in discipline as permitted under the Student Code. The University reserves the right to deny the use of or remove the preferred name if it deems the use is inappropriate.

Transcript

A student's transcript from Western Michigan University is a document listing, at minimum, all courses taken and credit hours from Western Michigan University and grades earned in the courses.

University Admission Types, Degree Status

General Admission

General Admission is granted to the student who meets the admission requirements of the University. All related materials have been received. Enrollment in courses is expected to lead to a degree or to meet state or federal certification requirements associated with WMU programs. Examples are state certification for teacher education or federal certification for aviation.

Provisional Admission

Provisional Admission is granted to the student who meets many of the admission requirements to the University and is expected to be formally admissible. Enrollment status is provisional due to additional documents or materials required following admission. Examples of missing documentation could be a final transcript or an undergraduate transcript of work taken at another institution of higher education in the USA or abroad. The requested documents must be received within 30 days after the start of the entering term in order to continue enrollment.

Conditional Admission

Conditional Admission is granted by the department to the student who meets some of the admission requirements of the University. Continued enrollment in courses at WMU is conditional upon the applicant completing academic course work at a performance level specified at the time the “Conditional Admission” status is granted. Examples of specific performance could include: a) Completion of the first twelve hours of graduate work with “B” or better grades in all courses; b) completion of required remedial or prerequisite courses with specified (or better) course grades. The time period for any “Conditional Admission” status may not exceed one year from the time of initial status. After that time period, and if the specified conditions have been met, the conditional admission status will be removed.

Dual Undergraduate/Graduate Enrollment Admission

Dual enrollment applicants (that is, consideration for admission to a master’s program while yet enrolled in a baccalaureate program) may be granted to any WMU senior who has an acceptable academic record (with a grade point average of 3.0 or better for the two years prior to admission date) and who has no more than 15 credit hours remaining for completion of the bachelor’s degree.

Once granted dual enrollment status, the student may enroll in a maximum of 12 credit hours of graduate course work that has been approved by the appropriate departmental advisor in addition to those undergraduate courses required to complete the bachelor’s degree.

Dual enrollment is permitted on a semester-by-semester basis, and no graduate credit earned in this way may be used to meet undergraduate requirements. If the bachelor’s degree is not completed in the period of one calendar year, the student may not continue on dual enrollment.

A student must request dual enrollment status by emailing admissions-graduate@wmich.edu; however, official entry is not immediate. Graduate credits earned accumulate, but the official entry date must follow the semesters or sessions of dual enrollment status and the completion of the bachelor's degree.

Undergraduate students from other institutions that have signed agreements through a Memorandum of Understanding (MOU) may also be granted permission to enroll in graduate coursework upon approval by the appropriate advisor.

Not Admitted

An applicant "Not Admitted" to a program is not eligible for enrollment in courses or academic programs at WMU. Applicants who receive the "Not Admitted" status may need to wait one full year before reapplying to the same program.

Readmitted with Academic Forgiveness

Students who are readmitted into graduate study will not have grades and credit hours count in the computation of their grade point average that were earned more than seven years prior to their new entrance date. In such cases, the transcript will read, “Grades and credit hours earned more than seven years prior to current entrance date were not included in the computation of the grade point average.”

Admission Status, Active and Inactive

Admitted graduate students have active admission status for one year from the time of admission, as well as one year from the date of last enrollment. However, if a student does not enroll in the semester for which they were admitted, they need to contact the Office of Admissions to request a change of admission term in order to register for a subsequent term. If a student does not enroll during the year following admission or during the year following the last enrollment, the student's admission status is canceled, the student is on inactive admission status, and may not register. Thereafter the student must submit to the Office of Admissions a new application and be admitted anew by the appropriate program admission body before registration may occur.

Student permanent record folders are maintained for seven years after a student is placed on inactive status, and are thereafter destroyed.

University Admission Types, Non-degree, Graduate Level

Non-degree Admission

Non-degree is a limited admission status and is granted to the student with a bachelor's degree who is eligible for enrollment in graduate courses with the understanding that course work taken with this status is specifically for (a) continuing teacher certification, (b) SCOPE registrations, or (c) non-degree status in order to enroll in graduate classes without being admitted to a specific program. Such course work usually will not apply to a WMU graduate degree program. If the non-degree admitted student subsequently decides to apply to a specific WMU graduate degree program after his or her non-degree enrollment, a maximum of nine hours of graduate credit elected under this status may be considered for inclusion in a graduate program (with the consent of a program advisor and the Graduate College) and the applicant will be expected to meet all other University and program-specific admission requirements. Departments may exclude students with this status from taking courses or may limit the transfer of Non-degree hours to a degree program should the student later be admitted to a degree program. Students on graduate non-degree status are not eligible to hold a graduate appointment (e.g., assistantship). The time period for any "Non-degree Admission" status may not exceed four years from the time such admission status is granted.

Graduate Certificate Program Admission

Graduate Certificate Programs are non-degree programs (except for the Alcohol and Drug Abuse Certificate Program) with specific course requirements. Such course work usually will not apply to a WMU graduate degree program. Departments may exclude students with this status from taking courses or may limit the transfer of non-degree hours to a degree program should the student later be admitted to a degree program. Students in graduate certificate programs are eligible to hold a graduate appointment (e.g., assistantship) only within their certificate program. The time period for this "Non-degree Admission" status may not exceed four years from the time such admission status is granted.

Michigan Intercollegiate Graduate Studies (MIGS)

Western Michigan University—along with Andrews University, Central Michigan University, Eastern Michigan University, Ferris State University, Grand Valley State University, Michigan State University, Michigan Technological University, Northern Michigan University, Oakland University, Saginaw Valley State University, Siena Heights College, University of Detroit, University of Michigan, and Wayne State University—participates in the Michigan Intercollegiate Graduate Studies (MIGS) program sponsored by the Michigan Council of Graduate Deans. The MIGS admissions category is a guest scholar program that enables graduate students of Michigan institutions offering graduate degree programs to take advantage of unique educational opportunities on the campuses of the other institutions. Any graduate student in good standing in a master's, specialist, or doctoral program at a participating institution is eligible to participate in the MIGS program. (Western Michigan University participates in this program.) The student's good standing at the home institution affords the opportunity to study at the host institution, providing the proposed program of study is approved by the departmental officers and the MIGS liaison officers at both the home and host institutions. The officers of the home institution determine whether the experiences sought are unique or not available at the home institution; the officers of the host institution determine whether space and other necessary resources are available at the host institution. With the approval of the student's academic advisor, a student may combine a part-time enrollment at the home institution (WMU) with a part-time MIGS enrollment. This type of enrollment is limited to one term for master's or specialist degree students, or two terms for doctoral degree students. For further information, contact a graduate advisor or the MIGS liaison officer in the Graduate College.

Students on MIGS enrollment pay tuition and other fees normally charged by the host institution. All credit earned under a MIGS enrollment will be accepted by the student’s home institution as if offered by that institution; unlike regular transfer credits, grades earned in MIGS courses are applied toward the home institution grade point average. When MIGS credits are transferred into a graduate program, the total number of transferred credits from all sources may not exceed 50% of the credits required in the program. Upon requesting transcripts from the host institution, the

student must contact the Academic Records Office at WMU to indicate that a transcript is being sent for posting on the academic record as MIGS graduate credit.

MIGS application forms may be obtained from the Registrar's Website or the Graduate College Website. WMU students desiring to participate in the MIGS program must have the completed MIGS application certified by the MIGS liaison officer in The Graduate College prior to submitting the application to the host institution.

Project S.C.O.P.E. (Senior Citizens' Opportunity Program in Education)

The following are the key features of the Senior Citizen's Opportunity in Education Program:

1. Senior citizens (persons 62 years of age or older) may qualify.
2. Enrollees may register during the drop/add period in one regularly scheduled class, tuition free, each semester or session on a seat-available basis. The late registration fee is waived. Registration is done by the Registrar's Office.
3. Enrollees may not register for credit.
4. Only academic facilities necessary for the performance in class are accessible to SCOPE participants. SCOPE enrollees do not have access to normal services available to regular students such as the Health Center, Student Recreation Center, student discounts, etc. Special identification cards are issued to SCOPE participants.
5. Regular, degree-seeking admission is not extended to enrollees so the admission application fee is waived.
6. Special course fees, if applicable, for materials, trips, etc. are assessed.
7. Specific courses may not be available to SCOPE students due to space availability.

In addition to the tuition and fees, in the event the account is referred to a collection agency, the student will be responsible for any collection costs, collection fees, and collection charges and/or legal fees incurred in collecting the account balance.

Questions concerning current fee schedules should be directed to the Office of the Director of Accounting Services.

General University Policies

In addition to the several policy statements included below, the University's Student Code and general academic policies may be found, respectively, on the following Western Michigan University websites: http://www.wmich.edu/conduct/ and www.wmich.edu/registrar.

Code of Honor

Western Michigan University (WMU) is a student-centered research university that forges a responsive and ethical academic community. Its undergraduate, graduate, and professional programs are built upon intellectual inquiry, investigation, discovery, an open exchange of ideas, and ethical behavior. Members of the WMU community respect diversity, value the cultural differences of those around them, and engender a sense of social obligation. Because of these values, all individuals are expected to conduct themselves in a professional and civil manner. This includes exemplifying academic honesty, integrity, fairness, trustworthiness, personal responsibility, respect for others, and ethical conduct. These attributes are exhibited in the University as well as in the community. Members of the University community abide by this code out of commitment to serve as responsible citizens of the University, the community, the nation, and the world. Responsibility for fulfilling the obligations of the code of honor is shared by the students, faculty, and every other member of the University community.

Student Rights

Basic Rights

As provided by University policy or by law:

1. Students have the right to free inquiry, expression, and association.
2. Students should be free from discrimination and harassment which violates the law or which constitutes inappropriate or unprofessional limitation of employment opportunity, University facility access, or participation in University activities, on the basis of race, color, religion, national origin, sex, sexual orientation, gender identity, age, protected disability, veteran status, height, weight, or marital status.
3. Students should be secure in their persons, living quarters, papers, and effects.
4. Students are protected against improper disclosure as provided for in the Family and Education Rights and Privacy Act of 1974.
5. Students have the right to access their personal records and other University files as provided for under the Michigan Freedom of Information Act.
6. Students are free to participate in the governance of the University through membership in appropriately designated University and college committees.

Academic Rights

Students have those academic rights and responsibilities as described in the University catalogs, including but not limited to the following:

1. Student performance will be evaluated solely on academic criteria.
2. Students have protection against prejudiced or capricious academic evaluation.
3. Students are free to take reasoned exception to the data or views offered in any course of study and to reserve judgment about matters of opinion, but they are responsible for learning the content of any course of study for which they are enrolled.
4. Students will be informed by the faculty about course requirements, objectives, and policies in each class. This information will be provided at the beginning of the semester or sufficiently in advance of actual evaluation.

Each course instructor is required to make available to students a course syllabus that shall contain a basic course description, course objectives, course requirements and policies, grading criteria, and instructor contact information. Instructors are encouraged to include a tentative schedule indicating when various topics will be addressed, and when quizzes, exams and due dates for assignments shall occur. Instructors are further encouraged to include in their syllabi basic University policies regarding academic conduct, human rights, diversity, and students with disabilities.

5. Students have the right to have all their examinations and other graded material made available to them with an explanation of the grading criteria. Faculty will retain all such materials not returned to the student for at least one full semester (or through the Summer I and Summer II sessions) after the course was given. Faculty are not required to return such material to the student, but must provide reasonable access.

Student Academic Conduct

The following policies and procedures shall apply to all matters of student academic conduct.

Academic Honesty

If a student is uncertain about an issue of academic honesty, he/she should consult the faculty member to resolve questions in any situation prior to the submission of the academic exercise.

Violations of academic honesty include but are not limited to:

Cheating

Definition: Cheating is intentionally using or attempting to use unauthorized materials, information, notes, study aids or other devices or materials in any academic exercise.

Clarification

1. Students completing any examination are prohibited from looking at another student's examination and from using external aids (for example, books, notes, calculators, conversation with other) unless specifically allowed in advance by the faculty member.
2. Students may not have others conduct research or prepare work for them without advance authorization from the faculty member. This includes, but is not limited to, the services of commercial term paper companies.

Fabrication, Falsification, and Forgery

Definition: Fabrication is the intentional invention and unauthorized alteration of any information or citation in an academic exercise. Falsification is a matter of altering information while fabrication is a matter of inventing or counterfeiting information for use in any academic exercise or University record. Forgery is defined as the act to imitate or counterfeit documents, signatures, and the like.

Clarification

1. "Invented" information shall not be used in any laboratory experiment, report of results or academic exercise. It would be improper, for example, to analyze one sample in an experiment and then "invent" data based on that single experiment for several more required analyses.
2. Students shall acknowledge the actual source from which cited information was obtained. For example, a student shall not take a quotation from a book review and then indicate that the quotation was obtained from the book itself.

3. Falsification of University records includes altering or forging any University document and/or record, including identification material issued or used by the University.

Multiple Submission

Definition: Multiple submission is the submission of substantial portions of the same work (including oral reports) for credit more than once without authorization from instructors of all classes for which the student submits the work.

Clarification

Examples of multiple submission include submitting the same paper for credit in more than one course without all faculty members' permission; making revisions in a credit paper or report (including oral presentations) and submitting it again as if it were new work.

Plagiarism

Plagiarism is the use of someone else's language, ideas, or other material without making the source(s) evident in situations where there is a legitimate expectation of original work. Plagiarism does not occur when efforts to promptly identify sources by making source use apparent to the audience of the submitted material are obvious. Plagiarism may not necessarily include mistakes in citation style.

A legitimate expectation of original work exists for numerous circumstances, including (but not limited to): scholarly writing, technical presentations and papers, conference presentations and papers, online discussion postings, grant proposals, patents, book and other manuscripts, theses and dissertations, class assignments, artistic works, computer code, algorithms, and other creative works.

This definition applies to the entire WMU community, which includes all faculty; students; staff; visiting faculty, scholars, administrators; and any other person governed by academic research and other policies of the University.

Complicity

Definition: Complicity is intentionally or knowingly helping or attempting to help another to commit an act of academic dishonesty.

Clarification

Examples of complicity include knowingly allowing another to copy from one's paper during an examination or test; distributing test questions or substantive information about the materials to be tested before the scheduled exercise; collaborating on academic work knowing that the collaboration will not be reported; taking an examination or test for another student, or signing another's name on an academic exercise.

(NOTE: Collaboration and sharing information are characteristics of academic communities. These become violations when they involve dishonesty. Faculty members should make clear to students expectations about collaboration and information sharing. Students should seek clarification when in doubt.)

Computer Misuse

Definition: Academic computer misuse is the use of software to perform work which the instructor has told the student to do without the assistance of software.

Conduct in Research

Research and creative activities occur in a variety of settings at the University, including class papers, theses, dissertations, reports or projects, grant funded projects and service activities. Research and creative activities rest on a foundation of mutual trust. Misconduct in research and in creative activity destroys that trust and is prohibited. Students shall adhere to professional standards of integrity in both artistic and scientific research including appropriate representations of originality, authorship and collaborative crediting.

Definition: Misconduct in research is defined as serious deviation, such as fabrication or falsification of data, plagiarism, or scientific or creative misrepresentation, from accepted professional practices of the discipline or University in carrying out research and creative activities or in reporting or exhibiting/performing the results of research and creative activities. It does not include honest error or honest differences in judgments or interpretations of data.

Clarification

Examples of misconduct in research include but are not limited to:

1. **Fabrication of Data:** Deliberate invention or counterfeiting of information.
2. **Falsification of Data:** Dishonesty in reporting results, ranging from unauthorized alteration of data, improper revision or correcting of data, gross negligence in collecting or analyzing data, to selective reporting or omission of conflicting data.
3. **Plagiarism and Other Misappropriation of the Work of Another:** The representation of another person's ideas or writing as one's own, in such ways as stealing others' results or methods, copying or presenting the writing or ideas of others without acknowledgment, or otherwise taking credit falsely. Representing another's artistic or technical work or creation as one's own. Just as there are standards to which one must adhere in the preparation and publication of written works, there are standards to which one must adhere in creative works in the tonal, temporal, visual, literary and dramatic arts.
4. **Abuse of Confidentiality:** Taking or releasing the ideas or data of others which were given in the expectation of confidentiality, e.g., stealing ideas from grant proposals, award documents, or manuscripts intended for publication or exhibition/performance when one is a reviewer for granting agencies or journals or when one is a juror.
5. **Dishonesty in Publication or Exhibition/Performance:** Knowingly publishing, exhibiting or performing work that will mislead, e.g., misrepresenting material, particularly its originality, or adding or deleting the names of other authors without permission.
6. **Deliberate Violation of Requirements:** Failure to adhere to or receive the approval required for work under research regulations of federal, state, local or university agencies, including guidelines for the protection of human subjects or animal subjects and the use of recombinant DNA, radioactive material, and chemical or biological hazards.
7. **Failure to Report Fraud:** Concealing or otherwise failing to report known misconduct or breaches of research or artistic ethics.

Research Assurance Requirements

General Responsibilities: Everyone at Western Michigan University who is conducting research that involves human subjects, vertebrate animals, hazardous materials (biological or chemical) or recombinant or synthetic nucleic acid molecules must obtain approval in advance from the appropriate University oversight committee [Institutional Review Board (HSIRB), the Institutional Animal Care and Use Committee (IACUC), Institutional Biosafety Committee (IBC), or the Radiation Safety Officer, or Manager of Environmental Health and Safety]. Failure to comply with the federal, state, and University requirements is a serious issue that will be addressed by the appropriate University official and the oversight committee. Misconduct in research includes the failure to comply with requirements of the conduct of research and creative activities, e.g., the protection of human subjects, the welfare of laboratory animals, radiation, and biosafety. Allegations in these areas may be brought to the HSIRB, IACUC, and IBC.

- All master's theses, specialist projects, and doctoral dissertations involving research with protected or regulated research subjects and materials must include documentation indicating compliance (approved review or approved exemptions as applicable) with federal, state, and Western Michigan University requirements for the protection of human/animal subjects or appropriate use of genetic or radioactive materials and biohazards.
- A research project other than a master's thesis, specialist project, or doctoral dissertation may be required or accepted by some departments for degree completion (usually with 7100 identified as the course number or, alternatively, another specified course).
- Some departments require a research project in the fulfilling of graduate or undergraduate curricula.

Student Responsibilities: All graduate students are urged to consult the appropriate committee before beginning any research because regulations and policies governing it are strict. The student researcher who prepares the paper is responsible for obtaining the appropriate forms from the official Western Michigan University review board/committee/officer currently: 1) the HSIRB for human subjects, 2) the IACUC for laboratory animals, 3) the IBC for genetic materials, 4) the Radiation Safety/Biosafety Officer for radioactive materials and biohazards, or 5) the Manager of Environmental Health and Safety for chemical hazards and hazardous waste. Approval or an approved exemption for the conduct of the research must be received by the student researcher from the board/committee/officer prior to the initiation of the study.

Department Responsibilities: The department requiring the course is responsible for assuring that the student has complied with federal, state, and Western Michigan University requirements. The appropriate approval or approved exemption form should be included as part of the research report or final paper.

The Graduate College: will not approve any master's thesis, specialist project, or doctoral dissertation which does not comply with these requirements and in that event no credit will be granted for the course.

Charges of Violations of Academic Honesty and Conduct in Research

Western Michigan University's academic honesty and conduct in research policies have been created and defined by members of its academic community, recommended by its faculty senate, and adopted by its board of trustees. The processes necessary to support these policies are managed and facilitated by the Office of Student Conduct (OSC). If you have questions about the forms, the process, your role in the process, or anything else related to academic honesty, please call the Office of Student Conduct at (269) 387-2160. These policies take effect August 30, 1999, and supersede previous catalog sections entitled "Academic Policy and Status," "Academic Conduct Violation: Consequences and Appeals," "Academic Grade Appeals Procedure," and "General Academic Appeals Procedure."

This section applies to cases in which a student is to be charged with a violation of the Academic Honesty Policy, including the policy on Academic Honesty and the policy on Conduct in Research.

1. **Charging a student with a violation:** An Academic Dishonesty/Conduct in Research Charge Form is filled out by the instructor for the purpose of charging the student. After the instructor completes the form, the instructor sends it (or may fax it) to the OSC. A staff member in that office will then contact the student and schedule a meeting between the student and the OSC. An OSC staff member will also notify the Registrar of the pending case, and will institute a "disciplinary hold" preventing the student from dropping, adding, or registering in classes.

2. **If the student accepts responsibility:** If the student accepts responsibility, the OSC will contact the instructor and the instructor may impose an academic penalty up to failure of the course in which the student is enrolled. The OSC may also impose non-grade-related penalties ranging from reprimand to dismissal from the University.

3. **If the student does not responsibility:** If the student does not accept responsibility, the OSC will consult with the instructor to ascertain the instructor's preference as to the hearing type. The hearing may be a meeting between the instructor and the student or a meeting between the student and an Academic Integrity

Hearing Panel (AIHP). An Academic Integrity Hearing Panel will consist of three faculty members and two students, selected using procedures established by the Professional Concerns Committee of the Faculty Senate. The choice of hearing type is the instructor's. The OSC will set up the hearing and will notify the student and faculty member of its time, date, and location.

4. **If the student wants to appeal a finding of responsibility after a hearing with the instructor:** A student may appeal a finding of responsibility resulting from a hearing with the instructor to an Academic Integrity Hearing Panel within five University business days. The student cannot appeal after that time has elapsed.

5. **The authority of the Academic Integrity Hearing Panel:** An Academic Integrity Committee will conduct hearings to determine whether the student is responsible for academic dishonesty. An Academic Integrity Hearing Panel makes no decisions regarding the sanctions and/or grades to be imposed, either by the instructor or by the OSC.

6. **If a finding of "responsible" has been made:** A finding of "responsible" occurs when a student admits responsibility to the OSC, the instructor so decides, or an Academic Integrity Hearing Panel so decides by majority vote. The decision of the Academic Integrity Panel is final and may not be appealed. When that finding has occurred, the instructor may impose an academic penalty up to and including failure of the course in which the student is enrolled. A decision by the instructor regarding a grade penalty cannot be appealed by the student once the student has been found responsible and has exhausted or waived all appeals. Also, once the student has been found responsible and has exhausted or waived all appeals, that student's continued attendance in the relevant class depends on the penalty imposed by the instructor and/or the OSC. If the instructor determines to fail the student in the course, the student is not permitted to continue attending class. Again, following a finding of responsibility, the OSC may impose additional sanctions ranging from reprimand to dismissal from the University. In all cases when a final finding of responsibility has been made, the finding will be included in the student's educational record. Students will not be permitted to withdraw from a course to avoid imposition of any academic penalty.

7. **If a finding of "not responsible" has been made:** If a finding of "not responsible" has been made, the charge is dismissed and no penalties are imposed.

8. **While a case is pending:** A case is considered pending until one of two events occurs: (1) the student accepts responsibility or (2) the hearing process is completed. While a case is pending, the student has the right to attend and participate in the class. If the case is pending at the end of the semester, the instructor must assign an Incomplete grade and then submit a change of grade once the process is complete.

9. **Instructor unavailable to assign grade:** Circumstances may arise which may prevent an instructor from assigning a grade in a timely manner. In such instances, the academic unit chair/director will make reasonable efforts to contact and ask the instructor to supply a grade. If these efforts are unsuccessful, the instructor's academic unit chair/director will appoint another qualified faculty member to assign the grade.

Selection, Training, and Organization of Academic Integrity Committee (AIC)

An Academic Integrity Committee (AIC) will be drawn from a panel of faculty and students who are trained by the Office of Student Conduct (OSC). For each instance of an academic dishonesty charge which requires AIC review (see above), a five-member AIC composed of three faculty members and two students will be selected to hear the charge of academic dishonesty and to determine whether the charge has merit. Procedures for selection of a five-member AIC and, when required, AIC replacements from the AIC panel will be constructed and administered by the Professional Concerns Committee (PCC).

Each academic unit will elect one tenured or tenure-track faculty member to serve on the AIC panel. Student AIC panel members must be recommended by faculty, and each academic unit is asked to recommend one undergraduate and one graduate student to the OSC. Students recommended to the AIC panel will be screened by the OSC to ensure that no AIC student member has incurred a previous academic dishonesty sanction and that each AIC student member has a satisfactory disciplinary record.

Faculty members will serve three-year terms (with staggered terms for the first AIC panel, to ensure continuity of experience and training). Students will serve one-year terms with reappointment possible for up to a total of three years. It will be necessary to include on the panel those who can serve in the spring and summer.

For a charge against an undergraduate student, at least one student member of the panel shall be an undergraduate student. For a charge against a graduate student, at least on member of the panel shall be a graduate student. Each AIC will elect a faculty member to chair the committee, and, whenever possible, hearings should be conducted with a full panel. However, should extenuating circumstances arise (e.g., a panelist is ill), a hearing may be conducted with four members. When necessary, faculty and/or student members of an AIC may be replaced with AIC panel members selected by the PCC.

The Professional Concerns Committee (PCC) shall also function as an oversight committee for reviewing and monitoring all University policies and procedures dealing with academic conduct, including academic dishonesty, grade appeal and program dismissal issues. A report of all AIC activities shall be made to the Faculty Senate Executive Board each year by the PCC, and recommendations for changes in policies and procedures regarding academic conduct, including academic dishonesty, grade appeal and program dismissal issues, may be part of that annual report. Such recommendations may result in modifications to these procedures and policies.

Course Grade and Program Dismissal Appeals

Course Grade Appeals

This section applies when a student wants to appeal a final course grade that has been recorded by the Registrar on the student's academic record. Appeal panels are assembled from the faculty under the authority of and by the Provost and Vice President for Academic Affairs or designate. Throughout this process, the Office of the Ombuds is available to students and instructors for assistance on procedures and clarification of the rights of all parties.

The accepted bases of course grade appeal are:

A. Grades were calculated or the program dismissal decision was made in a manner inconsistent with the University policy, the syllabus, or changes to the syllabus.
B. The grade(s) was/were erroneously calculated.
C. Grading/performance standards were arbitrarily or unequally applied.
D. The instructor failed to assign or remove an Incomplete or to initiate a grade change as agreed upon with the student.
E. Late withdrawal from class(es), after grades have been assigned, due to genuine hardship. (Students appealing on this basis should proceed by contacting the Ombuds Office and following the procedures for hardship determination.)

A grade appeal cannot be made in response to a grade penalty assessed as a result of an official finding of responsibility for academic integrity violation(s). Such a finding will have been made through the procedures provided in the academic integrity policy.

The steps to be taken in appealing a grade are:

1. ***Informal meeting with instructor:*** A student is encouraged to begin the appeal process by meeting with the instructor who assigned the grade. Such meetings often help students understand the grading practices of instructors and often lead to resolution of differences over grades.
2. ***Written appeal and conference with the academic unit chair/director****:* A grade appeal must be in writing, in hard copy, and must be submitted to the academic unit chair/director. This appeal must be received by the academic unit chair/director within 60 business days of the last day of the semester or session in which the grade was recorded on a student's record. The Provost or designate may grant an extension should a genuine hardship arise (i.e., illness, death in the immediate family). The letter must identify the basis of the

appeal and must state in detail why the student believes the grade should be changed. Following a conference with the student, the chair/director must respond in writing to the student with a copy to the instructor, their dean, and the Grade and Program Dismissal Appeals Committee (GAPDAC) within 20 business days. In this letter, the chair/director should confirm the meeting with the student, recap their discussion, and state whether the student has an appeal which meets the established criteria (A, B, C, or D above). If the situation appears to meet the criteria for appeal, the chair/unit director may recommend that the instructor reevaluate the student's work. *The chair/director cannot change the student's grade without the instructor's agreement*. **Note:** Grade appeals or other complaints based on charges of discrimination or sexual harassment should be taken to the Office of Institutional Equity or other office, pursuant to other University policies and procedures.

3. ***Appeal to committee:*** After the chair has completed the response to the student's appeal, the student may appeal to the Grade and Program Dismissal Appeals Committee (GAPDAC). This appeal must be initiated within 20 business days completion of step 2. If the student has requested a meeting with the academic unit chair/director and has not been granted such a meeting within 40 business days of the student's request, the student may then initiate an appeal to GAPDAC.

   The student will initiate an appeal through the Office of the Ombuds. When the Ombuds receives an appeal, the Provost or designate will schedule a meeting of GAPDAC using procedures determined by the Professional Concerns Committee (PCC) of the Faculty Senate. The GAPDAC will consist of three members drawn from a pool of faculty established for this purpose. In a grade appeal, both the student(s) and the instructor should provide a written statement describing the situation under consideration. An appearance to provide additional information at the appeal by either the instructor or student(s) may be requested by the appeals committee. *A GAPDAC can effectuate a grade change by majority vote.* The decision of the hearing panel is final and not subject to appeal.
4. ***Instructor unavailable to assign grade:*** Circumstances may arise which may prevent an instructor from assigning a grade in a timely manner. In such instances, the academic unit chair/director will make reasonable efforts to contact and ask the instructor to supply a grade. If these efforts are unsuccessful, the instructor's academic chair/director will appoint another qualified faculty member to assign the grade.

Program Dismissal Appeals

This section applies when a student wants to appeal a decision to dismiss the student from an academic program for reasons other than charges of violations of academic integrity policies. Appeal panels are assembled under the authority of and by the designate of the Provost and Vice President for Academic Affairs. Throughout this process, the Office of the Ombuds is available to students and instructors for assistance on procedures and clarifications of the rights of all parties.

The accepted bases of program dismissal appeal are:

A. The program dismissal decision was made in a manner inconsistent with University policy or the program policy.
B. The program dismissal procedures were not followed.
C. Evaluation/performance standards were arbitrarily or unequally applied.

The student's status, as dismissed from the program, will remain unaltered until a successful appeal is completed.

A program dismissal appeal cannot be made in response to an academic integrity or conduct dismissal from the University.

NOTE: A program dismissal appeal based on charges of discrimination or sexual harassment should be taken to the Office of Institutional Equity or other office, pursuant to the other University policies and procedures.

NOTE: A program dismissal based on genuine hardship should be addressed according to the University hardship policies.

When appealing a program dismissal, a student must take the following steps:

1. Submit a letter requesting an appeal to the academic unit chair/director. This letter must be received by the academic unit chair/director within twenty business days of notice of dismissal from the program. The letter must identify the basis of the appeal and must state in detail why the student believes that dismissal should be reversed and schedule a conference with the department chair/director.
2. Following a conference with the student, the chair/director must respond in writing to the student with copies to the unit's dean, the graduate dean, and the Grade and Program Dismissal Appeals Committee (GAPDAC) within twenty business days. In the letter, the chair/director should confirm the meeting with the student, recap their discussion, and state whether the student has as appeal which meets the established criteria above. If the situation appears to meet the criteria for appeal, the chair/director may recommend readmission to the graduate dean.
3. Should the academic unit fail to provide a timely response or sustain the dismissal, the student may appeal directly to the graduate dean. The graduate dean will readmit the student or sustain dismissal, based on the academic unit's recommendation or the student's direct appeal, within ten business days.
4. Should the graduate dean uphold the dismissal, the student may appeal to GAPDAC. This appeal must be initiated within ten business days of the graduate dean's written decision. The student will initiate an appeal through the Office of the Ombudsman. When the appeal is received, the Provost or designate will schedule a meeting of GAPDAC using procedures determined by the Professional Concerns Committee of the Faculty Senate. The GAPDAC will consist of three members drawn from a panel of faculty established for this purpose. In a program dismissal, the student appellant should attend the meeting of the appeal panel and must provide a written statement describing the ground for appeal. A University representative from the program must attend the meeting and must provide a written statement describing the grounds for and circumstances of dismissal.

A GAPDAC may reverse or sustain a program dismissal by majority vote. The decision of the hearing panel is final and not subject to appeal.

Selection, Training, and Organization of Grade and Program Dismissal Appeal Committee (GAPDAC)

A Grade and Program Dismissal Appeal Committee (GAPDAC) will be drawn from a pool of faculty who are trained under procedures determined by the Professional Concerns Committee (PCC) of the Faculty Senate. For each appeal that requires review, a GAPDAC panel will be selected to hear the appeal and to decide the matter.

Each academic college shall provide a cohort of tenured or tenure-track faculty members to serve on the GAPDAC pool in proportion to its respective student credit hour production. Faculty members will serve three-year terms (with staggered terms for the first GAPDAC pools, to ensure continuity of experience and training). It will be necessary to include in the pool those who can serve during summer sessions.

Each GAPDAC shall be composed of three faculty members, at least one of whom is from the college where the course or program in question resides. Each GAPDAC will elect a faculty member to chair the committee, and each GAPDAC must have all three members present to have a quorum. Procedures for selection of a GAPDAC will be constructed and administered by the PCC.

Faculty Oversight of Grade and Program Dismissal Appeals Committees

The PCC shall function as an oversight committee for reviewing and monitoring all University policies and procedures dealing with grade and program dismissal appeal issues. A report of all GAPDAC activities shall be made to the Faculty Senate Executive Board each year by the PCC, and recommendations for changes in policies and procedures regarding grade and program dismissal appeal issues may be part of that annual report. Such recommendations may result in modifications to these policies and procedures.

Expedited Re-admission

If a student is dismissed for reasons other than active decision by an academic unit or the Office of Student Conduct, the student has the option to petition the academic unit (or graduate dean if a non-degree student) for expedited re-admission within ten business days of the dismissal notice. The chair/director of the academic unit shall, within ten business days, recommend to the graduate dean to re-admit the student immediately, to re-admit the student for a later enrollment period, or to sustain dismissal. For expedited re-admission recommendations, the academic unit may also recommend either Probation status or Extended Probation status to the graduate dean. (Probation status will allow the student up to two enrollments to achieve Good Standing, while Extended Probation will allow one enrollment). If the academic unit fails to make a timely recommendation, degree students may then petition the graduate dean directly. Decisions on expedited re-admission will be made by the graduate dean or designee within ten business days. Students denied expedited re-admission may still appeal their dismissal through the standard dismissal appeal process.

Should the graduate dean elect to re-admit the student on this expedited basis, a request should be made to the Office of the Registrar. If the student is to be re-admitted for a later enrollment period, the change should be made effective on a date which precludes registration in an earlier enrollment period.

Dissertation/Specialist Project/Thesis Appeals Procedure

If there are differences among the members of a dissertation/specialist project/thesis committee over the approval of the dissertation/specialist project/thesis and its oral defense, it shall be the responsibility of the committee to undertake every reasonable effort to resolve these differences and come to a unanimous decision.

In the event a student wishes to appeal a negative decision by the student's dissertation/specialist project/thesis committee, the student shall first take the appeal to this same committee, which shall hear the appeal and render a decision. In case the committee cannot reach a unanimous agreement and the student wishes to appeal further a negative decision, a Review Committee shall be established consisting of the dean of The Graduate College, the appropriate academic dean, and the chairperson or director of the unit. The Review Committee shall seek to resolve the controversy without passing on the dissertation/specialist project/thesis. The Review Committee handling such a case is limited to procedural actions, such as reconstituting the committee if the case merits it.

The Family Educational Rights and Privacy Act

The Office of the Registrar is the institution's official custodian of educational records. This office also holds the final responsibility in the enforcement of the Federal Educational Rights and Privacy Act of 1974 (FERPA). Maintaining confidentiality of educational records is the responsibility of all users whether the individuals are faculty, staff, or students. The Family Educational Rights and Privacy Act affords students certain rights with respect to their educational records. They are:

1. The right to inspect and review the student's educational records within 45 days of the date the University receives a request for access.

   Students should submit to the registrar, dean, head of the academic department, or other appropriate official, written requests that identify the record(s) they wish to inspect. The University official will make arrangements for access and notify the student of the time and place where the records may be inspected. If the records are not maintained by the University official to whom the request was submitted, that official shall advise the student of the correct official to whom the request should be addressed.

   An educational record is a record which is maintained by the institution directly related to a student, and from which a student can be identified. Educational records do not include the records of instructional, administrative, and educational personnel, which are in the sole possession of the maker and are not accessible or revealed to any individual except a temporary substitute, records of the law enforcement unit, student health records, employment records, or alumni records.

   Students may not inspect and review the following as outlined by the Act:

   - Financial information submitted by their parents
   - Confidential letters and recommendations associated with admissions, employment, or job placement.
   - Honors information to which they have waived their rights of inspection and review.
   - Educational records containing information about more than one student, in which case the institution will permit access only to that part of the record which pertains to the inquiring student.
2. The right to request the amendment of the student's educational records that the student believes are inaccurate, misleading, or otherwise in violation of the student's privacy rights.

   Students may ask the University to amend a record they believe is inaccurate or misleading. They should write the University official responsible for the records, clearly identifying the part of the record they want changed, and specify why it is inaccurate or misleading. If the University decides not to amend the record as requested by the student, the University will notify the student of the decision and advise the student of his or her right to a hearing regarding the request for amendment. Additional information regarding the hearing procedures will be provided to the student when notified of the right to a hearing.

3. The right to consent to disclosures of personally identifiable information contained in the student's educational records, except to the extent that FERPA authorizes disclosures without consent.

   One exception, which permits disclosure without consent, is disclosure to University officials with legitimate educational interests and/or needs to review an educational record in order to fulfill his or her professional responsibility. A University official for the purpose of this policy is defined as follows:

   - Members of the faculty
   - Members of the professional, executive and administrative staff, excluding any member of the WMU Police Department
   - Students, when properly appointed as members of a hearing panel or screening committee
   - Representatives of the State Auditor General when performing their legal function

- A person or company with whom the University has contracted (e.g., attorney, auditor, or collection agency) but limited to only the specific student information needed to fulfill their contract
- Others as designated in writing by the President, Vice President, or Dean
- Persons in compliance with a court order and to persons in an emergency in order to the protect the health or safety of students or other persons.
- Accrediting agencies performing an accreditation function

Upon request, Western Michigan University may disclose education records without consent to officials of another school in which a student seeks or intends to enroll, or where the student is already enrolled so long as the disclosure is for purposes related to the student's enrollment or transfer.

Another exception that permits disclosure without consent is when the information consists solely of "Directory Information." Directory Information may be published or released by University faculty and staff at their discretion. Unless a student specifically directs otherwise, as explained more fully in paragraph four (4) below, WMU designates all of the following categories of information about its students as "Directory Information."

Name
Address
Telephone number
Date and place of birth
Curriculum and major field of study
Dates of attendance
Enrollment status (full-time/part-time/three-quarter time)
Degrees/awards received
Most recent previous educational agency or institution attended by the student
Participation in officially recognized activities and sports
Weight and height of athletes

4. A student has the right to refuse the designation of all categories of personally identifiable information listed above as Directory Information. If a student exercises this right, it will mean that no Directory Information pertaining to the student will be published or otherwise released to third parties without consent, a court order or a subpoena.

   Any student wishing to exercise the right of withholding all categories of personally identifiable information must inform the Registrar's Office in writing by not later than the fifth day of the semester/session. A student's notification to withhold information will remain in effect until the student requests in writing that the prior withholding be revoked.

5. A student has the right to file a complaint with the U.S. Department of Education concerning alleged failures by WMU to comply with the requirements of FERPA. The name and address of the Office that administers FERPA is Family Policy Compliance Office, U.S. Department of Education, 600 Independence Avenue SW, Washington, D.C. 20202-4605.

Residency Policy of Western Michigan University

The entire residency policy of Western Michigan University is included in the "Tuition and Fees" section of this catalog.

Policies on Reporting Criminal and Unethical Activities

Western Michigan University Board of Trustees' Policy on Duty to Report Criminal Acts

- Whereas, the Western Michigan University Board of Trustees and president strongly believe that it is essential to provide a safe, ethical and protective environment for all members of the University community: and
- Whereas, the Board and president expect members of the campus community to always be vigilant for the well-being of colleagues, students and visitors and to be cognizant of the special needs of those populations the University serves that are particularly vulnerable to criminal abuse; and
- Whereas, the University has taken steps to ensure that all members of the University community have multiple ways to report possible criminal or ethical violations, including directly to the Department of Public Safety or anonymously through a secure website and phone line established through a well-respected external company;

Therefore, in furtherance of these principles, it is resolved that:

- It is the policy of Western Michigan University that all University employees, students, contractors, and other University-affiliated persons are charged with a duty to promptly report acts having any connection to the University that they in good faith believe could be criminal in nature. Such reports shall be made to the University's Department of Public Safety or through a secure website and phone line established for that purpose and publicized on campus.
- This policy is not intended to supersede or conflict with any other duty to report conduct as required by law or University policies, rules, requirements, and collective bargaining agreements. The president and board treasures are each empowered to enact additional requirements and procedures to effectuate this policy and make amendments as they deem appropriate in accordance with its purposes.

(Adopted by the WMU Board of Trustees Dec 8, 2011.)

President’s Statement on Reporting Illegal and Unethical Activities

(December 8, 2011)

"This has been a fall rife with scandal and underlying tragedy for individuals connected with two of our sister institutions - Penn State and Syracuse. I write to share my views and opinions about the shortcomings illustrated in those situations. This is a topic of discussion and deep concern among all of us on this and every campus in the nation.

In reflecting on these sad and appalling national stories, it is important to reaffirm what I believe are the core responsibilities of every citizen in our University and broader communities. Above and beyond any misplaced desire to protect or preserve the reputation of an individual or an organization, it is imperative that we all remember our primary obligation is to protect and defend those among us who are most vulnerable. In the long run, our reputation and strength as an institution will only be enhanced by our commitment to come to the aid of victims and discipline any individuals who take advantage of the positions of trust in which we have placed them.

If you encounter a situation in which you see someone being victimized, or you encounter something you believe to be a crime, call our Department of Public Safety. Do this first. Afterward you can inform your supervisor. Our public safety officers are trained to determine the facts of any incident. Simply call (269) 387-5555 to alert the proper officials.

As is sometimes the case in any large organization, there may be a time when you hesitate to report a crime, because you worry that you or your position may be vulnerable. Much earlier this year, we decided to enhance our ability to receive information from faculty and staff about possible wrongdoing in a way that would address such concerns. We now have a contract with a highly respected company called EthicsPoint that provides an anonymous website to

report possible criminal or ethical violations. There is also a phone line that can be used to report wrongdoing. We had intended to publicize this option after the coming holiday break, but because of the timely nature of this tool and a strong statement issued by our Board of Trustees today, I want you to know the system is already in place.

If you feel the need to maintain anonymity and report a situation that is legally or ethically wrong, you may do so by going to wmuhotline.ethicspoint.com, select Make a Report in the top right menu and follow the prompts. To use the phone line, call (855) 247-3145. I suspect - and hope - we may never need this tool, but am mindful that, at nearly 30,000, we are a community the size of a small city and we might have someone who does not meet our exacting standards.

Thank you in advance for your commitment to ensure everything we do is accomplished using the strongest moral, legal, and ethical standards."

Clery Act Annual Report

The Jeanne Clery Disclosure of Campus Security Policy and Campus Crime Statistics Act requires availability of the annual security and fire safety compliance document to prospective students, faculty, and staff. It can be obtained from the website of Western Michigan University Department of Public Safety wmudps.wmich.edu/AnnualSecurityReport.pdf.

You may request a hard copy version by calling (269) 387-5555. The report includes campus security and personal safety information as well as crime prevention, fire safety, university police law enforcement authority, crime reporting policies, disciplinary procedures and other matters related to security and safety of campus. It also includes crime reporting statistics for the previous three years concerning reported crimes that occurred on campus, in certain off-campus buildings, or properties owned or controlled by Western Michigan University, and on public property within or immediately adjacent to and accessible from the campus.

Western Michigan University Statements, Policies, and Procedures regarding Diversity, Multiculturalism, Inclusion and Non-Discrimination

President's Statement on Diversity, Multiculturalism, and Inclusion

(November 26, 2007)

"Great universities, including Western Michigan University, strive for an inclusive environment in which the student body, faculty, and staff reflect society at large. Western Michigan University has a long history and well-deserved reputation of being committed to diversity and multiculturalism. The university's programs, faculty, staff, and students reflect that commitment. Our welcoming environment is one to honor, preserve, and nurture.

Western Michigan University's development of a Diversity and Multicultural Action Plan (DMAP), adopted by the Board of Trustees in 2006, is a significant step in reinforcing our dedication to inclusion. It is a "living document" we will update and revise, based on input from the University community, those responsible for implementing it, and applicable law.

As the DMAP states, diversity at WMU "encompasses inclusion, acceptance, respect, and empowerment" and "includes the dimensions of race, ethnicity, and national and regional origins; sex, gender identity, and sexual orientation; socioeconomic status, age, physical attributes, and abilities; as well as religious, political, cultural, and intellectual ideologies and practices." The DMAP also points out that "multiculturalism at WMU is a belief that speaks to the issues of human diversity, cultural pluralism, and human rights for all people" and that it "goes beyond the recognition of diversity."

WMU's pledge toward inclusiveness is likewise reflected in the non-discrimination policy adopted by the Board of Trustees, which prohibits discrimination or harassment which violates the law or which constitutes inappropriate or unprofessional limitation of employment opportunity, University facility access, or participation in University activities, on the basis of race, color, religion, national origin, sex, sexual orientation, gender identity, age, protected disability, veteran status, height, weight, or marital status.

The University complies with applicable laws and regulations and pursues opportunities to engage in efforts within the law to maintain and support an environment that is welcoming to all.

The University promotes a diversity of ideas and intellectual inquiry, always with a steadfast dedication to discussions that are civil, courteous, and respectful. As an international university, WMU recruits students, faculty, and staff from throughout the world, ensuring that the entire University community is a better place as a result of its abundance of cultures and viewpoints.

To preserve and enhance its commitment to diversity and multiculturalism, the University must continue to recruit and retain faculty, staff, and students who understand and appreciate the importance of inclusion. The university must also foster and support programs and projects that help the entire University community appreciate and value the benefits that come from being part of a campus where all are welcomed.

The University's prosperity and future successes will be measured, in part, by the degree to which it is inclusive and respectful of those it serves. I ask you to join me in taking a personal interest to do what we can so that all within the University community know that they are welcomed and supported. Together we will do so with conviction and by taking action that is consistent with the values of a great university -one that honors and respects the customs, cultures, and opinions found on a diverse and multicultural campus that is rich in the composition of its people and ideas. . ."

In order to sustain WMU's long history of diversity efforts and to improve the inclusive nature of WMU's campus community, the Office of Diversity was established in 2007. This office is responsible for numerous duties including

but not limited to implementation of the Diversity and Multiculturalism Action Plan (DMAP); management of the University affairs for the Kalamazoo Promise; planning of the annual Martin Luther King Jr. Convocation; support for community development activities relating to recruitment of students of all levels, identities, and backgrounds; and other projects as directed by the president. All members of the University community are asked to give their cooperation and assistance in these efforts.

Non-Discrimination Policy

Western Michigan University prohibits discrimination or harassment which violates the law or which constitutes inappropriate or unprofessional limitation of employment opportunity, University facility access, or participation in University activities, on the basis of race, color, religion, national origin, sex, sexual orientation, gender identity, age, protected disability, veteran status, height, weight, or marital status.

For inquiries regarding the non-discrimination policy, contact:

Institutional Equity
1220 Trimpe
(269) 387-6316
wmich.edu/equity

WMU Sexual and Gender-Based Harassment and Violence, Intimate Partner Violence, and Stalking Policy and Procedures ("Sexual Misconduct Policy")

Western Michigan University encourages all members of our community to participate in the process of creating a safe, welcoming and respectful environment on campus. Western Michigan University is committed to an environment that is safe and free from sex and gender based discrimination, including all forms of sexual and gender based harassment and sexual violence, for all members of the campus community. Title IX of the Education Amendments Act of 1972, Title VII of the Civil Rights Act of 1964 and the Elliot-Larson Civil Rights Act, as amended, prohibit discrimination on the basis of sex and gender identity in both the workplace and educational programs and activities. With the Sexual and Gender-Based Harassment and Violence, Intimate Partner Violence, and Stalking Policy and Procedures, we affirm the commitment of the university and our community to the values of transparency and timely communication, and accountable and responsible behavior within an ethical, compassionate, diverse and respectful environment.

All University students, faculty, and staff are subject to the University's Sexual Misconduct Policy. The policy, procedures, and campus and community resources may be found at: wmich.edu/sexualmisconduct

For inquiries regarding the Sexual Misconduct Policy, contact:

Title IX Coordinator
1220 Trimpe
(269) 387-6316

Minors on Campus

In 2013, the WMU Board of Trustees passed the following policy regarding programs and activities involving minors:

Policy on Western Michigan University Programs and Activities Involving Minors

Whereas, the Western Michigan University Board of Trustees and President continue their strong commitment to provide a safe, ethical, and protective environment for all members of the University community; and

Whereas, the WMU Board of Trustees and President are in the forefront of taking action steps in their commitment and have adopted numerous policies, requirements, and procedures; and

Whereas, the WMU Board and President also recognize that University collaborations, programs, and activities involving minors provide countless educational, nurturing, personal, and enriching opportunities for minors; and

Whereas these opportunities are sought and encouraged by many local, state, and national entities, as well as by parents and guardians; and

Whereas, in addition to the steps already taken by the Board and President that currently serve to protect minors involved in programs and activities on campus, the Board of Trustees and President of Western Michigan University wish to take still further steps in this regard:

Therefore, it is resolved that:

It is the policy of Western Michigan University that all existing and future University programs and activities involving minors be developed and administered so as to:

1. Provide safe and protective environments for participation of minors; and
2. Mandate compliance with policies and requirements enacted by the Board, President, and the administration, including WMU's Duty to Report Criminal Acts policy, the President's Statement on Reporting Illegal and Unethical Activities, and EthicsPoints reporting procedures; and
3. Require appropriate training for those WMU employees, students, and volunteers that come in direct contact with minors in these University programs and activities, which includes training on reporting of child abuse as mandated or allowed under state law.

This policy is not intended to supersede or conflict with law or collective bargaining agreements. The administration is also authorized to enact additional requirements and procedures to effectuate this Board policy, including but not limited to mandating criminal background check procedures as deemed appropriate for the particular program or activity.

The University has a website with considerable information regarding programs and activities involving minors wmich.edu/legal/minors-on-campus If you are considering or are involved in any such programs and activities involving minors, the policy and the information on this website will assist locating the applicable University requirements in this regard.

Western Michigan University's *Student Code*

Western Michigan University is a student-centered research university, building intellectual inquiry, investigation, and discovery into all undergraduate, graduate, and professional programs. The university provides leadership in teaching, research, learning, and public service. Nationally recognized and internationally engaged, the University:

Forges a responsive and ethical academic community
Develops foundations for achievement in pluralistic societies
Incorporates participation from diverse individuals in decision-making
Contributes to technological and economic development
Engenders an awareness and appreciation of the arts

The *Student Code* and the Office of Student Conduct are tangible examples that illustrate commitment to these ideals. The *Student Code* describes the boundaries of acceptable student behavior and is approved by the Board of Trustees. The Office of Student Conduct interprets and enforces the *Student Code*.

A student who chooses to enroll at Western Michigan University assumes the obligation for conduct that is compatible with the University's mission as an educational institution. While students have the privilege to enroll at the institution of their choice, choosing to enroll at Western Michigan University requires a student to become aware of, and to abide by the behavior standards of the University. Ignorance of acceptable boundaries of student behavior as contained in the *Student Code* is not a basis for excusing inappropriate behavior.

The University conduct process is not analogous to, is not equivalent to, and does not conform to, criminal law processes. This process is designed, in part, to determine responsibility, or lack thereof, for violations of the *Student Code* only—not guilt or innocence relative to criminal matters. The University conduct process shall be informal in nature so as to provide substantial justice and it shall not be bound by the same proceedings, definitions, or rules which apply in the courts of law.

The conduct of students in the educational community is a part of the teaching process and as such, its focus shall be educational. This includes the possible use of suspension or expulsion as disciplinary measures as they may prove invaluable tools in the education of the University community. The student conduct system is not only concerned with the individual student's welfare, but also the welfare of the University community. Any question about the processes, rules, or policies, or any other concern not specifically covered by the *Student Code* shall be decided solely by the Dean/Associate Dean of Students/ or designee. Additionally, the *Student Code* provisions may be extended or amended to apply to new and unanticipated situations which may arise.

Enrollment in the University does not insulate students from their obligation to behave in a manner consistent with local, state, and federal law. Violation of local, state, and federal law while on University premises may also constitute a violation of the *Student Code*. Some of the policies referred to in the *Student Code* may also constitute violations of local, state, or federal law and carry the possibility of criminal prosecution or civil legal action.

While the University does not desire to act as a policing authority for the activities of the student off of University premises, the University may take appropriate action in situations involving misconduct demonstrating flagrant disregard for any person or persons, and/or when a student's or student organization's behavior is judged to threaten the health, safety, and/or property of any individual or group even when the misconduct occurs off University premises.

While any violation of the *Student Code* is considered a serious matter, certain violations are considered to be especially egregious. These violations include acts of academic misconduct, any act that disrupts the functions of the University, and any act that threatens the health or safety of any member of the University community or any other person. Students involved in these activities are considered a threat to the orderly functioning of the University, and their behavior is considered detrimental to the educational mission.

Western Michigan University Expectations for Good Practice in Graduate Education

The Mission of WMU

Western Michigan University is a student-centered research university, building intellectual inquiry, investigation, and discovery into all undergraduate, graduate, and professional programs. The university provides leadership in teaching, research, learning, and public service. Nationally recognized and internationally engaged, the University:

- Forges a responsive and ethical academic community
- Develops foundations for achievement in pluralistic societies
- Incorporates participation from diverse individuals in decision-making
- Contributes to technological and economic development
- Engenders an awareness and appreciation of the arts

Graduate education at WMU encompasses all of these goals and strives to provide students an environment that fosters scholarship, independent judgment, academic rigor, and intellectual honesty.

Professional Rights of Graduate Student Appointees

A portion of students at Western Michigan University has been granted graduate appointments. These graduate appointees serve an academic or service unit within the university. In return for their service they are given a salary, and partial or full tuition remission. Graduate appointees, in addition to having the basic and academic rights mentioned below, also have professional rights. These include meaningful teaching, research, or service responsibilities; clear and reasonable departmental expectations; work activities that average twenty hours per week for a full appointee; approved leaves of absence; and due process in regard to service disputes. The rights of teaching assistants are specifically given in the 2012-15 Agreement between Western Michigan University and the Teaching Assistants Union www.tauaft.org

Student Rights and Responsibilities

Basic and academic rights and responsibilities are set forth in the Graduate Catalog, the Research Misconduct Policy www.wmich.edu/research/policies/misconduct, the *Student Code of Conduct* www.wmich.edu/conduct/code, and other policies of Western Michigan University. Basic rights include, but are not limited to, the rights of inquiry, expression, and association; freedom from discrimination and harassment; personal security; freedom from improper disclosure; access to personal records; and participation in university governance. Academic rights include, but are not limited to, the right to be evaluated fairly; to have academic freedom in discussing their subject; to be fully informed by faculty regarding the requirements of each class and course of study; and to have access to and explanations of all graded materials.

Student Responsibilities

Along with rights come responsibilities. Students at WMU are required to conduct themselves in a mature, professional, ethical, and civil manner. This includes engaging in academic honesty and ethical research conduct. In the academic arena, students are expected not to engage in such behaviors as cheating; fabrication, falsification, or forgery; multiple submissions; plagiarism; computer misuse; and complicity with others regarding such offenses. While conducting research, students are expected to maintain the same standards as they apply to the design of studies, treatment of subjects, collection of data, and reporting of that data. A complete listing of responsibilities is detailed in university policies.

Graduate students must:

- Conduct themselves appropriately in all interactions with faculty and staff in accordance with the accepted standards of the discipline and WMU policies governing discrimination and harassment.

- Take primary responsibility to inform themselves of regulations, rules, and policies governing their graduate studies and research at WMU.
- Recognize that faculty and staff have many professional responsibilities, in addition to graduate education.
- Recognize that the faculty have broad discretion to allocate their own time and other resources in ways that are academically productive.
- Recognize that the faculty advisor, who provides the intellectual and instructional environment in which that student plans a program of study, may be involved with research for which the student provides assistance, and that the University, through the faculty advisor's access to teaching and research funds, may also provide the student with special financial support for that research.
- Expect that a student's research results, with the appropriate recognition, may be incorporated into progress reports, summary documents, applications for continuation for funding, and similar documents authored by the faculty advisor.
- Recognize that the faculty advisor is responsible for monitoring the accuracy, creativity, validity, and integrity of the student's research. Careful, well conceived research reflects favorably on the student, the faculty advisor, the degree program, and WMU.
- Exercise the highest integrity in taking examinations, completing master's, specialist's, and doctoral projects, and/or collecting, analyzing, and presenting research data in theses, dissertations, and presentations.
- As applicable to the student's degree program, acknowledge contributions of the faculty advisor and other members of the research team to the student's work in all publications and conference presentations; acknowledgement may mean co-authorship when that is appropriate.
- Recognize that in some disciplines, the faculty advisor will determine when a body of work is ready for publication, exhibition or performance, and is an acceptable product, since the faculty advisor bears responsibility for overseeing the performance of the students and ensuring the validity of any applicable research.
- Maintain the confidentiality of the faculty advisor's professional activities and research prior to presentations and/or publication, in accordance with existing practices and policies of the discipline and the University.
- Be allowed the opportunity to participate in the governance of the University as designated by the Graduate Student Association for representation on the councils of the Faculty Senate. They shall also have representation at the departmental level, in faculty meetings and on standing committees, (e.g., policy, hiring, graduate issues) except in cases where confidential personnel matters are under consideration.
- When serving as teaching assistants, abide by the academic regulations of the University and be afforded the rights of an instructor, including the protection of academic freedom.
- Cooperate and assist in any investigations as requested by the University.

Correspondingly, it is imperative that faculty:

- Interact with students in a professional and civil manner in accordance with the accepted standards of the discipline and Western Michigan University's policies governing discrimination and harassment.
- Impartially evaluate student performance, regardless of the graduate student's religion, race, gender, sexual orientation, nationality or other criteria as established by law, the collective bargaining agreement, and/or University policies.
- Serve on graduate student committees without regard to the religion, race, gender, sexual orientation, nationality, or other criteria as established by law, the collective bargaining agreement, and/or University policies.
- Prevent personal rivalries with colleagues from interfering with their duties as graduate advisors, committee members, directors of graduate studies, or colleagues.
- Avoid dual relationships that could impair their professional judgment. They will excuse themselves from serving as advisors on graduate committees or supervising assistantship work when there is a financial, familial, friendship, or other close personal relationship that could result in a conflict of interest.
- Acknowledge any student contributions to research and/or creative activity presented at conferences, in professional publications, or in applications for copyrights and patents.

- Not impede a graduate student's progress and completion of his/her degree in order to benefit from the student's proficiency as a teaching or research assistant.
- Create in the classroom, lab, or studio, supervisory relations with students that stimulate and encourage students to learn creatively and independently.
- Have a clear understanding with graduate students about their specific academic, creative activity, and/or research responsibilities, including time lines for completion of comprehensive examinations, research, and the thesis or dissertation, as applicable.
- Provide oral and written comments and evaluation of each student's work in a timely manner.
- Assist the departmental director of graduate studies in an annual review of graduate students' progress.
- Discuss laboratory, departmental and authorship policy with graduate students in advance of entering into collaborative projects.
- Ensure an absence of coercion with regard to the participation of graduate students as human research subjects in their faculty advisors' research.
- Be aware of the responsibilities inherent in the faculty-student relationship and avoid dual relationships that may exploit students by virtue of their authority. Faculty who have a direct teaching or advising relationship with a student are prohibited from requesting that a student do personal work (mowing lawns, babysitting, etc.) with or without appropriate compensation.
- Familiarize themselves with policies that affect their graduate students.
- Evaluate students' progress and performance in regular and informative ways consistent with timely completion of the degree.
- Cooperate and assist in any investigations as requested by the University.

Transmission of Knowledge in Graduate Education

Graduate education is structured around the generation and transmission of knowledge at the highest level. In many cases, graduate students depend upon faculty advisors to assist them in identifying and gaining access to financial and/or intellectual resources that support their graduate programs. In addition, faculty advisors and department administrators must apprise students of the "job market" so that students can develop realistic expectations for the outcomes of their studies.

In some academic units, the student's specific advisor may change during the course of the student's program. The role of advising may also change and become a mentoring relationship.

The reward of finding a faculty advisor implies that the student has achieved a level of excellence and sophistication in the field or exhibits sufficient promise to merit the more intensive interest, instruction, and counsel of faculty.

To this end, graduate students must:

- Devote an appropriate amount of time and energy toward achieving academic excellence and earning an advanced degree.
- Be aware of time constraints and other demands imposed on faculty members and program staff.
- Take the initiative to ask questions that promote understanding of the academic subjects and advances in the field.
- Communicate regularly with faculty advisors, particularly in matters related to research and progress within the graduate program and with any teaching responsibilities.

Correspondingly, faculty advisors should:

- Provide clear guidelines for all requirements each student must meet, including course work, languages, research tools, examinations, and thesis or dissertation, teaching/laboratory assistantships, and delineating the amount of time expected to complete each step.
- Evaluate student progress and performance in regular and informative ways consistent with the practice in the field.

- Help students develop interpretive, writing, oral, and quantitative skills, in accordance with the expectations of the discipline and the specific degree program.
- Assist graduate students in the development of grant writing skills, where appropriate.
- Take reasonable measures to ensure that graduate students who initiate thesis or dissertation research/creative activity do so in a timely fashion, regardless of the overall demand of assistantships in the laboratory, studio, or classroom.
- When appropriate, encourage graduate students to participate in professional meetings or display their work in public forums and exhibitions.
- Stimulate in each graduate student an appreciation of professional skills they will be required to master in their respective disciplines, i.e., teaching, administration, research, writing, and creativity.
- Create an ethos of collegiality so that learning takes place within a community of scholars.

In academic units, faculty advisors support the academic promise of graduate students in their programs. In some cases, academic advisors are assigned to entering graduate students to assist them in academic advising and other matters. In other cases, students select faculty advisors in accordance with the disciplinary interest or research expertise of faculty. Advising is variant in its scope and breadth and may be accomplished in many ways.

A student's academic performance and faculty member's scholarly interest may coincide during the course of instruction and research/creative activity/performance. As the faculty-graduate student relationship matures and intensifies, direct collaboration may involve the sharing of authorship or right to intellectual property developed in research or other creative activity. Such collaborations are encouraged and are a desired outcome of the mentoring process.

It is understood that the standards of mentoring may differ by department, depending on the degrees students are pursuing and the availability of the time that students who work as professionals in communities outside Kalamazoo have to consult with their advisors. Nevertheless, it is recommended that advisement, consultation and mentoring be nurtured via electronic means if they cannot be nurtured in person.

It is further understood that the department must establish appropriate policies and practices to assist students whose major advisor or committee member is no longer able to serve in that capacity. Graduate students assigned to participate in externally funded research grants must become aware of the special importance of completing their research commitments. These commitments extend beyond financial concerns to encompass issues of professional ethics, legal compliance with external authorities, and institutional loyalty.

Note: Western Michigan University wishes to thank the University of Missouri at Columbia for permission to use portions of their graduate code.

Western Michigan University Adjudication of Situations Involving Graduate Students' Rights and Responsibilities

1.0 Academic Rights and Responsibilities

Whenever a graduate student has been accused of behavior that is in violation of academic regulations, the existing Graduate Catalog governs the adjudication of the accusation.

2.0 Basic Rights and Responsibilities

Whenever a graduate student has been accused of behavior that is in violation of non-academic regulations, the University *Student Code* governs the adjudication. The Research Misconduct Policy governs the adjudication of alleged violations of ethical research behavior.

In addition to the rights and responsibilities of all graduate students, there are rights and responsibilities that pertain specifically to graduate students who are serving on appointments. These appointments include doctoral associateships, doctoral fellowships, graduate assistantships, and graduate fellowships. Because of the special nature of the relationship between a graduate appointee and the faculty members in the department being served, there are additional requirements.

3.0 Professional Rights and Responsibilities of Graduate Appointees

This resolution process governs matters other than those governed by the Graduate Catalog, the *Student Code* and/or the Research Misconduct Policy.

Graduate appointees serve the University through appointments that are awarded by the departments/schools under the sponsorship of Academic Affairs and the Graduate College. Therefore, the path to resolving certain disputes resides first with the department/school and next with the Graduate College.

For graduate appointees with a teaching classification, the terms of the 2012-15 Agreement between Western Michigan University and the Teaching Assistants Union (www.tauaft.org) regarding grievance and arbitration procedures (Article 16) will supersede the policy given below.

3.1 Departmental/School Level. Resolution of issues at the departmental/school level may be handled informally. If disputes arise between graduate appointees and their departments, both should attempt to resolve them in informal, direct discussions. If the problem remains unresolved, then the unit administrator should be consulted. If still aggrieved, a student may then submit a formal, written request for consideration by the Department/School Hearing Board. The Department/School Hearing Board shall be comprised of the unit administrator or designee, two faculty members, and two graduate students from the department. The faculty members are to be selected by the department. One graduate student is to be selected by the departmental graduate student organization and a second graduate student by the Graduate Student Association. Where no departmental graduate student organization exists, both students will be selected by the Graduate Student Association. If the unit administrator is directly involved in the case, neither the unit administrator nor the designee may serve on the hearing board. In such cases, the office of the Dean of the Graduate College will appoint a replacement member.

3.2 Graduate College Level. The Graduate College shall establish a hearing board comprised of a representative of the Academic College as designated by the Dean of that College, the Dean of the Graduate College or designee, the Chair of the Graduate Student Advisory Committee or designee, one faculty member from the department in question, and one student chosen by the Graduate Student Advisory Committee.

3.3 A member who has faculty rank from a unit not involved with the dispute shall chair each hearing board.

3.4 Term of Office. Hearing board members at both levels shall be selected in the fall of the year and shall serve one year. The one-year term shall not preclude reappointment of any member the following year.

3.5 The formal request alleging violations of professional rights must include a proposed remedy that could be implemented by a responsible administrator. The Department/School, within the limits of its resources and the limits imposed by due respect for the professional rights of the faculty, seeks an appropriate remedy for legitimate student complaints.

3.6 Written requests for a hearing must be initiated no later than mid-term of the semester or the end of the session following the term wherein the alleged violation occurred. The appropriate Hearing Board may grant an exception to this provision if the involved party or student is absent from the University during that session.

3.7 The student initiating the grievance may request the hearing at the Department/School level. Under special circumstances (with approval of the Graduate College) the resolution of an issue may begin at the Graduate College level.

3.8 Hearing Boards shall establish their own procedures in a manner consistent with this document. A copy of the procedures adopted by each unit shall be filed with the appropriate Dean's office and with the office of the Dean of the Graduate College.

3.9 Upon receipt of a formal request, the chairperson of the Hearing Board shall transmit a copy of the grievance within ten (10) class days to the Hearing Board members and to the person(s) party to the matter.

3.10 In urgent cases in which it is alleged that a regulation, administrative decision or action threatens immediate and irreparable damage to any of the parties involved, the Hearing Board or judiciary shall expedite the hearing and final disposition of the case.

3.11 A Hearing Board or judiciary is empowered to act on a request to direct an individual or unit to discontinue or postpone an administrative decision or action that threatens immediate and irreparable damage to any of the parties involved, pending final disposition of the case. The Hearing Board shall expedite the hearing and final disposition of this urgent case.

3.12 A Department/School or college Hearing Board shall review each hearing request for jurisdiction and judicial merit and may then forward a copy of the request to the appropriate individual and invite a written response. After considering all submitted information, the board may:

a. Accept the request, in full or in part, and proceed to schedule a hearing.
b. Reject the request and provide an appropriate explanation.
c. Invite all parties to meet with the board for an informal discussion of the issues. Such a discussion shall not preclude a later hearing.

3.13 Notice of hearing. At least three (3) days prior to a formal hearing, both the respondent and the complainant shall be entitled to a written notification of the hearing from the appropriate hearing body. This notice of hearing shall state:

a. The nature of the issues, charges and/or conflicts to be heard with sufficient particularity to enable both the respondent and the complainant to prepare their respective cases.
b. The date, time and place of the hearing.
c. The body adjudicating the case.
d. The names of the respondent and complainant.
e. The name(s) of any potential witnesses.

3.14 Either the complainant or the respondent may request, with cause, a postponement prior to the scheduled time of a hearing. The Hearing Board may grant or deny such a request.

3.15 Both the respondent and the complainant shall be expected to appear at the hearing and present their cases.

a. Should the complainant fail to appear, the board may either postpone the hearing or dismiss the case.
b. Should the respondent fail to appear, the board may either postpone the hearing if good cause has been given for the failure to appear or hear the case in his or her absence.
c. The judiciary may accept written statements from a party to the hearing in lieu of a personal appearance, but only in unusual circumstances. Such written statements must be submitted to the board at least one (1) day prior to the scheduled hearing.

3.16 Hearing Boards shall ensure that a collegial atmosphere prevails in hearings. Involvement of counsel should normally not be required. When present, counsel shall be limited to a member of the student body, faculty, or staff of the University.

3.17 During the hearing, parties to a complaint shall have an opportunity to state their cases, present evidence, designate witnesses, ask questions, and present a rebuttal.

3.18 The Hearing Board shall prepare a written report of findings and rationale for the decision and shall forward copies to the parties involved, to the responsible administrator(s), and to the Dean of the Graduate College. The report shall indicate the major elements of evidence, or lack thereof, which support the Hearing Board's decision. All recipients are expected to respect the confidentiality of this report. When a Hearing Board finds that a violation of professional rights has occurred and that redress is possible, it shall direct the responsible administrator to provide redress. The administrator, in consultation with the hearing board, shall implement an appropriate remedy.

3.19 Appeals. The decision of the original Hearing Board is final, except in cases which result in a recommendation of termination of appointment. In such cases the decision may be appealed by either party to a grievance only to the next level hearing board. If the original hearing was by a Department/School Hearing Board, the appeal shall be made to the Graduate College Hearing Board. If the original hearing was by the Graduate College Hearing Board, the appeal should be made to the Graduate Studies Council. In such cases, a subcommittee of the Graduate Studies Council shall be appointed by the chair of the council and shall include the chair as well as one council member and a graduate student serving on the council.

3.20 Appeals must allege either that applicable procedures for adjudicating the case were not followed in the previous hearing or that the findings of the Hearing Board were not supported by the preponderance of the evidence. Presentation of new evidence will not be permitted at an appeal hearing. All appeals must be written and signed and must specify the alleged defects in the previous adjudication(s) in sufficient detail to justify further proceedings. The appeal must also specify the redress that is sought.

3.21 Appeals must be filed within ten (10) class days following a notice of a decision. Any action regarding the original decision shall be held in abeyance while under appeal.

3.22 The appellate board shall review each appeal request and may then forward a copy of the request to the appropriate individual and invite a written response. After considering all submitted information, the appellate board may

a. Decide that sufficient reasons for an appeal do not exist and that the decision of the lower hearing body shall stand;
b. Direct the lower hearing body to rehear the case or to reconsider or clarify its decision; or
c. Decide that sufficient reasons exist for an appeal and accept the request, in full or in part, and proceed to schedule an appeal hearing.

3.23 Following an appeal hearing, an appellate board may affirm, reverse, or modify the decision of the lower hearing body.

3.24 Any intimidation or retaliation against a graduate student, including but not limited to actions which negatively impact the student's grades or appointment status, solely for raising an issue concerning his/her appointment, questioning assignments or duties, and/or initiating or participating in proceedings under this policy, is strictly forbidden. Any person confirmed to have so intimidated or retaliated will be subject to disciplinary action, up to and including termination.

3.25 Nothing in this process shall be construed to be considered a contract between the graduate student and the University, and/or to supersede or negate other University policies, procedures, and/or contractual requirements.

Note: Western Michigan University wishes to thank Michigan State University for permission to adapt portions of their graduate adjudication process.

University and Student Services

Complete and current information about University and Student Services may be obtained by visiting the University's website (http://www.wmich.edu/). The services listed below are only a portion of those offered by the University to students, alumni, staff, and visitors. University and student services in this section of the catalog may not be available in all regional locations including Florida locations.

Archives

The University Archives and Regional History Collections are located in the Charles C. and Lynn L. Zhang Legacy Collections Center on the Oakland Drive Campus. Staff collect, preserve, and make accessible records documenting the history of the University and of twelve southwestern Michigan counties. Holdings include: books, ephemera, newspapers, microfilm, photographs, oral history tapes, and manuscript collections. In addition, local public records from southwestern Michigan are on deposit from the Archives of Michigan. The collections are open to researchers. Faculty, staff, and students may make appointments for assistance with research. Faculty may schedule instructional sessions. Call (269) 387-8490 for information.

Athletics, Intercollegiate

The University is represented by men's teams in football, baseball, basketball, tennis, ice hockey, and soccer. Women's teams represent the University in basketball, cross country, golf, gymnastics, softball, tennis, indoor and outdoor track, soccer, and volleyball. Represented by the athletics mascot "Buster Bronco," WMU Athletics keeps every Bronco fan up to date through the official athletics website, www.wmubroncos.com

Athletics are governed by the Athletic Board, which adheres to the policies and principles established by the National Collegiate Athletic Association (NCAA), Mid-American Conference (MAC) and National Collegiate Hockey Conference (NCHC). Western Michigan University is a member of the Mid-American Conference in all sports but Ice Hockey. Ice Hockey members are WMU, Colorado College, Denver, Miami (Ohio), Minnesota-Duluth, Nebraska-Omaha, North Dakota and St. Cloud State. Other members of the Mid-American Conference are Akron, Ball State, Bowling Green, Buffalo, Central Michigan, Eastern Michigan, Kent State, Miami (Ohio), Northern Illinois, Ohio, and Toledo.

Career and Student Employment Services

Career and Student Employment Services advises students regarding skill development, exploring career options and obtaining experience through employment. Services include drop-in career advising at the Career Zone, job listings for part-time, internship and full-time employment. The office facilitates regular employer and alumni campus visits to participate in career fairs, visit classrooms and provide mock interviews for students. Staff conduct workshops and seminars addressing current job market issues, linking academics to career paths, finding an internship or trending job search strategies.

Career Services may be offered at WMU, but employment is not guaranteed.

For more information visit the Career Zone, M-F 12-5 p.m., or to schedule an appointment, call (269) 387-2745. The office is located on first floor of Ellsworth Hall. www.wmich.edu/career.

Children's Place Learning Center

The Children's Place Learning Center, located in the middle of campus at 2210 Wilbur, is open from 7:00 a.m. to 6:00 p.m. weekdays. The convenient location and flexible care schedules make the center an attractive child-care option for WMU faculty, staff, and students. Children 15 months to 12 years old may be enrolled full-time or part-

time. Breakfast, lunch, and snacks are included in the tuition and are provided by WMU Dining Services. A full vegetarian menu is available each day.

The Children's Place philosophy emphasizes child-initiated learning within a culturally diverse community. The program nurtures and supports the development of children by providing a developmental play-based curriculum focusing on the emerging skills of each child. The program provides an environment in which each child and family feels respected and accepted and creates a connection between home and school to meet the unique needs of the families. The program is licensed by the State of Michigan, and accredited by the National Association for the Education of Young Children (NAEYC) and an approved site for the Great Start Readiness Program and Kalamazoo County Ready 4s. For more information and an application call (269) 387-2277 or visit www.wmich.edu/childcare.

Counseling Services

Counseling Services provides short-term individual, couples and group counseling for a diverse student population. The counseling process can help students learn skills to cope with problems and develop new ways of thinking, which may lead to a healthier and more fulfilling lifestyle. Your time at Western Michigan University may include stress, complicated decisions or challenging situations. Counselors help students identify challenges and make changes to manage the emotional and social difficulties that might complicate college life.

How we work with you
Every student is unique, so we tailor our services to suit your particular needs. We collaborate with other clinicians at Sindecuse or outside care professionals to ensure counseling supports other care you receive.
We take a holistic approach when working with you to treat the whole person. Our counselors are licensed mental health professionals and graduate student trainees under close supervision.

Your first visit
An initial appointment may be made by stopping by the reception desk of Sindecuse Health Center. When you first come to the health center, you'll start with the receptionist on the main floor, check in at registration and then come upstairs to Counseling Services. **Intake hours are Mondays, Tuesdays, Wednesdays and Fridays from 8 a.m. until 4 p.m. and Thursday from 9 a.m. until 4 p.m.** Counseling Services is open between 8 a.m. and 5 p.m. on Mondays, Tuesdays, Wednesdays and Fridays and between 9 a.m. and 5 p.m. on Thursdays. Website: www.wmich.edu/counseling.

Eligibility
Counseling services are available to all enrolled WMU students with full- or part-time status, including those at regional campuses.

Confidentiality
Counseling Services respects your right to privacy. Your consent is required before any information is released to a third party. In accordance with the Health Insurance Portability and Accountability Act of 1996 (HIPAA), patient health information is maintained in confidence throughout Sindecuse Health Center and Counseling Services. Here is the privacy policy.

Counseling Services is committed to the need for confidentiality in client/counselor communication. Therefore, confidentiality of client information is maintained in a manner consistent with professional standards of ethical practice and conduct and legislative requirements in the state of Michigan. Copies of the Sindecuse Health Center policy on confidentiality may be obtained at the business office.

Disability Services for Students

Disability Services for Students advocates for and supports Western Michigan University students with disabilities as they seek to find effective accommodations, maximize their abilities and gain independence. DSS offers university services including advocacy, registration assistance, campus accessibility information, and referral to and liaison with other campus and community agencies. DSS may also provide classroom or academic adjustments including accommodation for classroom test, electronic text format and ASL sign-language interpreters. DSS can

also provide short-term temporary on-campus transportation to students with mobility issues. DSS offices also house the Autism Services Center and a rehabilitation counselor from the Bureau of Services for Blind Persons.

www.wmich.edu/disabilityservices (269)387-2116
wmich.edu/autism/asc (269) 387-4349
www.michigan.gov/bsbp (269) 330-5336

Housing

Western Michigan University students may live on or off campus. Various housing options exist on-campus, ranging from traditional residence halls to apartment living, and all deliver tremendous value to their residents. Besides the convenience of living in the heart of campus, studies show students who live on campus adjust better and are more successful academically than those who live off campus. For these reasons, students should carefully consider the benefits of on-campus housing when choosing where to live.

Your residence hall application and apartment applications are available online and can be completed once you have been admitted and have a valid Bronco ID. The application date is the basis for assignment and the probability of an assignment increases with early application.

WMU Residence Halls, Spindler Hall, WMU Apartments (including the Western View)

For information contact Residence Life, 3510 Faunce Student Services Building, Western Michigan University, Kalamazoo, MI 49008-5312. Telephone: (269) 387-4735; Fax: (269) 387-4786; E-mail: RL-info@wmich.edu; Website: wmich.edu/housing.

Office of Information Technology

The Office of Information Technology offers a wide variety of technology related services to students, faculty, and staff. These services include anti-virus protection, cable television, classroom technology, email, consulting and project management, instructional support, media services, networking, both wired and wireless connections, and online information security education www.wmich.edu/it. Online secure transactions are handled through the University's portal, GoWMU gowmu.wmich.edu. IT provides student computing labs in the University Computing Center (UCC) and the Bernhard Center. A lab for faculty technology is also located in the UCC. A technology help desk is provided as your first point of contact with computing, tablets, or smart phone assistance, (269) 387-4357, option 1 or www.wmich.edu/helpdesk.

International Programs and Services

International programs at Western Michigan University are led by the Diether H. Haenicke Institute for Global Education. The University has made a serious commitment to continued expansion of international education across the campus, a goal that is included in the University mission statement. Almost all offices that administer international programs and services are housed within the Haenicke Institute with offices in Ellsworth Hall and the Faunce Student Services Building. The University annually hosts nearly 1,900 international students and has a long tradition of international involvement across all colleges.

Diether H. Haenicke Institute for Global Education

Jane Blyth, Interim Associate Provost
2425 Ellsworth Hall
Western Michigan University
Kalamazoo MI 49008-5245
Telephone: (269) 387-5890; FAX (269) 387-0630
www.wmich.edu/international

The Haenicke Institute for Global Education collaborates with colleges, departments, and interdisciplinary programs to promote global, international, and area studies throughout Western Michigan University. The Institute houses multiple centers and offices devoted to international education.

International Admissions and Services

Mr. Juan Tavares, Director
3110 Faunce Student Services
Western Michigan University
Kalamazoo MI 49008-5246
Telephone: (269) 387-5865; FAX (269) 387-5899

E-mail: oiss-info@wmich.edu
www.wmich.edu/internationaladmissions

Within the Haenicke Institute, the International Admissions and Services office handles admissions and special needs for international students. Services include:

- Processing of applications for admission
- Immigration advising
- Orientation program for newly arrived international students
- Assistance with housing arrangements
- Coordination of international student organizations and activities
- Liaison between international students and financial sponsors
- Personal and social counseling

International students interested in seeking admission to Western Michigan University may access application information and an online or printable application at www.wmich.edu/internationaladmissions/apply.

Immigration Services

Ms. Lee Ryder, J.D., Director of Immigration Services
3110 Faunce Student Services

Western Michigan University
Kalamazoo, MI 49008-5246
Telephone: (269) 387-5873; FAX (269) 387-5899

Immigration services for international students, international visitors and faculty are provided through the Immigration Services office of the Haenicke Institute.

Center for English Language and Culture for International Students (CELCIS)

Mr. Thomas Marks, Director
0522 Ellsworth Hall
Western Michigan University
Kalamazoo MI 49008-5223
Telephone: (269) 387-4800; FAX (269) 387-4806

E-mail: celcis-info@wmich.edu
http://www.wmich.edu/celcis

As part of the Haenicke Institute, the Center for English and Culture for International Students (CELCIS), established in 1975, provides instruction in English as a second language for non-native speakers who will use English to study at an American college or university or in their workplaces.

CELCIS also offers a range of individually designed, short-term programs that may include English language training (at any level) and introductory studies in American culture.

CELCIS offers classes at six English language proficiency levels which include: speaking and listening comprehension, grammar, academic reading and vocabulary building, academic writing, and research paper writing. Extra-curricular activities include conversation circles, volunteer opportunities, and various social, sport, and cultural programs.

CELCIS operates three fifteen-week terms per year (fall, spring and summer). Successful completion of CELCIS meets the minimum English proficiency requirements for all undergraduate programs and some graduate programs at Western Michigan University.

Study Abroad

Dr. Lee Penyak, Director
2425 Ellsworth Hall
Western Michigan University
Kalamazoo MI 49008-5245
Telephone: (269) 387-5890; FAX (269) 387-0630

E-mail: study-abroad@wmich.edu
http://www.wmich.edu/studyabroad

Study Abroad offers more than 90 study programs in 40-plus countries, varying in length from a few weeks to a full academic year and access to hundreds of programs administered by University-approved study abroad providers. Programs are available for undergraduates and graduates in a broad spectrum of disciplines for an academic year, one semester, or summer terms. Scholarships and grants are available, such as the President's Grant for Study Abroad that offers up to $5,000 for foreign-language students seeking an overseas language-intensive experience, and the Global Engagement Scholarship.

Students who undertake study abroad programs, or conduct individualized research, field studies, internships or other experiences outside the United States that carry WMU academic credit, and/or under the direct auspices of WMU faculty, must register with WMU Study Abroad.

Study Abroad also provides a number of important services to WMU students preparing to study, intern, or to conduct research outside the United States. Services include orientation programs, insurance procedures, and current information about conditions in countries of destination. Study Abroad maintains an extensive research area and databases for programs offered by other colleges and universities. The office also serves as a contact point between WMU students overseas and the university.

International Research and Study Centers

, Associate Provost
2425 Ellsworth Hall
Western Michigan University
Kalamazoo MI 49008-5245
Telephone: (269) 387-5890; FAX (269) 387-0630
www.wmich.edu/international

The Haenicke Institute hosts four international centers devoted to teaching, research, or outreach for a particular area of the world. Each center has as its mission the goal of furthering understanding and knowledge of a country or region. These centers contribute substantially to the global understandings of faculty and students at Western Michigan University, as well as members of the community.

Center for African Development Policy Research
Dr. Sisay Asefa, Director
3531 Ellsworth Hall
Telephone: (269) 387-1945

The Michitoshi Soga Japan Study Center
Dr. Takashi Yoshida, Director
3525 Ellsworth Hall
Telephone: (269) 387-5874

Timothy Light Center for Chinese Studies
Dr. Wei-Chiao Huang, Director
2449 Ellsworth Hall
Telephone: (269) 387-3872

The Confucius Institute
,Director
3515 Ellsworth Hall
Telephone: (269) 387-3907

Multicultural Affairs, Division of

The mission of the Division of Multicultural Affairs (DMA) is to engage students in discovery and learning experiences in an effort to facilitate academic success and participation in a multicultural world.

DMA strives to ensure that all students are given the full opportunity to discover and develop their talents, interests, and potential, through programs and services. DMA also promotes strong academic achievement, leadership development, and encourages participation in events and experiences that advance diversity on and off campus.

For information, call 269-387-4420 or visit 2260 Ellsworth Hall, or visit the website www.wmich.edu/multicultural.

Online Education

As part of a learner-centered, research university, WMU Online Education offers a wide selection of courses and programs. Through Online Education, WMU provides access to high-quality education for those unable to travel to campus, yet want to pursue or continue their academic goals. Online Education partners with academic colleges and departments to expand access to educational opportunities. Courses are offered through Online Education in the following formats:

- Online courses - no required face-to-face meetings. Delivery is completely online.
- Hybrid courses - a mix of online and face-to-face instruction, with at least 51 percent of the instruction online.
- Open Learning - self-paced, undergraduate online courses with flexible start and end dates. Students have up to six months to complete the course.

Online Education provides expertise in and access to student support services, instructional design, on- and off-campus testing services, and course development and maintenance support to faculty.

3rd floor Ellsworth Hall

Telephone (269) 387-4200
Fax (269) 387-4226
www.wmich.edu/online

Parking and Vehicle Registration

Detailed regulations concerning the use of motor vehicles on campus is available from the Department of Public Safety's Parking Services. All students are eligible to park a motor vehicle on University property; however, they must first register their motor vehicle, motorcycle, and/or moped with Parking Services and pay a registration fee. Information concerning parking regulations, parking permits, and parking violations can be obtained by visiting Parking Services located at 2507 West Michigan Avenue (at the corner of West Michigan and Knollwood) or by telephoning (269) 387-4609 Monday through Friday. 7:30 a.m. – 5 p.m. Visit our web page at www.wmich.edu/parking for complete rules and permit prices.

Police

Located at 511 Monroe Street, off the 1300 block of West Michigan Ave., the Department of Public Safety is open 24 hours a day, providing a full range of police services through the use of a uniformed patrol division, a detective bureau, and a communications center. The Department of Public Safety is responsible for investigating all crimes and accidents occurring on University property and is committed to providing an environment conducive to the education of the students at Western Michigan University. Towards that goal, the department's various divisions and bureaus have coordinated their efforts to create and maintain a feeling of security and safety within the University community. Information can be obtained by visiting the webpage: www.wmudps.wmich.edu or the office. The Department's telephone number is (269) 387-5555 or 911 in an emergency.

Publications

Established in 1916, the *Western Herald* (www.westernherald.com) is WMU's independent student-run news organization. All positions at the *Western Herald* are staffed by students. The *Western Herald* website operates 24/7 yearlong. The *Western Herald* prints weekly from September through May and is distributed in convenient news racks throughout campus. The *Western Herald* offers employment and volunteer opportunities. More information is available at herald-general-manager@wmich.edu.

Western News is the official publication for administration, faculty, and staff members. It is published every other Thursday during fall and spring semesters and the summer I session by the Office of University Relations. That office also produces WMU News, an online news source that is updated daily and can be found at www.wmich.edu/wmu/news.

The *WMU Magazine* is a quarterly publication distributed to alumni, donors, friends, faculty, staff and students. Produced by the Office of University Relations, the magazine had a circulation of more than 75,000 and focuses on new campus developments and initiatives, research and news of universitywide import.

Radio

WMUK 102.1 FM is a member-support public radio service of Western Michigan University. Broadcasting at 50,000 watts, WMUK primarily serves Southwest Michigan and Northern Indiana. The Station offers round-the-clock news, music and information on two HD programs streams. It also features local news and arts coverage – as well as national and international programming. Listening is also available at www.wmuk.org.

WMUK is a non-profit public radio station and charter member of NPR. The Station also offers programming from the BBC World Service, American Public Media (APM) and Public Radio International (PRI).

Since its founding over 65 years ago, WMUK has provided a cultural extension of the University through its broadcast of quality news, arts and local coverage. Over the years, the station has enhanced its public service mission, providing award-winning news and music programming to Kalamazoo and beyond. WMUK is notable for its classical, bluegrass and jazz music programming, as well as programming for Spanish-speaking audiences. The station provides student internships through the School of Communication.

WMUK 102.1 FM is licensed to Western Michigan University's Board of Trustees. The majority of funding comes from Western Michigan University, listener support, business underwriting, and the Corporation for Public Broadcasting (CPB).

WIDR(FM), a 100-watt station operated by students, broadcasts on 89.1. Facilities of WIDR(FM) are located in 1501 Faunce Student Services Building. WIDR(FM) offers a unique opportunity for Western Michigan University students to gain experience in programming, promotion, and station operation. For more information, please visit the website at www.widrfm.org.

Sindecuse Health Center

Sindecuse Health Center offers high-quality, cost-saving health services by an experienced, multidisciplinary staff. Our board-certified clinicians offer evaluation and treatment for illness or injury to students, faculty and staff by appointment. In addition to clinical care, we serve the campus community with pharmacy, lab and x-ray and physical therapy services. Counseling services are available to students. Our health promotion programs enhance individual and community health. The health center is accredited by the Accreditation Association for Ambulatory Health Care Inc. For more information, including insurance company participation, visit www.sindecuse.com.

Important Phone Numbers (Area code 269)

Information and appointments	387-3287
Counseling Services	387-1850
Health Promotion and Education	387-3263
Insurance	387-4219
Lab/X-ray	387-3245
Pharmacy	387-3301
Physical Therapy	387-3248
Prescription refills	387-3288
Psychology	387-1850
Sports Medicine Clinic	387-3248

Speech, Language, and Hearing Services

The Charles Van Riper Language, Speech, and Hearing Clinic is a service program provided by the Department of Speech, Language and Hearing Sciences for persons with communication disorders. It is located in the Unified Clinics at University Medical and Health Sciences Center, 1000 Oakland Drive. Students may take advantage of evaluation and therapy services by contacting the Clinic for an appointment. Telephone: 387-8047.

Student Engagement, Office of

The mission of the Office of Student Engagement is to engage campus, empower students and develop leaders. We welcome you as a valued member of our community and are excited to be a part of your learning and personal development. Currently, WMU has over 350 registered student organizations representing a diverse range of interests.

Our services include coordinating major campus wide events including Bronco Bash and Homecoming. We advise and provide resources to registered student organizations, and coordinate campus wide leadership development programs and certificates through a variety of different formats for individual student leaders at all skill levels. We

provide support to the Office of Faith and Spiritual Development and Fraternity and Sorority Life. We coordinate two large opportunities for service and civic engagement called "Fall Into the Streets" and "Spring Into the Streets".

Student life is an important dynamic of the college experience and we encourage students to become active members of our WMU community.

For detailed information, visit the website at www.wmich.edu/activities or visit our office in 223 Bernhard Center.

Substance Abuse Services

For alcohol and substance abuse services and referrals, please contact the University Counseling and Testing Center at (269) 387-1850, 2513 Faunce Student services Building between 8:00 am and 5:00 pm, Monday through Friday. Services for students are free unless they are court ordered. Requests for court ordered services are referred to the University Substance Abuse Clinic, located in the Unified Clinics at (269) 387-8230, 1000 Oakland Drive, 3rd floor. For directions to the building go to http://maps.pp.wmich.edu/KaMai/index.html . Students are encouraged to make appointments by visiting or calling the appropriate office directly.

Telephone Directory

The WMU Campus Directory of faculty, staff and retirees is published annually by Office of University Relations. It is distributed during early November, without charge, to offices across the campus. Extra copies are available through the Office of University Relations.

Individual listings of faculty and staff in the Campus Directory include the following information:

1. Name
2. Title and department
3. Campus address and telephone number
4. Home address and telephone number (if provided)
5. Email address

University Counseling and Testing Center

Students are faced with many challenging situations and important decisions while attending college. They will engage in career planning and become involved in social and personal situations that may leave them feeling confused, dissatisfied or distressed. The inherent stresses of university life are likely, at some point, to interfere with academic achievement and personal growth. The University Counseling and Testing Center (UCTC) exists to help students deal effectively with many of these concerns.

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

Counseling and Testing Center services consist of the following:

Individual and Group Counseling is offered to assist students in better understanding themselves and manage emotional conflicts that may interfere with their everyday lives. Counseling also helps students develop and experience more satisfying and fulfilling lifestyles.

Career Counseling and Testing to provide students with the resources, skills, and experiences necessary for reasonable educational and career choices. Individual and group activities are offered to (1) increase self-understanding, including insights into one's interests, values, abilities, and skills; (2) learn how to acquire information about careers; (3) review choices, make decisions, and establish plans of action; and (4) test the

feasibility of individual plans by experiencing the reality of the working world. There is a nominal fee for testing services.

Career Resource Center contains a wide selection of printed materials and a computerized database with career exploration and decision making as well as occupational preparation and planning. Additional resources are available online via out Center website: www.wmich.edu/counseling

Training and Internship Programs for graduate students from the Department of Counselor Education and Counseling Psychology, the Department of Psychology and pre-doctoral psychology interns from other accredited universities are available. Included in the training experience are case consultations, supervision of treatment sessions, didactic presentations and professional growth opportunities. The American Psychological Association has accredited the Center's predoctoral internship program in professional psychology.

National Standardized Testing is conducted by UCTC. The following tests are regularly offered: ACT, LSAT, GRE (subject exam), PCAT, SAT, TOEFL and CHES. Standardized testing information is available on the Center's website: www.wmich.edu/counseling.

The Counseling and Testing Center is committed to the need for confidentiality in client/counselor communications. Therefore, confidentiality of client information is maintained in a manner consistent with professional standards of ethical practice and conduct and legislative requirements in the state of Michigan. Copies of the Counseling and Testing Center Policy on Confidentiality may be obtained at the Center's reception desk.

Appointments may be requested by telephone (269-387-1850) or by stopping at the Counseling and Testing Center (2513 Faunce Student Services Building) reception desk between 8 a.m. and 5 p.m., Monday through Friday. Website: www.wmich.edu/counseling

University Libraries

The major purpose of the University Libraries is to take an active role in the educational mission of the University, and to provide instruction, assistance, resources, facilities, and an environment that not only supports student academic success but also group projects, extra-curricular programs and the development of life-long learning and research skills. In-person, phone, text and e-mail help are feely available, as are physical and online resources, computers, printing, group study rooms, interactive and quiet spaces.

The University Libraries combined holds more than 2 million print volumes plus more than 1.5 million e-books, journals and streaming videos. Waldo Library, the main library at Western Michigan University, is named after Dwight B. Waldo, the University's first president. It was extensively renovated and expanded in 1991 and houses resources and services supporting the University's undergraduate and graduate programs in the humanities, fine arts, business, health professions, social sciences, science, and engineering. The University Libraries also includes three branches: the Swain Education Library in Sangren Hall offers assistance and resources for the field of education; the Maybee Music and Dance Library in the Dalton Center includes specialist help and access to music scores, audio and video recordings; the Archives and Regional History Collections is housed in the Charles C. and Lynn L. Zhang Legacy Collections Center on the Oakland Drive campus and provides expertise and collections of unique and rare materials concerning the history of southwest Michigan and the official records of the University.

Service-oriented librarians and student assistants are available to help with any and all information needs at all these library locations, with additional writing and tutoring services available at Waldo Library.

Visit the Libraries' web page (http://www.wmich.edu/library) for online access and more information about available services and resources.

University Recreation

Student Recreation Center
(269) 387-4732

The Student Recreation Center (SRC) is a student-oriented, multi-use facility programmed, staffed, and financed by Western Michigan University students. Recreational, educational, and health promotion programs are provided for the benefit of all WMU students, faculty, staff, spouses, emeriti and alumni facility members. The facility includes an 8,000 square foot fitness/weight room, a recreational pool with attached swirl pool and saunas, a 45' climbing wall, indoor jogging track, 8 basketball courts, volleyball and badminton courts, indoor tennis courts, 9 racquetball courts, aerobics room, 2 multipurpose gyms and a cycling room.

Memberships are available on a Semester (fall/spring) and Session (summer I/summer II) basis. Facility tours are available during all building hours by stopping at the service desk or main office. Student access to the SRC is determined by enrollment fees paid, not credit hours registered. The access fee for the SRC is rolled into the enrollment fee. Students who pay the enrollment fee have access to the SRC for that semester or session.

Students involved in internships, student teaching or taking classes through Extended University Programs may not be assessed the SRC membership enrollment fee. Student should check their tuition invoice to determine payment of fee. Students NOT assess the fee have the option to purchase a membership at the SRC

Informal Recreation

Informal recreation permits individual choice of activity. Various facilities are available on a drop-in or reservation basis including basketball courts, volleyball courts, racquetball courts, tennis courts, squash court, indoor and outdoor tracks, fitness/weight room, and swimming pool. Other open recreation opportunities include badminton, table tennis, climbing wall, and wallyball. Equipment for various activities may be checked out with a valid Bronco ID card.

Outdoor Recreation

University Recreation also provides competition-style outdoor track, tennis courts, soccer fields, intramural fields and a sand volleyball court. Selected outdoor equipment may be available for checkout with a valid Bronco ID card from the SRC Service Desk.

Intramural Sports

Intramural Sports are available for students, faculty, staff, alumni and members of the SRC who are interested in competitive activities. The program offers both team and individual sports, including basketball, volleyball, soccer, softball, ice hockey, flag football, tennis, racquetball, in-line hockey, and much more. Intramurals provide opportunities for individuals to participate in sports experiences that will develop team building and leadership skills. Opportunities for leadership are available for students who wish to officiate contests.

Fitness Programs

University Recreation offers a variety of aerobics fitness classes to meet fitness needs of participants. Enthusiastic and energetic instructors will lead participants in classes that consist of a variety of cardiovascular activity, strengthening, flexibility, and relaxation exercises designed to meet the needs of all fitness levels. Passes are necessary for admission to all classes. Additionally, completion of the Physical Activity Readiness Questionnaire (PAR-Q) is required prior to initial participation.

Fitness Weight Room

Located in the SRC, the 8,000 square foot fitness/weight room contains a full line of variable resistance weight machines, treadmills, free weights, exercise bicycles, stair climbers and elliptical machines. Personal Trainers are available to instruct on proper use of the equipment and to provide exercise training guidelines to meet personal goals. Located by the indoor track are 45 cardio machines where participants can exercise.

Climbing Wall

Students can feel the excitement of scaling a 45-foot wall. The Climbing Wall is designed to challenge and teach participants about the unique sport of indoor climbing. Students may take a climbing clinic to learn the proper belay techniques or just drop by and climb. The wall is a top-rope system where climbers are harnessed in for safety.

Club Sports

Students who wish to compete or learn a new sport may join sport clubs. A sport club is a registered student organization (RSO), formed by individuals motivated by a common interest and desire to participate in a favorite sport activity. Sport clubs vary in focus and programming since student members manage the operation of the club and decide club activities. A sport club may be competitive, recreational, social or any combination of all of these formats. These clubs hold practices and compete against other schools. WMU offers 20 clubs ranging from Synchronized Skating, Sailing, Lacrosse, Rugby, Volleyball, Ice Hockey to Ultimate Frisbee.

For more information on services and specific days and times of programs, pick up a SRC Program Guide or call our membership desk at (269) 387-3115. Current information may also be found on the web at www.wmich.edu/rec.

Veterans' Assistance

The Office of the Registrar, on the third floor of the Administration Building certifies students under the G.I. Bill and its extensions. The Veterans' Certification Officer will assist any person who seeks certification, or application, to the Veterans Administration under applicable programs.

Students who wish to receive V.A. benefits must annually file a "V.A. Certification Information Card" outlining plans for enrollment for the coming year. Students are certified on the basis of attendance and academic progress toward a declared degree. Address changes are also to be reported to the Veterans' Certification Officer as soon as possible.
In addition to normal scholarship standards, students receiving benefits from the Veterans Administration are advised of their additional rights and responsibilities.

In-State Tuition for Active Duty Military Personnel and their Dependents

Western Michigan University will grant instate tuition to all Veterans and their dependents.

For the purpose of this policy, a child is a dependent as defined by IRS income tax regulations. A spouse, widow or widower of a service member or veteran who has honorably served will also be granted in-state tuition.

Western Michigan University will also grant in-state tuition to all individuals who are not eligible for VA educational benefits but have honorably served or are serving in the Reserve or Active Components of the US Armed Forces.

Western Michigan University will additionally grant in-state tuition to dependents of those individuals who have honorably served or are serving in the Reserve or Active Components of the US Armed Forces, and who would otherwise not be eligible for VA educational benefits.

The Veterans' Certification Officer may be reached in the Office of the Registrar at (269) 387-4115.

Writing Center

The Writing Center, located at 1343 Ellsworth Hall, helps all Western Michigan University graduate and undergraduate students improve their writing abilities. Our writing consultants include undergraduate and graduate students as well as adjunct instructors. Consultants are trained to help students with any aspect of written, oral, visual, and electronic communications, including assignments from any class, employment search communications

(résumés, cover letters, thank-you notes, etc.), scholarship essays, graduate school personal statements, dissertation chapters, PowerPoint presentations, and much more. We work with students enrolled in any class on our main campus, at any regional campus, or online and with students who are studying abroad or working at internships. We also help students for whom English is an additional language and students who have disabilities. Finally, our instructional assistance is free to all students.

Typically, a consultant will meet with a student one-on-one to offer feedback on the student's work, though we also meet with groups of writers who are collaborating on projects. Some students ask for help getting started on a writing assignment or task, while some work with us to improve their test writing abilities, decrease their writing phobia, develop proofreading skills, or improve their understanding of a particular documentation style (APA, MLA, Chicago Manual, etc.) or genre (lab reports, memos, proposals, grants, etc.) Consultants and students may meet in person on our main campus, and we are also available by telephone and email for students who cannot come to campus.

Students may get help from consultants in a 50-minute appointment or a 20-minute drop-in session. It's easiest for students to make appointments through our online scheduler, which can be found on our website: www.wmich.edu/casp/writingcenter. Students may also call us at (269) 387-4615 to make an appointment or get directions. In addition, students who want to use our drop-in services by telephone should also call (269) 387-4615, and should leave a message with their telephone number if they reach our voice-mail.

Our hours for each semester and summer session are listed on our website. In addition to our Monday through Friday hours, during fall and spring semesters, we also offer Sunday hours from 5:00 – 8:00 p.m. at our 3rd floor Waldo Library location. Students who want help when the University is not holding classes may email the Writing Center director at kim.ballard@wmich.edu.

At the request of instructors or organization leaders, Writing Center staff will develop and present workshops in classes or meetings. We are also available for in-class writing assistance.

Our consultants truly enjoy working with students on their writing and hope as many students as possible take advantage of our eagerness to help them learn. As part of the Center for Academic Success Programs (CASP), we are dedicated to helping students excel at Western Michigan University.

University & Program Accreditation

University Accreditation

Western Michigan University is accredited by the Higher Learning Commission, 230 South LaSalle Street, Suite 7-500, Chicago, IL, 60604-1411; Web site: www.hlcommission.org; Telephone: 800-621-7440.

Disclosure of Academic Program Accreditation and Certification Status

The Professional Education Unit at Western Michigan University is accredited by the Council for the Accreditation of Educator Preparation http://www.caepnet.org. This accreditation covers:

- baccalaureate programs for preparation in art education (B.F.A. program); elementary professional education; elementary middle school integrated science, language arts, math, and social studies; family/consumer sciences teacher education; health education: school; industrial technology; music education (B.M. program); occupational education studies; secondary education; and special education and elementary education: LD and EI K-12; at the Kalamazoo and Southwest locations;
- graduate certificate in English as a second language teacher education at the Kalamazoo locations;
- master's programs in art education, career and technical education; counselor education (concentration in school counseling); educational foundations; educational leadership; English teaching; literacy studies; mathematics education; music education; physical education; practice of teaching; science education; special education; the practice of teaching; and teaching at the Kalamazoo, Battle Creek, Grand Rapids, Muskegon, Southwest, and Traverse City locations; master's programs in art education, career and technical education, physical education, and science education are also offered through online education;
- master's programs in art education, career and technical education, physical education, and science education offered through online education;
- educational specialist program in educational leadership at the Kalamazoo and Grand Rapids locations; and
- doctoral programs in educational leadership, mathematics education, science education, and special education at the Kalamazoo and Grand Rapids locations.

However, the accreditation does not include individual education courses that the institution offers to P-12 educators for professional development, relicensure, or other purposes.

The B.S.E. programs in aerospace, chemical, civil, computer, construction, electrical, industrial and entrepreneurial, mechanical, and paper engineering are accredited by the Engineering Accreditation Commission of ABET, http://www.abet.org.

All baccalaureate programs in art, art education, art history, and graphic design, and M.A. in Art Education are accredited by the National Association of Schools of Art and Design.

The B.S. in Athletic Training (professional program) is accredited by the Commission on Accreditation of Athletic Training Education (CAATE). The program has been placed on Probation as of February 19, 2016 by the CAATE, 6850 Austin Center Blvd, Suite 100, Austin, TX 78731-3101.

The B.S. in Aviation Flight Science is accredited by Aviation Accreditation Board International (AABI) under the Flight Education criteria, as well as certified by the Federal Aviation Administration as an FAA Part 141 Flight School and licensed by the State of Michigan Department of Transportation. The B.S. in Aviation Maintenance Technology is accredited by Aviation Accreditation Board International (AABI) under the Aviation Maintenance criteria, as well as certified by the Federal Aviation Administration as an FAA Part 147 Aviation Maintenance Training School. The B.S. in Aviation Management and Operations is accredited by Aviation Accreditation Board International (AABI) under the Aviation Management criteria.

The M.A. in Psychology (concentration in behavior analysis) and the Ph.D. in Psychology (concentration in behavior analysis) are accredited by the Association for Behavior Analysis International. (The Association for Behavior Analysis International is not recognized by the Council for Higher Education Accreditation or the U.S. Department of Education.)

All B.B.A. and M.B.A. programs in the Haworth College of Business are accredited by the Association to Advance Collegiate Schools of Business International. In addition, the The B.B.A. and M.S.A. programs in accountancy are accredited by the Association to Advance Collegiate Schools of Business International – Accounting Accreditation.

The Center for English Language and Culture for International Students (CELCIS) at Western Michigan University is accredited by the Commission on English Language Program Accreditation (CEA) for the period 2016 through 2025 and agrees to uphold the CEA Standards for English Language Programs and Institutions. CEA is recognized by the U.S. Secretary of Education as a national accrediting agency. For further information about this accreditation, please contact the Commission on English Language Program Accreditation, 801 N. Fairfax St., Suite 402A, Alexandria, VA 22314, (703) 519-2070, www.cea-accredit.org.

The Ph.D. in Psychology (concentration in clinical psychology) is accredited by the Commission on Accreditation, American Psychological Association, c/o Office of Program Consultation and Accreditation, 750 First Street NE, Washington, DC 20002-4242, (202) 336-5979.

The M.A. in Coaching Sport Performance is accredited by the National Council on Accreditation of Coaching Education. (The National Council on Accreditation of Coaching Education is not recognized by the Council for Higher Education Accreditation or the U.S. Department of Education.)

The M.A. in counselor Education (concentrations in clinical mental health counseling, college counseling, and school counseling), as well as the Ph.D. in Counselor Education, are accredited by the Council for Accreditation of Counseling and Related Educational Programs.

The B.S. in Computer Science is accredited by the Computing Accreditation Commission of ABET, http://www.abet.org.

The Ph.D. in Counseling Psychology is accredited by the Commission on Accreditation, American Psychological Association, c/o Office of Program Consultation and Accreditation, 750 First Street NE, Washington, DC 20002-4242, (202) 336-5979.

The baccalaureate programs in dance are accredited by the National Association of Schools of Dance.

The B.S. in Dietetics and the dietetic internship-non-degree program are accredited by the Accreditation Council for Nutrition and Dietetics (ACEND) of the Academy of Nutrition and Dietetics.

The B.S. programs in engineering design technology, engineering management technology, and manufacturing engineering technology are accredited by the Engineering Technology Commission ETAC of ABET, http://www.abet.org.

The B.S. in Fashion Merchandising and Design (concentrations in design and development, and merchandising) is accredited by the National Association of Schools of Art and Design.
The B.S. in Graphics and Printing Science is accredited by the Accrediting Council for Collegiate Graphic Communications, Inc., http://accgc.org.

The B.S. in Interior Design is accredited by the Council for Interior Design Accreditation, www.accredit-id.org, 206 Grandville Avenue, Suite 350, Grand Rapids, MI, 49503-4014, and by the National Association of Schools of Art and Design. It is also accredited by the National Association of Schools of Art and Design.
Western Michigan University is certified for metal casting by the Foundry Educational Foundation (FEF).

The baccalaureate programs in composition, music, music education, music performance, and music therapy, and the M.M. in Music (concentrations in composition, conducting, music, music education, music performance, and music therapy) are accredited by the National Association of Schools of Music.

The Bachelor of Science in Nursing (B.S.N.) and Master of Science in Nursing (M.S.N.) are accredited by the Commission on Collegiate Nursing Education, One Dupont Circle, NW, Suite 530, Washington, DC 20036, (202)

887-6791.

The M.S. in Occupational Therapy, offered in Kalamazoo and Grand Rapids, is accredited by the Accreditation Council for Occupational Therapy Education (ACOTE) of the American Occupational Therapy Association (AOTA), located at 4720 Montgomery Lane, Suite 200, Bethesda, MD 20814-3449. ACOTE's telephone number c/o AOTA is (301) 652-2682.
The Master of Science in Medicine (M.S.M.) in Physician Assistant is accredited by the Accreditation Review Commission on Education for the Physician Assistant, Inc. located at 1200 Findley Rd., Suite 150, Johns Creek, GA 30097.
The Master of Public Administration (M.P.A.) is accredited by the Network of Schools of Public Policy, Affairs, and Administration.
The M.A. in Counselor Education: Rehabilitation Counseling is accredited by the Council on Rehabilitation Education, Inc.

The Bachelor of Social Work (B.S.W.) and Master of Social Work (M.S.W.) are accredited by the Council on Social Work Education.

The master's education program in speech-language pathology and the doctoral education program in audiology at Western Michigan University are accredited by the Council on Academic Accreditation in Audiology and Speech-Language Pathology (CAA) of the American Speech-Language- Hearing Association, 2200 Research Boulevard #310, Rockville, Maryland 20850, 800-498-2071 or 301-296-5700.
The M.A. in Family and Consumer Sciences (emphasis in Textile and Apparel Studies) is accredited by the National Association of Schools of Art and Design.

The baccalaureate programs in theatre are accredited by the National Association of Schools of Theatre.

Graduates of the B.S. in Recreation must demonstrate one year of full-time experience in the field to be eligible to apply for the Certified Park and Recreation Professional (CPRP) exam. The program is not accredited by the Council on Accreditation of Parks, Recreation, Tourism and Related Professions.

Copies of accreditation and certification documents are available for review upon request in the Office of Institutional Effectiveness.

Additional Specialized Program Recognition Leading to Post-Graduation Certification or Licensure of Students

Graduates Graduates of the following programs are eligible for initial teacher certification through the State of Michigan Department of Education:

> Baccalaureate programs for preparation in art education (B.F.A. program); elementary professional education, elementary/middle school integrated science, language arts, math, and social studies; family and consumer sciences teacher education; health education: school; industrial technology, music education (B.M. program), occupational education studies, secondary education; and special education and elementary education LD and EI K-12; and, the M.A. in Career and Technical Education.

Graduates of the following programs are eligible for advanced teacher certification or an endorsement through the State of Michigan Department of Education:

> Master's programs in art education, educational foundations, educational leadership, English teaching, literacy studies, mathematics education, music education, physical education, school counseling, science education;
>
> Educational specialist program in educational leadership; and
>
> Doctoral programs in educational leadership, mathematics education, and science education.

Graduates of the B.B.A. in Accountancy are eligible to take the following exams, among others: Certified Public Accountant (CPA); Certified Management Accountant (CMA); Certified Internal Auditor (CIA). The requirements to sit for the various professional exams differ by exam and state. It is each student's responsibility to determine the requirements for a particular exam. The student should be aware that the exam requirements may change over time.

The M.S. in Accountancy program enables graduates interested in public accounting careers to meet the American Institute of Certified Public Accountants' (AICPA) educational requirements required to obtain a Certified Public Accountant (CPA) license. In addition, the AICPA and the State of Michigan require a total of 150 hours of college credit to obtain a CPA license.

Graduates of the B.S. in Athletic Training (professional program) are eligible to sit for the Board of Certification for the Athletic Trainer (BOC) certification exam. In order to qualify as a candidate for the BOC certification exam, an individual must be endorsed by the recognized program director.

Graduates of the B.S. in Aviation Flight Science earn their Federal Aviation Administration (FAA) Commercial Pilot Certificate with Instrument, and Single- and Multi-Engine Land ratings. Additional optional flight certificates and ratings include the Certified Flight Instructor (CFI), CFI-Instrument, and CFI-Multi-Engine and Single-Engine Sea rating.

Graduates of the B.S. in Aviation Maintenance and Technology are qualified to take the Federal Aviation Administration (FAA) Airframe and Powerplant written and practical examinations required to earn the Federal Aviation Administration (FAA) Airframe and Powerplant Mechanic Certificate.

The master's and doctoral programs in psychology (concentration in behavior analysis) are pre-approved by the Behavior Analyst Certification Board as meeting coursework and experience eligibility requirements. Graduates of these programs are eligible to sit for the Board Certified Behavior Analyst® (BCaBA®) certification examination.

The B.S in Psychology (concentration in behavioral science) is pre-approved by the Behavior Analyst Certification Board as meeting coursework and experience eligibility requirements. Graduates are eligible to sit for Board Certified Assistant Behavior Analyst™ (BCaBA®) certification examination.

The baccalaureate programs in child and family development and in family studies, and the M.A. in Family Studies – Family Life Education option are approved by the National Council on Family Relations (NCFR). Graduates of NCFR-Approved academic programs who have completed all courses with a grade of C- or better can apply to NCFR for Provisional or Full Certification through the Abbreviated Application Process. Applicants applying through the Abbreviated Application Process do not need to take the Certified Family Life Education (CFLE) Exam.

Graduates of the M.A. programs in clinical mental health counseling; college counseling; marriage, couple and family counseling; school counseling; and, rehabilitation counseling; as well as the Ph.D. in Counselor Education, are eligible to become Licensed Professional Counselors (LPC) in Michigan after first becoming Limited Licensed Professional Counselors (LLPC). The LPC is granted after 3000 hours of supervised experience (by an LPC) and a passing score on either the National Counselor Examination (NCE) developed by the National Board for Certified Counselors (NBCC) or the Certified Rehabilitation Counselor Examination (CRC) developed by the Commission on Rehabilitation Counselor Certification. The NCE and CRCE are the State of Michigan Counselor License Examinations. Graduates from the clinical mental health counseling; college counseling; marriage, couple, and family counseling; and, school counseling concentrations are eligible to become Nationally Certified Counselors (NCC). Graduates from the rehabilitation counseling concentration are eligible to become Certified Rehabilitation Counselors (CRC).

Graduates of the M.A. program in Counseling Psychology are eligible to become Limited License Psychologists (LLP) in Michigan after first becoming Temporary Limited License Psychologists (TLLP). The master's level LLP is granted after 2,000 hours of supervised experience (by a doctoral level Licensed Psychologist (LP) and a passing score on the Examination for the Professional Practice of Psychology (EPPP). In Michigan, master's level Limited License Psychologists must practice under the supervision of a doctoral level Licensed Psychologist (LP).

The Ph.D. in Counseling Psychology prepares students to become fully-licensed psychologists (LP). Doctoral graduates first apply for a doctoral level Limited License. The LP is granted after 2,000 hours of supervised experience (by a doctoral level Licensed Psychologist (LP) and a passing score on the Examination for the Professional Practice of Psychology (EPPP).

Graduates of the baccalaureate didactic program in dietetics are eligible to sit for the Dietetic Technician, Registered (DTR) Registration Examination, a national credentialing examination, administered by the Commission on Dietetic Registration (CDR) of the Academy of Nutrition and Dietetics. Further, those graduates who successfully complete the post-baccalaureate, non-degree dietetic internship are also eligible to apply and take the Registered Dietitian (RD) Credentialing Examination administered by the Commission on Dietetic Registration (CDR) of the Academy of Nutrition and Dietetics.

Graduates of all programs accredited by the Engineering Accreditation Commission of ABET are eligible to sit for the Fundamentals of Engineering (FE) Exam administered by the National Council of Examiners for Engineering and Surveying® (NCEES). This is the second of four steps to earning a professional license in engineering.

Graduates of the Interdisciplinary Teacher Education Program for Health Professionals (ITEP) receive a Certificate in Teaching from the Bronson School of Nursing at Western Michigan University. This certificate can be used to enhance one's employment opportunities in teaching other health professionals in a university setting or health institution. In addition, graduates who are registered nurses are eligible to sit for the Certified Nurse Educator (CNE) examination administered by the National League for Nursing (NLN).

The B.M. in Music Therapy is approved by the American Music Therapy Association (AMTA) as meeting AMTA's standards of clinical practice. Graduates are eligible to sit for the national board certification exam administered by the Certification Board for Music Therapists (CBMT), to obtain the credential MT-BC (Music Therapist - Board Certified).

Students completing the nonprofit leadership minor, and completing additional requirements from the Nonprofit Leadership Alliance, are eligible to earn certification from Nonprofit Leadership Alliance (NLA).

Graduates of the Bachelor of Science in Nursing (B.S.N.) are eligible to take the National Council Licensure Examination for Registered Nurses (NCLEX-RN®) administered by the National Council of State Boards of Nursing, Inc. (NCSBN®). The program has also received endorsement from the American Holistic Nursing Certification Corporation, the credentialing body for holistic nursing. This endorsement enables graduates of the program to be exempt from prerequisites should they choose to sit for the National Certification Examination in Holistic Nursing.

Graduates of the M.A. in Occupational Therapy are eligible to sit for the national certification examination for occupational therapists administered by the National Board for Certification in Occupational Therapy (NBCOT). After successful completion of this exam, the individual will be an Occupational Therapist, Registered (OTR). In addition, most states require licensure in order to practice; however, state licenses are usually based on the results of the NBCOT Certification Examination.

The M.A. in Blindness and Low Vision Studies (concentration in orientation and mobility and vision rehabilitation therapy), is approved by the Association for Education and Rehabilitation of the Blind and Visually Impaired (AER) University Review Program through the Association for Education and Rehabilitation of the Blind and Visually Impaired, 1703 N. Beauregard Street, Suite 440, Alexandria, VA 22311. As such, graduates are eligible to sit for the Certified Orientation and Mobility Specialist (COMS) exam administered by the Academic for Certification of Vision Rehabilitation and Education Professionals (ACVREP).

Graduates of the B.B.A. in Personal Financial Planning who have completed FIN 3600 Risk and Insurance, FIN 4710 Applications in Personal Financial Planning, FIN 3720 Estate Planning, FIN 3730 Retirement Planning and Employee Benefits, and ACTY 3240 Introductory Tax Accounting are eligible to sit for the CFP® Certification Exam administered by the Certified Financial Planner Board of Standards, Inc.

Graduates of the Master of Science in Medicine (M.S.M.) in Physician Assistant are eligible to sit for the Physician Assistant National Certifying Examination (PANCE) administered by the National Commission on Certification of Physician Assistants (NCCPA).

Graduates of the M.S. in Engineering Management are eligible to sit for the Project Management Institute's® Certified Associate in Project Management (CAPM®) certification exam, and the Project Management Professional (PMP)® certification exam. WMU is a Registered Education Provider (REP) to the Project Management Institute®.

Graduates of the M.A. in Counselor Education (concentration in rehabilitation counseling) are eligible to sit for the Certified Rehabilitation Counselor (CRC) exam administered by the Commission on Rehabilitation Counselor Certification (CRCC).

Graduates of the Bachelor of Social Work (B.S.W.) are eligible to apply for the Michigan Limited License Bachelor's Social Work. Graduates of the Master of Social Work (M.S.W.) are eligible to apply for the Michigan Limited License Master's Social Work.

Graduates of the M.A. in Speech-Language Pathology and the Doctor of Audiology (Au.D.) are eligible to take the Praxis specialty exam administered by the Education Testing Service as required for the Certification of Clinical Competence from the American Speech-Language-Hearing Association. They are also able to apply for state licensure in the state in which they intend to practice. They should, however, consult the state licensing board for the specific requirements for that state.

Graduates of the M.S. in Vision Rehabilitation Therapy are eligible to sit for the Certified Vision Rehabilitation Therapist (CVRT) exam administered by the Academic for Certification of Vision Rehabilitation and Education Professionals (ACVREP).

Statement of Legal Control

State Constitution (Excerpt) of Michigan of 1962

§ 6 Other institution of higher education, controlling boards.

Sec. 6. Other institutions of higher education established by law having authority to grant baccalaureate degrees shall each be governed by a board of control which shall be a body corporate. The board shall have general supervision of the institution and the control and direction of all expenditures from the institution's funds. It shall, as often as necessary, elect a president of the institution under its supervision. He shall be the principal executive officer of the institution and be ex-officio a member of the board without the right to vote. The board may elect one of its members or may designate the president, to preside at board meetings. Each board of control shall consist of eight members who shall hold office for terms of eight years, no more than two of which shall expire in the same year, and who shall be appointed by the governor by and with the advice and consent of the senate. Vacancies shall be filled in like manner.

Const. 1963, Art. VIII, § 6, Eff. Jan. 1 1964.

Retrieved from the Legislative Council of the State of Michigan, www.legislature.mi.gov

Extended University Programs

Dr. Dawn Gaymer
Associate Provost

Dr. Edwin Martini
Associate Dean

Mr. Andrew J. Holmes
Executive Director of Technology

Main Office: 3rd floor Ellsworth Hall
Telephone: (269) 387-4200
Fax: (269) 387-4204
URL: wmich.edu/extended

Extended University Programs (EUP) extends Western Michigan University's educational resources throughout Michigan and beyond by partnering with academic departments to deliver undergraduate and graduate degrees, certificate programs and non-credit conferences and workshops. These programs are delivered in a time, place, and format that address the needs of the adult learner. EUP is comprised of regional locations in Battle Creek, Grand Rapids, Lansing, MetroDetroit, Muskegon, Southwest, and Traverse City, Michigan and Tampa and Punta Gorda, Florida. EUP delivers Online Education, University Studies, Professional Development, and the Osher Lifelong Learning Institute at WMU as well.

EUP Vision Statement
To inspire, enable, and encourage lifelong learning, through educational access, personal growth, and professional development opportunities - one individual, one class, and one preferred learning style at a time.

EUP Mission Statement
To extend the mission, brand, and reach of WMU beyond Kalamazoo, through innovation, access and outreach. Leading innovation through branding, community engagement, and the delivery of responsive contemporary programming, EUP seeks to identify, develop, and provide access to learner-centered pathways for diverse populations.

Regional Locations
Regional locations have environments that are tailored to the busy, working adult, including comfortable seating, computer labs, wireless Internet access, and courses scheduled on evenings and weekends. In addition to academic programming, regional locations provide the connection to WMU offices including financial aid, advising, university libraries, and other university services.

Auburn Hills
WMU Cooley Law School
2630 Featherstone Road
Suite 115
Auburn Hills, MI 48326
(248) 485-4500

WMU-Auburn Hills is located within Cooley Law School's Auburn Hills facility, surrounded by a blend of nature and commerce on all sides. Modern classrooms outfitted with current instructional technology provide students with a more robust experience and the building's study rooms offer students access to secluded areas to study and collaborate. WMU's office is open Monday to Friday from 8am until 5pm. Admissions or Human Resource office paperwork can also be verified and submitted at the front desk as an alternative to traveling to main campus. Parking in two large lots is always free and students can reach the campus by riding SMART Bus Routes 465 or 756. The security and safety of our guests is always a top concern. Parking lots and campus grounds are maintained daily and

a facility guard is posted at the building entrance during all open hours, from 8am until 12pm Monday to Thursday and until 10pm Friday to Sunday.

Battle Creek, Michigan Campus
Kendall Center
50 W. Jackson St.
Battle Creek, MI 49017-3505
(269) 965-5380

This completely renovated 24,000 square foot facility houses twelve beautifully furnished classrooms, two computer labs, advising offices, an executive conference room and a state-of-the-art interactive compressed video conference room, as well as satellite downlink connections. The Kendall Center is completely wireless, allowing web access from anywhere in the building. Free three-hour parking is available in a parking deck on the east side of the building. For day-long events, parking in the deck next to the Kellogg Arena, across the street to the south of the building is encouraged.

Clinton Township, Michigan Campus
Macomb Community College University Center
44575 Garfield Road
Building UC1, Room 225
Clinton Township, MI 48038
(586) 226-4838

WMU-Clinton Township is proud to be a part of the Macomb Community College University (MCC) Center located on the center campus of MCC. As a partner with the University Center WMU-Clinton Township not only builds a bridge for MCC students but also offers Macomb county and the surrounding area residents the convenience and flexibility to earn a WMU degree close to home. The MCC University Center offers students access to a computer lab with pay-by-page printing, quiet and large study lounge spaces as well as a convenient hours of operation -until 10pm most evenings and some weekends. Students also have access to the MCC library and other MCC resources if needed. Parking is free and plentiful at the MCC University Center and MCC has their own college police department to keep the campus safe.

Grand Rapids Beltline, Michigan Campus
2333 East Beltline, SE
Grand Rapids, MI 49546
(616) 771-9470

The Beltline location is a beautiful campus that offers a multitude of services for both the adult student and conference planner in a comfortable and professional conferencing environment. The facility features numerous classrooms and computer labs, satellite downlink connections, and a state-of-the-art interactive, compressed video conference room. We have more than 550 spaces available in our parking lot at the WMU-Grand Rapids, Beltline location.

Grand Rapids Downtown, Michigan Campus
200 Ionia Avenue, SW
Grand Rapids, MI 49503
(616) 771-4100

The Downtown location is situated in the historic Cherry Street Landing district, two blocks south of the Van Andel Arena. This exceptional facility features a cyber cafe, a multi-functional Grand Hall, classrooms, a computing lab for online research, a compressed video/distance education classroom, and offices for faculty, advisors, and administrative staff. The Center for Counseling and Psychological Services, a community based counseling clinic, is also housed at the Downtown location.

The Cherry/Commerce city parking ramp, located across from WMU on Cherry Street, is available for daytime or evening parking. This is a totally automated ramp so please follow directions carefully when handling your

payment. When you enter the ramp you will receive a ticket and you can pay when you leave. The Area 5 Lot, one block south of Van Andel Arena, is a City-owned surface lot on Ionia Avenue between Oakes and Cherry Streets. This lot is not available for daytime hourly parking but can be used for evening (set rate) parking after 6 p.m.

Benefits when using these City lots: The City's red Parking Services Security Service vehicles patrol these lots during the day and the evening. The City provides an optional, but free, escort service to your car after class, and they will help with dead car batteries. Lots are kept plowed and salted. Please check at the WMU Security Desk Downtown for more information.

Free Parking - On-street parking meters after 5 p.m. are available within one block of the WMU-Grand Rapids, Downtown location. Ionia Avenue and Cherry Street offer several spaces with parking meters. After 5 p.m. these metered spaces are free, but they fill up fast. Use common sense when storing valuable personal property in your vehicle.

Lansing, Michigan Campus
Lansing Community College University Center
MC 8200W
210 W. Shiawassee St.
Lansing, MI 48901-7210
(517) 483-9728

Located in the University Center at Lansing Community College, WMU-Lansing features a welcoming environment as well as a dedicated staff that is committed to making your experience a positive one. Computer labs, which offer high speed internet access, are available in multiple locations with multiple hours open for use.

Muskegon, Michigan Campus
Stevenson Center for Higher Education
221 S. Quarterline Road
Muskegon, MI 49442
(231) 777-0500

WMU-Muskegon is located at the Stevenson Center for Higher Education on the MCC campus. The facility provides numerous amenities to make your life easier, including computer access for self-registration, payment, record access, email, research, and online library services. Students also have access to additional computer labs located in the Hendrik Meijer Library / Information Technology Center, and the library is open Monday through Thursday until 10 p.m. The campus bistro is open until 8 p.m. Monday through Thursday. Parking is free and plentiful at MCC. For your safety, lots are also well lit.

Southwest, Michigan Campus
On the campus of Lake Michigan College
2785 E. Napier Avenue
Benton Harbor, MI 49022
(269) 934-1500

The WMU-Southwest regional location marks the first time a Michigan university has chosen to build a facility on a community college campus. The promise of WMU-Southwest is to provide the benefits of Western Michigan University's main campus in Southwest Michigan, in conjunction with our valued partnership with Lake Michigan College. The facility includes multiple classrooms, science and computer labs, conference rooms and study areas, and a reading clinic. Faculty, advising, and administrative offices are also housed within the facility.

Students have access to WMU computer services, including Internet, email, and online library services. Being in close proximity to LMC gives our students the opportunity to use the LMC library and other key resources. Students can also participate in the child care services offered at Lake Michigan College on a fee-for-services basis.

The Mendel Center for Arts and Technology at LMC offers a complete catering service so groups meeting at Southwest can order anything from snacks and meals to specially designed menus.

Traverse City, Michigan Campus
Northwestern Michigan College University Center
2200 Dendrinos Dr., Suite 201
Traverse City, MI 49684
(231) 995-1846

The NMC University Center is a leading-edge facility with interactive classrooms and computer labs, and open wireless access is available throughout the center. Student lounges, snack areas, and a student café provide an environment conducive to studying, research, and collaboration. The University Center is open Monday through Friday from 9 a.m. to 8 p.m. and Saturday from 8 a.m. to 4 p.m. For additional information about the University Center, visit http://www.nmc.edu/ucenter.

Punta Gorda, Florida Campus
Florida Southwestern State College Campus
26300 Airport Road
Punta Gorda, FL
(269) 387-44200

The Punta Gorda facility operates on the campus of Florida Southwestern State College located in Charlotte County. The campus sits on a 204-acre site that consists of 12 buildings and 151,823 square feet of space. WMU operates primarily in "Building E" on campus, which consists of two classrooms, a flight simulation system, and three offices. Additionally, WMU has access to all library resources, computer labs, student collaboration space, a science classroom (including a wet lab) and auditorium space.

Licensed by the Commission for Independent Education, Florida Department of Education. Additional information regarding this institution may be obtained by contacting the Commission at 325 West Gaines Street, Suite 1414, Tallahassee, FL 323099-0400, toll-free telephone number (888) 224-6684.

Tampa, Florida Campus
WMU Cooley Law School
9445 Camden Field Parkway
Riverview, FL 33578
(269) 387-4200

The Tampa Bay facility is a newly renovated 130,000 square foot facility in Riverview, Florida. It has 24 classrooms with 1,374 seats that include four distance education classrooms with 204 seats, and a computer laboratory with 28 seats. All classrooms are equipped with contemporary instructional technology and the entire building is wireless.

The Riverview area is conveniently located for commuters who travel on Interstate 75, Interstate 4, or the Florida 618 Toll Expressway. The location has ample onsite parking.

Licensed by the Commission for Independent Education, Florida Department of Education. Additional information regarding this institution may be obtained by contacting the Commission at 325 West Gaines Street, Suite 1414, Tallahassee, FL 323099-0400, toll-free telephone number (888) 224-6684.

Online Education
Online Education offers a variety of courses, degrees, and certificate programs entirely online. Online Education also offers hybrid courses and hybrid degree programs, offered through WMU regional locations, that utilize contemporary online learning technologies and methodologies. Additional services include instructional design and course development support for instructors, technical support for students, and on-campus proctored testing.

University Studies Degree

The University Studies bachelor's degree completion program integrates prior coursework into a personalized degree, providing students with an opportunity to complete a bachelor's degree from WMU in a manageable and straightforward fashion without the constraints of s specialized curriculum. Either a B.S. or a B.A. degree can be awarded based on the topical areas applied.

Professional Development (PD)
Professional Development is dedicated to providing an increased selection and availability of non-credit learning experiences designed with a client centric approach for personal enrichment and career elevation. This unit offers training, preparatory programs and certificates for professionals seeking continuing education credentialing. Additionally, it provides and coordinates the approval of Western Michigan University Continuing Education Units (CEU) and State Continuing Education Clock Hours (SCECH) for the State of Michigan.

Osher Lifelong Learning Institute (OLLI)
The Osher Lifelong Learning Institute at WMU offers educational opportunities for mature adults who have a passion for learning. This volunteer organization works with WMU emeriti, faculty and staff to offer courses and trips year-round. The purpose of the Institute is to:

- Provide intellectual and cultural stimulation, personal growth, and social engagement for participants in an informal, lively, learning atmosphere.
- Enrich and extend the quality of life for participants.
- Create an academy of learners who can share what they have learned and experienced during their lives.

Glossary of Terms

Academic advisor
A faculty or professional staff member trained to help students select courses and plan programs of study for degree or program completion.

Academic dismissal
Dismissal from an academic unit or program for not maintaining the required grade point average or fulfill other program requirements. Dismissal indicates that a student is no longer admitted to the University and may not register.

Academic forgiveness
Students who are readmitted into graduate study will not have grades and credit hours earned more than seven years prior to their new entrance date count in the computation of their grade point average. In such cases, the transcript will read, “Grades and credit hours earned more than seven years prior to current entrance date were not included in the computation of the grade point average.” The request for academic forgiveness must occur at the time of readmission.

Academic standing
The academic standing of a student is determined by the student's grade point average (GPA). All graduate students must have a 3.0 or better grade point average to maintain "good standing." A "warning" will be issued to a student whose GPA falls below a 3.0 in any semester or session even though the overall GPA is 3.0 or better. A student will be placed on "probation" if the overall GPA falls below 3.0, and will receive a "dismissal" notice if the overall GPA is not raised to or above 3.0 at the end of a semester or session on "probation," except when the academic unit housing the student’s program grants an “Extended Probation” for an additional enrollment period.

Accelerated graduate degree program
Accelerated graduate degree programs have been approved in some academic units. These programs allow students who earn bachelor's degrees at Western Michigan University to begin graduate coursework before completion of the undergraduate degree, and use this graduate coursework (usually 9-12 hours) to count for both the bachelor's and graduate degrees, thus "accelerating" completion of a graduate degree. Special admission and registration procedures must be followed by students in accelerated programs until the bachelor's degree is completed; see http://www.wmich.edu/registrar/students/forms for more information.

Active admission status
Admitted students have active admission status for one year following admission and/or one year from the date of last enrollment. Admission will be canceled and re-admission required for any student not enrolling after one year.

Admissions, Office of
The Office of Admissions is responsible for all activities related to the admission of U.S. citizens of permanent residence graduate students.

Annual review
A systematic review of all graduate students, conducted by departments according to a set of department-based criteria, for the purposes of apprising students of their status toward degree completion.

Assistantship
A University-administered stipend awarded by an academic or service unit to an appointed graduate student who is enrolled in a program leading to a graduate degree. Assistants are apprentices in the profession and assist in doing part of the work of the department, teaching or research or service. In order to remain on appointment to an assistantship, a student must maintain good academic standing.

Associateship
A specially designated assistantship awarded to an appointed doctoral student.

Auditing a course
A registration category in which a student registers for and attends class(es) regularly without being held responsible for the work required for credit. A student who registers for a course in this way is not eligible to sit for examinations, earns no credit hours for the registration, and pays full tuition. The designation "AU" appears on the transcript if the auditor attends at least three-fourths of the class or laboratory sessions and gives evidence to the course instructor that the role as auditor has been satisfactory.

Candidacy
See **Doctoral candidacy**, below.

Capstone course or experience
A culminating holistic experience (e.g., thesis, dissertation, comprehensive examination) designed to review and more broadly understand the major issues, themes, theories, and research findings of the student's discipline, often to enable the student to examine the relationship of the discipline to other areas.

Center
An organizational unit formed for purposes of linkage and visibility, focused on a theme, issue, or set of skills. A center will frequently be interdisciplinary in nature. A center does not offer degree programs but may, on rare occasions, offer a course or courses.

CELCIS
The Center for English Language and Culture for International Students (CELCIS) provides intensive English language instruction for those prospective students who need further training in English in order to qualify for regular admission to the University. Classes at various levels include: Speaking and Listening Comprehension, Grammar, Reading and Vocabulary, Writing, Research Paper Writing, and work in the Language Laboratory. For further information and application forms, contact the Center by telephone, (269) 387-4800, or by Fax, (269) 387-4806.

Certificate program
A graduate certificate is awarded for the satisfactory completion of a non-degree graduate program designed around a narrow, applied, and coordinated curriculum with a professional focus. A graduate certificate program may be either multidisciplinary or uni-disciplinary in organization and may be taken separately or in conjunction with a graduate degree program. The graduate certificate is not an award of license, accreditation, or certification to render professional services; rather, it signifies that a student has satisfactorily completed an approved graduate certificate program curriculum.

Class or credit hour load
For all graduate students taking courses for a stated degree or certificate program, six hours constitutes full-time status, five hours constitutes three-quarter time status, and three hours constitutes half-time status in Fall and Spring semesters. In the Summer I and Summer II sessions, three hours in either session constitutes full-time status for that session and two hours constitutes half-time status. Three-quarter time status is not available for sessions.

Students who have completed all the course work for their master's or doctoral level program and who have only the thesis or dissertation to complete are required by Western Michigan University to enroll for a minimum of one-hour in thesis or dissertation credits. An enrollment of one-hour for thesis or dissertation will satisfy WMU's continuous enrollment requirement.

However, students must be aware that FICA regulations and some federal loan deferment regulations require at least half-time enrollment, which at WMU is now at least three hours of enrollment in fall and spring semesters or at least two hours in summer I and summer II sessions. Graduate students, even those enrolled for thesis or dissertation hours, must be enrolled at least half-time (three hours in a semester or two hours in a session) in order to qualify for FICA tax exemption or to be eligible for loan deferments.

Since enrollment fees are determined by hours enrolled, and not by full- or part-time status, students (whether graduate or undergraduate) who enroll for four or fewer hours in fall or spring are charged a lesser enrollment fee than those who enroll for five or more hours, and consequently they will be required to pay an additional fee for unlimited use of the recreation center. Students enrolling for four or fewer hours will have access to the recreation center for 10 visits without extra fee charges.

Closed class
A term used during the registration process to indicate that a course has reached its maximum enrollment limit and is therefore "closed" to further registrations.

Co-Curricular Learning
Co-curricular learning takes place outside formal academic studies. It is similar to volunteerism, but includes structured reflection. (See **Experiential Learning**)

Cognate
A course, or courses, related in some way to the major area of study for the master's, specialist, or doctoral degree. Cognates may be, and often are, courses outside the department of the degree program.

Concentration
A concentration (or option or emphasis) is a thematically coherent block of courses that are more similar to one another than to others in the degree program. A concentration has a title and constitutes a significant percentage (e.g., 10%) of courses in the degree program. Concentrations (or options or emphases) may be recorded on the student transcript.

Conditional
As a condition of admission: Probationary admission *may be* granted by a department to a student who does not meet all normal requirements for regular admission. The probationary student may then establish eligibility for regular admission by completing satisfactorily the specified departmental prerequisites declared in the letter of admission. See "Non-degree Student."

As a condition of academic standing: A student will be placed on probation if the student's overall grade- point average falls below 3.0 for Non-degree, master's, specialist and doctoral students. See "Academic Standing."

Conditional admission
Conditional Admission is granted to the student who meets some of the admission requirements of the University. Continued enrollment in courses at WMU is conditional upon the applicant completing academic course work at a performance level specified at the time of “Conditional Admission” status is granted. Examples of specific performance could include, but are not restricted to: completion of a specified number of graduate credits with a “B” or better grade, completion of specific prerequisite courses with specified grades, or completion of a program’s core requirements with specified grades. The time period for any “Conditional Admission” status may not exceed two semesters and one summer session, with ineligibility for further enrollment after that period unless the specified conditions have been met and the applicant qualifies for “General Admission” status.

Continuing education courses and programs
Graduate courses and programs offered through Extended University Programs in the Regional Locations of Battle Creek, Benton Harbor/St. Joseph, Grand Rapids, Holland, Lansing, Muskegon, Traverse City, or elsewhere away from the Kalamazoo campus.

Continuing education unit (CEU)
Documented acknowledgement of participation in a non-credit program or workshop.

Continuous enrollment
Following a student's first enrollment in 7000 (Master's Thesis), 7200 (Specialist Project), or 7300 (Dissertation), the student must have continuous enrollment in 7000/7200/7300 until all thesis/project/dissertation requirements are

completed satisfactorily and approved by the appropriate bodies. A student unable to complete the thesis/project/dissertation within the program-stipulated hours of registration will be required to continue to enroll in 7000/7200/7300; however, only the program-stipulated hours will count toward meeting the program requirements for the degree. For students not enrolled in the summer I and summer II sessions, pre-enrollment in the subsequent fall semester is necessary for access to library resources during summer I and summer II. Continuous enrollment is defined as enrollment in all fall and spring semesters from the initial enrollment to the semester in which the student graduates(some programs may require students to be enrolled during summer sessions as well as fall and spring semesters; students should refer to respective program handbooks. If the student will graduate in summer I or summer II, the student must be enrolled in that session.

Corequisite
A course that must be taken at the same time as another course. See also **Prerequisite** below.

Course numbering system
Undergraduate courses are numbered from 1000 through 4999. Courses numbered 5000 through 5999 are for upperclass and graduate students. (Graduate students register for graduate credit in 5000-level courses; undergraduate students register for undergraduate credit in 5000-level courses.) Courses for graduate students only are numbered 6000 through 7999.

Course syllabus
Each instructor is required to make available to students a course syllabus that shall contain a basic course description, course objectives, course requirements and policies, grading criteria, and instructor contact information. Instructors are encouraged to include a tentative schedule indicating when various topics will be addressed, and when quizzes, exams, and due dates for assignments shall occur. Instructors are further encouraged to include in their syllabi basic University policies regarding academic conduct, human rights, diversity, and students with disabilities.

Credit
Western Michigan University will consider graduate credit as that earned in an accredited, postsecondary educational institution in which the course was approved by that institution for graduate credit and was supervised by that institution. Western Michigan University will also consider graduate credit as that earned in an examination program recognized and approved by the Graduate Studies Council.

Credit toward a degree program will be granted only for graduate courses in which a grade of "C" or better is earned. In addition, the student must still meet the minimum standard for overall graduate grade-point average (3.0 for master's, specialist and doctoral students).

Graduate credit may not be earned in a 5000-level or 6000-level course by attendance in an undergraduate course in a related area.

Credit/No Credit
A method, separate from the letter grade system, used to evaluate performance in courses. "Credit" is earned for grades of "B" or better; grades of "CB" or below earn "No Credit." Credit/No Credit courses are not computed into the student's overall grade point average.

Credit hour
One hour of classroom (50 minutes) or direct faculty instruction and a minimum of two hours of out of class student work each week for approximately fifteen weeks for one semester hour of credit; or at least an equivalent amount of work for other academic activities as established by the institution including laboratory work, internships, practica, studio work, and other academic work leading to the award of credit hours. See also **semester hour** and **quarter hour** below.

Credit load
The total number of credits for which a student registers during a semester or session. See **Class or credit hour load** above.

Deadline
The date by which certain forms or information or payment must be received by an office or unit.

Degree student
A student formally admitted to a master's, specialist, or doctoral degree program and pursuing a planned program of study to earn that degree. See also **Program of study** below.

Dissertation committee
See **Academic Requirements: Composition and Role of Thesis, Project, and Dissertation Committees** section.

Doctoral candidacy
A candidate for a doctoral degree, prior to the session or semester in which the dissertation is defended, is required to have earned or completed satisfactorily the following and to have received approval by the academic program unit to continue study toward a doctoral degree:

1. A degree program grade point average of 3.0 or better (3.25 in some programs)
2. Appointment of a doctoral dissertation committee and approval of the dissertation proposal by the committee
3. All courses (excluding dissertation credit) and program requirements
4. All research tool requirements
5. Comprehensive examinations
6. Fulfillment of the residency requirement, if required by the program

Individual programs may have additional requirements for candidacy. See http://www.wmich.edu/grad/doctoral-candidacy for doctoral candidacy admission form.

Drop
An official procedure for withdrawing from individual classes without removing registration from all classes. The deadline for the last day to drop a course without academic penalty (grade of “W” is on the transcript) is noted each semester or session on the Registrar’s website. Students who do not follow the official procedure when dropping a class will earn the grade of “X” for that course; the “X” grade carries no honor points and affects the grade point average in the same manner as an "E" or failing grade. See also **Late drop** below.

Dual enrollment
Dual enrollment admission (that is, admission to a master’s program while yet enrolled in a baccalaureate program) may be granted to any WMU senior who has an acceptable academic record (with a grade point average of 3.0 or better for the two years prior to graduate admission date) and who has no more than 15 credit hours remaining for completion of the bachelor’s degree.

Once granted dual enrollment status, the student may enroll in a maximum of 12 credit hours of graduate course work that has been approved by the appropriate departmental advisor in addition to those undergraduate courses required to complete the bachelor’s degree.

Dual enrollment is permitted for the calendar year only, and no graduate credit earned in this way may be used to meet undergraduate requirements. If the bachelor’s degree is not completed in the period of one calendar year, the student may not continue on dual enrollment.

A student must request dual enrollment status on the application for admission to a master’s degree program and must have received an audit for graduation with the undergraduate degree in order to determine eligibility; however, official entry is not immediate. Graduate credits earned accumulate but the official entry date must follow the semesters or sessions of dual enrollment status and the completion of the bachelor’s degree.

Dual enrollment is distinguished from enrollment in an accelerated master's degree program by the following: it can be used for any graduate degree program; the dual enrollment applicant must have applied for graduation with the bachelor's degree and be within 15 credit hours and one year of graduation; and the graduate coursework is not counted toward both the bachelor's and master's degrees. (See also **Accelerated graduate degree program**, above.)

Elective
A course which will count as credit toward a degree, if approved by the advisor, but is not specified in the program's course requirements.

Emphasis
See **Concentration** above.

Experiential Learning
Western Michigan University defines "experiential learning" as that which "informs many methodologies, in which educators purposefully engage with students in direct experience and focused reflection in order to increase knowledge, develop skills, clarify values, and develop people's capacity to contribute to their communities" [Association for Experiential Education and United Nations Educational, Scientific and Cultural Organization (UNESCO)]. Experiential leaning includes, but is not limited to:

Service Learning: Service learning is a mutually beneficial endeavor in which course learning objectives are met by addressing community-identified needs--putting academics into practice.
Co-Curricular Learning: Co-curricular learning takes place outside formal academic studies. It is similar to volunteerism, but includes structured reflection.
Volunteerism: Refers to work done without financial remuneration in order to give back to the community and may be completed by individual students or organized group activities. It may be done on a voluntary basis or as required for an academic course, program or other campus organization.

Family Educational Rights and Privacy Act (FERPA)
This act limits information which can be disclosed about individual students' records without their written permission to general Directory information (name, address, telephone number, curriculum, and major field of study). All requests for information beyond Directory information should be referred to the Registrar's Office.

Fellowship
A University-administered stipend awarded by an academic or service unit within the University or by another donor to an appointed graduate student who is enrolled in a program leading to a graduate degree. Fellowships do not typically have a service requirement, but this may vary for some fellowship programs. The fellowship stipend is a gift to help the Fellow achieve an educational goal, rather than a payment for services. In order to remain on appointment, the Fellow must maintain good academic standing.

Field experience, practicum, work experience, co-op, internship
Field experience: actual practice, often away from the college campus, in a practical or service situation. In a teacher education program, it is usually conducted in schools.

Practicum: 1) a course of instruction aimed at closely relating the study of theory and practical experience, both usually carried on simultaneously; 2) an academic exercise consisting of study and practical work; and 3) supervised experience in counseling or a similar activity through such procedures as role-playing, recorded interviews, abstraction analysis, and supervisory evaluation with interviewing techniques.

Work experience, co-op, or internship: a sponsored learning experience in an occupational area for persons preparing for full-time employment, conducted in connection with a course of study, where the students spend a part of their time on an actual job in a school, business, or industry.

Full-time student
For all graduate students taking courses for a stated degree or certificate program, six hours constitutes full-time

status, five hours constitutes three-quarter time status, and three hours constitutes half-time status in Fall and Spring semesters. In the Summer I and Summer II sessions, three hours in either session constitutes full-time status for that session and two hours constitutes half-time status. Three-quarter time status is not available for sessions.

Full-time load requirements for the health fee assessment, loan deferments, and for financial assistance are not necessarily the same as that described above. See the graduate catalog or call the appropriate office for specific requirements. See **Class or credit hour load** above.

GAPDAC
The Grade and Program Dismissal Appeals Committee (GAPDAC) renders the final decision on student grade and program dismissal appeals. The complete policy is contained in this catalog in the section entitled Student Rights and Responsibilities.

Gate course
A course in fundamentals in which a student must achieve a specified grade or "Credit" in order to qualify for enrollment in more advanced courses.

Good standing
See **Academic standing** above.

Grade Appeal
See **GAPDAC** above.

Grade point
The numerical value given to letter grades. "A" is equivalent to 4 points; "BA" to 3.5 points; "B" to 3 points; "CB" to 2.5 points; "C" to 2.0 points; "DC" to 1.5 points; and "D" to 1.0 point. An "E" or "X" is equivalent to zero points.

Grade point average (GPA)
A scholastic average of letter grades computed by dividing total honor points by total credit hours attempted. See also **Honor points** below.

Graduate Center for Research and Retention
A designated unit within the Graduate College that provides mentoring, guidance and support to all graduate students during their trajectory to the graduate degree, and especially at the dissertation/thesis phase of their programs. Refer to www.wmich.edu/grad for additional information.

Graduate certificate program
See **Certificate program** above.

Graduate credit
See **Credit** above.

Graduate faculty
Faculty who are approved to perform the functions of graduate education, to include teaching graduate courses, advising graduate students, and serving on graduate student committees. Only members of the graduate faculty may serve on thesis, specialist project, and dissertation committees.

Graduate Research and Creative Scholars Award
The Graduate Studies Council and the Graduate College annually present recognition awards in two categories to graduate students to recognize achievement in research and creative activity: the Department Graduate Research and Creative Scholars Award and the All-University Graduate Research and Creative Scholars Award. These awards acknowledge graduate students' contributions to the scholarly and artistic productivity of Western Michigan University. Each department with a graduate program may nominate one graduate student for each level of degree

offered by the department; by virtue of this nomination, the student will be designated as a Department Graduate Research and Creative Scholar. From among the Department awardees, a faculty committee will select those students whose research or creative activity has exceptional merit to be designated as All-University Graduate Research and Creative Scholars.

Graduate Student Association
The Graduate Student Association (GSA) is a standing committee of the Graduate Studies Council. It reviews services and needs of graduate students; makes recommendations to appropriate officials and offices; recommends graduate students for appointments to University councils and committees; and serves as liaison between departmental graduate student organizations, the Graduate Studies Council, and the dean of the Graduate College.

Graduate Student Permanent Program of Study
A Graduate Student Permanent Program of Study is a document composed by a graduate student's program advisor, listing all courses and other requirements necessary for completion of the degree program to which the student was admitted. The program of study is approved by the program advisor and the department/school/unit chairperson or director, filed in the student's academic folder in the Registrar's Office, and used to audit the student's eligibility for the degree at the time the student applies for graduation. Master's and Specialist programs of study must be filed prior to the student's completion of 12 hours. Doctoral programs of study must be filed prior to the student's completion of 18 hours or by the end of the second semester of enrollment.

Graduate Studies Council
The Graduate Studies Council of the Faculty Senate reviews, develops, and recommends policy regarding graduate education at Western Michigan University.

Graduate Teaching Effectiveness Award
The Graduate Studies Council and the Graduate College annually present recognition awards in two categories to graduate students to recognize achievement in teaching excellence: the Department Graduate Teaching Effectiveness Award and the All-University Graduate Teaching Effectiveness Award. These awards acknowledge graduate students' contributions to the teaching mission of Western Michigan University. Each department with a graduate program may nominate one graduate student for each level of degree offered by the department; by virtue of this nomination, the student will be designated as a Department recipient of the Graduate Teaching Effectiveness Award. From among the Department FRACAAs, a faculty committee will select those students whose teaching activity has exceptional merit to be designated as All-University recipients of the Graduate Teaching Effectiveness Award.

Graduation audit
A formal, required evaluation of the student's academic record and program of study to determine the student's eligibility for graduation. The audit, initiated by a student's application for graduation, determines whether all University, degree, and program requirements have been met satisfactorily. A separate audit is required for each degree or graduate certificate to be received; for instance, a student graduating with both a master's degree and a graduate certificate must make separate application and receive a separate audit for each. See also **Audit** above.

Deadlines for all degree recipients to apply for graduation are August 1 for December graduation, December 1 for April graduation, February 1 for June graduation, and February 1 for August graduation.

Students who change a graduation date need to notify the Registrar's office. No fee for the change is required. The Registrar's Office will not change a student's graduation date unless the student notifies them.

Students must be enrolled during the term of graduation.

Grant
Financial assistance, usually based on need and not required to be repaid, awarded to a student.

Guidelines for the Preparation of Theses, Specialist Projects, and Dissertations
The University's official formatting guide for master's theses, specialist projects, and doctoral dissertations, published by the Graduate College. This publication is available for downloading from the Graduate College website.

Hold
A restraint placed on a student's ability to register for classes as a result of an unfulfilled monetary obligation or other action by the University.

Honor points
A numerical value of the letter grade and credit earned in a course, determined by multiplying the grade point earned in the course by the number of credit hours for the course. See also **Grade point** above.

Human Subjects Institutional Review Board of Western Michigan University (HSIRB)
All research involving contact with human research subjects requires *prior* approval by the Human Subjects Institutional Review Board of Western Michigan University. No research involving human subjects is exempt from review by this Board. For more information, see http://wmich.edu/research/compliance/hsirb or telephone the Research Compliance Officer in the Office of the Vice President for Research, 387-8298.

Identification Card
The Bronco Card is the student's photo identification card at WMU. In addition, the Bronco Card is the student's access card for the library, dining areas, Student Recreation Center, and computer centers and is a security access card for buildings on campus.

The Bronco Card also enables the student to ride for free on the Metro Bus Service on any route around the Kalamazoo area.

The Bronco Card has the size, look, and feel of a credit card. Included on the card are the student's picture and signature. On the back of the card is a magnetic strip, used for authentication.

The Bronco Card will serve the student as a University ID for as long as the student remains at WMU.

Inactive admission status

A student's admission status becomes inactive one year after the student's last enrollment. Admission will be canceled and re-admission required for any student not enrolling after one year. After seven years of inactivity, the student's permanent record folder is destroyed.

Incomplete
A temporary course grade ("I") granted by an instructor when illness, necessary absence, or other reasons beyond the control of the student prevent completion of course requirements by the end of the semester or session. An "I" may not be given as a substitute for a failing or low grade. Incomplete grades for graduate students will convert to an "X" if not removed within one calendar year, or sooner if so stipulated by the instructor. Extensions for a second year must be approved by the graduate dean.

An instructor who assigns a grade of "I" will submit a Report of Incomplete Grade Form located on the faculty menu in GoWMU indicating the remaining requirement for removal of the incomplete grade and indicating the time allowed, if less than one year. An e-mail will be automatically generated to the student, the Registrar’s Office as well as an e-mail confirmation sent to the instructor.

Independent study
Enrollment in an appropriately designated, variable credit course for a specific plan of study, authorized and supervised by a designated, consenting faculty member. Normally, it is a project designed to allow a student (or a small group of students) to investigate areas of interest not within the scope of a regular course or to obtain an

educational experience outside that normally offered by a regular course. A contract is developed between a faculty member and a student to obtain the experience or to complete research on a specific topic. In an independent study class, the student works *independently* on a plan of study, not in a class scheduled to meet regularly in a specific location at a specific time such as a lecture, lab, lecture/lab/discussion, or seminar. The meeting hours to the class are "arranged".

The faculty member is the responsible custodian of the project, obliged to provide guidance, assistance, criticism, suggestion, and evaluation, and shall be the instructor of record who is responsible for turning a grade into the Registrar's Office. See also **Readings course** below.

Institute
An organizational unit similar in nature to a center, as defined above, but which may be degree-granting. Typically an institute will be interdisciplinary. Course work for a degree offered through an institute may include some courses offered by the institute itself, but primarily will be comprised of courses in various disciplines/departments already in existence.

Institutional Animal Care and Use Committee of Western Michigan University (IACUC)
The use of any vertebrate animals in research, testing, or instructional projects requires *prior* approval by the Institutional Animal Care and Use Committee of Western Michigan University. For more information, see http://wmich.edu/research/compliance/animals or telephone the Research Compliance Officer in the Office of the Vice President for Research, 387-8298.

Institutional Biosafety Committee of Western Michigan University (IBC)
Any activity involving the construction or handling of recombinant DNA molecules or organisms and viruses containing recombinant DNA molecules requires *prior* notification or approval from the Institutional Biosafety Committee of Western Michigan University. For more information, see http://wmich.edu/research/compliance/biosafety or telephone the Office of the Vice President for Research, 387-8298.

Interdisciplinary
A term designating a combination of subject matter from two or more disciplines within a course or program.

International Student Services, Office of (OISS)
OISS is responsible for all activities related to the admission of international graduate students, including interpretation of foreign educational transcripts and certification of English language proficiency.

Internship
Work in a firm or agency related to a student's degree program and/or career plans. Usually involves earning college credit and may involve receiving payment. See also **Field experience, practicum, work experience, co-op, internship** above.

Late drop
An official procedure for withdrawing from individual classes without removing registration from all classes that takes place after the last day to drop a course without academic penalty.

Leave of Absence
WMU supports a leave of absence policy to assist graduate students who are temporarily unable to continue their programs. The leave of absence may extend consecutively for up to two semesters and two sessions. Students may request information about the application process from their advisor or view the application form on the Graduate College website forms page. See Graduate Leave of Absence section.

Michigan Intercollegiate Graduate Studies (MIGS) Program
An admissions category for guest graduate students from all Michigan institutions offering graduate degree programs to take advantage of unique educational opportunities on the campuses of other institutions. Western

Michigan University participates in this program. No admission application or application fee is required. Both courses and credit hours transfer to WMU for courses taken under the MIGS program. See the Graduate College website forms page or contact the MIGS liaison in the Graduate College for further information.

Michigan residence requirements
The requirements for identifying or establishing permanent residence in Michigan for tuition assessment purposes. Official changes in student residency are approved by the Office of the Assistant Vice President for Business. For more information, see the "Student Rights and Responsibilities" section in this catalog.

Multiple topic or umbrella course
A variable topic, variable credit course that focuses on a current or a special interest in a specific field or academic area. The course may be repeated for credit with different topics.

Name Change
Students may maintain academic records under the name used at the time of admission. However, any active student desiring to make an official name change must report to the Registrar's Office, third floor Seibert Administration Building to record the change. Legal proof is required.

Non-degree student
A non-degree student is one who has been admitted to a non-degree category and is not otherwise seeking a master's, specialist, or doctoral degree.

Part-time student
See **Class or credit hour load** above.

Permission to Elect
A student who intends to register for Master's Thesis (7000), Specialist Project (7200), or Doctoral Dissertation (7300) for the first time is required to file a completed Permission to Elect form (available on the Graduate College website forms page) with the Graduate College before registering to ensure that the student is informed about the regulations pertaining to the preparation and submission of the manuscript and the requirements for research involving regulated subjects and hazardous materials

Portfolio
A portfolio is a collection of work (e.g., paintings, writings, etc.) that may be used to demonstrate competency in an academic area.

Practicum
See **Field experience, practicum, work experience, co-op, internship** above.

Prerequisite
A requirement, often the completion of a prescribed course or courses, which must be met before a student may register for another specific course. See also **Corequisite** above.

Prerequisite with concurrency
A requirement, usually the completion of another course, which may be taken at the same time as the course it is a prerequisite for.

Probation
As a condition of academic standing: A student will be placed on probation if the student's overall grade point average falls below 3.0. See also **Academic standing** above.

Program Dismissal Appeal
See **GAPDAC** above.

Program of study (Graduate Student Permanent Program)
A program of study is a document listing the course and other requirements necessary to earn a graduate degree in a specific discipline. The program of study is composed by the advisor and the student, and approved by the graduate dean as meeting all University, program, and degree requirements. The program of study is used to conduct the graduation audit, and therefore must be filed well in advance of the student's application for graduation: Master's and Specialist programs of study must be filed prior to the student's completion of 12 hours; Doctoral programs of study must be filed prior to the student's completion of 18 hours or by the end of the second semester of enrollment.

Project committee
See **Academic Requirements: Composition and Role of Thesis, Project, and Dissertation Committees** section.

ProQuest/UMI
All doctoral dissertations written at Western Michigan University are required to be published and available to a public audience. The common method of publication is to have ProQuest/UMI Dissertation Publishing microfilm the dissertation and have it available for dissemination to scholars and researchers around the world.

Provisional Admission
Provisional Admission is granted to the student who meets many of the admission requirements to the University and is expected to be formally admissible. Enrollment status is provisional until additional documents or materials for acceptance in the "General Admission" category are provided. Examples of missing documentation could be a final transcript from another institution where a degree was recently completed or a completion record of a specific placement examination. The time period for any "Provisional Admission" may not exceed one year from the time of initial status with ineligibility for further enrollment after that year.

Quarter or Term hour
A unit of academic credit, usually representing one hour of class time per week for one quarter or term. A "quarter" or "term" is a unit of time, usually 10 to 12 weeks long, in the academic calendar of an institution. Western Michigan University uses the semester calendar. See also **Semester hour** below.

Radiation Safety Committee (RSC)
All uses of radioactive material, including research-related uses, must be approved by the Radiation Safety Committee *prior* to initiation. For more information, see http://wmich.edu/research/compliance/radiation or telephone the Radiation Safety Officer in the Office of the Vice President for Research, 387-8298.

Readings course
A form of independent study, designed to provide a graduate student with an opportunity to read intensively within an area in which further knowledge would be appropriate. The course is not designed to be a basic core requirement in any master's degree program. Enrollment in the appropriately designated course (5980, in most departments) requires a specific plan of study, authorized and supervised by a consenting faculty member, which includes the amount of reading, a description of the student's reporting method(s), and the number of credit hours to be earned by the completion of the plan of study. The grading procedure should be the same as that in any graduate course. The maximum number of credits allowed to be earned and applied to a degree program is four, whether the readings course credits are all taken in one department or more than one, and the grade earned will be a letter grade.

Readmission
An enrollment procedure administered by the Office of Admissions that is followed by a student who was previously enrolled in good standing at Western Michigan University but who has not been enrolled for one year or more. Process used by dismissed students, or by students whose "active admission status" has lapsed, to obtain again admission to a degree program or to Non-degree status.

Recombinant DNA Biosafety Committee (RDBC)
All research that involves recombinant DNA molecules must be reviewed and approved by the Recombinant DNA Biosafety Committee *prior* to initiation. For more information, see http://wmich.edu/research/compliance/biosafety or telephone the Research Compliance Officer in the Office of the Vice President for Research, 387-8298.

Registration
The process of enrolling in and paying tuition and fees for courses each semester or session. For a full explanation of the registration procedures and regulations, consult the Registrar's website.

Reinstatement
An appeal procedure for a student who has been dismissed or who seeks to be continued on probation. Reinstatement must be sought from the academic program's admission and a recommendation for reinstatement sent to the Graduate College for approval before the student will be allowed to register.

Repeated course
With the exception of courses that are approved by the University Curriculum Review Policy as repeatable for credit (e.g., multi-topic or umbrella courses), no more than two courses may be retaken and no course may be repeated more than once during the student's graduate career (inclusive of both master's and doctoral programs) at WMU. This number may be further limited by individual departments. Permission to retake a course must be obtained from the program advisor and graduate dean before registration for the course to be repeated takes place. The original grade for the course will remain on the student's transcript, and both the original and repeated course grade will be computed into the degree program grade point average. Any course in which a student may have been enrolled more than once is considered a repeated course. A grade is presented in each course and included on the student's record. With the advisor's approval, the grade and credit earned in the repeated course may count, if approved by the graduate dean, toward curricular or degree requirements at the time of graduation.

Research tool
An acquired ability that serves in the manner of a tool that assists in one's research. Doctoral students are expected to acquire the ability to use two research tools, at minimum. The two research tools, are to be designated by the department and approved by the University curriculum review process, and are required in each doctoral student's program of study. Normally, the research tools are selected from among foreign language, statistics, research methodology, and computer programming, although other tools are acceptable in some doctoral programs, however, must be approved by the University curriculum review process. Consult the program advisor for a full explanation.

Residency requirement
Specialist program: Unless otherwise approved by the University for an individual academic unit, the general residency requirement for specialist students is one academic semester of full-time study on campus or enrollment in two sessions in consecutive years and the intervening semesters. Consult the program advisor for complete information.

Doctoral program: There is no general residency requirement for doctoral students. Each doctoral program or degree granting unit (e.g., college) may, however, with approval of the University through the curriculum review process, establish its own residency requirement. Students must meet any such residency requirement prior to approval for candidacy. Students should consult with their advisor regarding the residency requirement for the specific program of interest.

School
A single-discipline unit which has an identification in the public mind beyond that of a department. Schools may have significant subdivisions such that students will apply for admission and take degrees through the subdivision rather than through the central unit as a whole.

Semester
A unit of time, 15 weeks long, in the academic calendar of Western Michigan University. The semesters occur in the fall and the spring. See also **Session** below.

Semester hour
One hour of classroom (50 minutes) or direct faculty instruction and a minimum of two hours of out of class student work each week for approximately fifteen weeks for one semester hour of credit; or at least an equivalent amount of work for other academic activities as established by the institution including laboratory work, internships, practica,

studio work, and other academic work leading to the award of credit hours. See also **Credit hour and Quarter or Term hour** above.

Senior citizen, SCOPE admission status
A special non-degree admission status for persons sixty-two years of age or older that provides senior citizens with opportunities for non-degree study at Western Michigan University. Participants may register in one regularly scheduled class each semester on a seat-available basis. See http://wmich.edu/registrar/students/scope for more information.

Service Learning
Service learning is a mutually beneficial endeavor in which course learning objectives are met by addressing community-identified needs--putting academics into practice. (See **Experiential Learning**)

Session
A unit of time, 7 ½ weeks long, in the academic calendar of Western Michigan University. The sessions occur in summer I and summer II. See also **Semester** above.

Thesis committee
See **Academic Requirements: Composition and Role of Thesis, Project, and Dissertation Committees** section.

Three-quarter time student
See **Class or credit hour load** above.

Time limit for completion of a degree
All work, including transfer work, for the graduate certificate, master's students must elect and complete all work for the degree within six years preceding the date on which the master's degree is conferred; specialist students entering with a master's degree, within five years preceding the date on which the specialist degree is conferred; specialist students entering with a bachelor's degree, within six years preceding the date on which the specialist degree is conferred; doctoral students, within seven years preceding the date on which the doctoral degree is conferred. All transfer credit included in the program of study must also have been completed within these time limits. Students whose degrees are taken primarily through part-time study have the option of requesting an extension from the graduate dean; extensions may also be granted for other students by the graduate dean for such legitimate reasons as illness, injury, or hardship. The form to request a time extension for completion of a degree is available on the Graduate College website forms page.

Transcript
A transcript is a printed copy of a student's permanent academic record at a particular institution. The transcript, at minimum, lists all courses taken and credit hours and grades earned, and degrees received.

Transfer credit (graduate)
Credit (graduate) that is earned at another accredited institution and accepted toward a Western Michigan University graduate degree, if approved by the program advisor and if the earned grade in the course is "B" or better. The credit, moreover, must be earned within a six-year period prior to graduation from Western Michigan University with a master's or specialist degree or within seven years prior to the conferral of the doctoral degree. Grades or honor points earned at another institution do not transfer to WMU and hence do not affect the WMU grade point average (with the exception of the MIGS program; see **MIGS** above).

Transfer credit evaluation form
An official form which indicates approval of a request to transfer credit and which states the number and type of transfer credit awarded. Credit is not transferred nor applied to a program of study unless the transfer credit evaluation form is completed and approved by the program advisor and the credit evaluator in the Admissions Office.

Tuition
The amount of money paid for courses based on the number of credits for which the student registers and the student's residency status.

Umbrella course
See **Multiple topic course** above.

Unit definitions
Center: An organizational unit formed for purposes of linkage and visibility, focused on a theme, issue, or set of skills. A center will frequently be interdisciplinary in nature. A center does not offer degree programs but may, on rare occasions, offer a course or courses.

Institute: An organizational unit similar in nature to a center, as defined above, but which may be degree-granting. Typically an institute will be interdisciplinary. Course work for a degree offered through an institute may include some offered by the institute itself, but will be primarily comprised of courses in various disciplines/departments already in existence.

School: A single-discipline organizational unit which has an identification in the public mind beyond that of the department. Schools may have significant subdivisions such that students will apply for admission and take degrees through the subdivision rather than through the central unit as a whole.

University Microfilms, Inc. (UMI)
See **ProQuest/UMI** above.

Variable credit course
Some courses list a range of credit hours (e.g., 1 to 4 hours) for which the course may be elected, and as such are called "variable credit" courses. Students will determine, in prior consultation with the course instructor or the program advisor, the specific number of course credit hours to elect during the registration period.

Volunteerism
Refers to work done without financial remuneration in order to give back to the community and may be completed by individual students or organized group activities. It may be done on a voluntary basis or as required for an academic course, program or other campus organization. (See **Experiential Learning**)

Withdrawal
An official procedure for withdrawing from the University for at least the remainder of the current semester or longer. The deadline for the last day to withdraw from all courses without academic penalty (grade of "W" is on the transcript) is noted each semester or session on the Registrar's website. Students who do not follow the official procedure when withdrawing from the University will earn the grade of "X" for all courses; the "X" grade carries no honor points and affects the grade point average in the same manner as an "E" or failing grade.

"X" grade
The symbol "X" on a student's transcript indicates that the student has never attended the class or has discontinued attendance and does not qualify for any other grade, including an "I" grade. The "X" grade carries no honor points and affects the grade point average in the same manner as an "E" or failing grade. Incomplete grades for graduate students will convert to an "X" if not removed within one calendar year, or sooner if so stipulated by the instructor. See **Incomplete** above.

Colleges and Programs

College of Arts and Sciences

Carla Koretsky
Dean

James Cousins
Associate Dean

Heather Petcovic
Associate Dean

Graduate Certificate Programs
Comparative Religion

- Certificate Program in Spirituality, Culture and Health

Geography

- Certificate Program in Geographic Information Sciences

Geosciences

- Certificate Program in Applied Hydrogeology

Medieval Institute

- Certificate Program in the History of Monastic Movements

Statistics

- Certificate Program in Applied Statistics, Interdisciplinary
- Certificate Program in Biostatistics

Graduate Masters Programs
Anthropology

- Master of Arts in Anthropology – no longer accepting students

Biological Sciences

- Master of Arts in Biological Sciences
- Master of Science in Biological Sciences

Chemistry

- Master of Science in Chemistry

Communication, School of

- Master of Arts in Communication

Comparative Religion

- Master of Arts in Comparative Religion
- Master of Arts in Spirituality, Culture and Health

Economics

- Master of Arts in Applied Economics
- Master of Arts in Applied Economics: Economic Development
- Master of Arts in Applied Economics: Statistics and Econometrics

English

- Master of Arts in English

- Master of Arts in English with an Emphasis on Professional Writing
- Master of Arts in English with an Emphasis on Teaching
- Master of Fine Arts in Creative Writing

Geography
- Master of Science in Geography

Geosciences
- Master of Arts in Earth Science
- Master of Science in Geosciences

History
- Master of Arts in History
- Master of Arts in History: Public History

Mathematics
- Master of Arts in Mathematics
- Master of Arts in Mathematics Education
- Master of Science in Applied and Computational Mathematics

Medieval Institute
- Master of Arts in Medieval Studies

Philosophy
- Master of Arts in Philosophy

Physics
- Master of Arts in Physics

Political Science
- Master of Arts in Political Science
- Master of International Development Administration
- Joint Doctor of Laws and Master of Public Administration

Psychology
- Master of Arts in Behavior Analysis
- Master of Arts in Industrial/Organizational Behavior Management

Public Affairs and Administration
- Master of Public Administration

Science Education, Mallinson Institute for
- Master of Arts in Science Education

Sociology
- Master of Arts in Sociology

Spanish
- Master of Arts in Spanish

Statistics
- Master of Science in Statistics

Graduate Accelerated Masters Programs
Communication, School of

- Master of Arts in Communication (Accelerated)

Geosciences

- Master of Arts in Earth Science (Accelerated)

Spanish

- Master of Arts in Spanish (Accelerated)

Statistics

- Master of Science in Statistics (Accelerated)

Graduate Doctoral Programs
Biological Sciences

- Doctor of Philosophy in Biological Sciences

Chemistry

- Doctor of Philosophy in Chemistry

Economics

- Doctor of Philosophy in Applied Economics

English

- Doctor of Philosophy in English

Geosciences

- Doctor of Philosophy in Geosciences

History

- Doctor of Philosophy in History

Mathematics

- Doctor of Philosophy in Mathematics

Physics

- Doctor of Philosophy in Physics

Political Science

- Doctor of Philosophy in Political Science

Psychology

- Doctor of Philosophy in Behavior Analysis
- Doctor of Philosophy in Industrial/Organizational Behavior Management
- Doctor of Philosophy in Clinical Psychology

Public Affairs and Administration

- Doctor of Philosophy in Public Administration

Science Education, Mallinson Institute for

- Doctor of Philosophy in Science Education
- Doctor of Philosophy in Science Education: Biological Sciences
- Doctor of Philosophy in Science Education: Chemistry
- Doctor of Philosophy in Science Education: Geosciences

- Doctor of Philosophy in Science Education: Physical Geography
- Doctor of Philosophy in Science Education: Physics

Sociology
- Doctor of Philosophy in Sociology

Spanish
- Doctor of Philosophy in Spanish

Statistics
- Doctor of Philosophy in Statistics

Vision
Our vision is to achieve excellence in all aspects of learning and discovery across the humanities, social sciences, and sciences while fostering a climate of intellectual freedom, diversity, and inclusion.

Mission
Our mission is to ignite and sustain a passion for learning and discovery in the humanities, social sciences, and sciences, to help students, staff, and faculty succeed in life and contribute to the betterment of our local and global communities.

Africana Studies

Linwood Cousins, Director
Main Office: 3070 Moore Hall
Telephone: (269) 387-2668

Onaiwu Ogbomo

Anthropology

James Cousins, Interim Chair
Main Office: 1005 Moore
Telephone: (269) 387-3969
Fax: (269) 387-3970

Jon Holtzman
Bilinda Straight

Master of Arts in Anthropology
Advisor: Vincent Lyon-Callo
Room 1022, Moore Hall

Western Michigan University's Anthropology (M.A.) program provides students with essential training in critical thinking, writing for diverse audiences, and holistic thinking to prepare them for both living and working in a diversity of settings. Students in our M.A. program benefit from both extensive exposure to social theory and experiential learning focused on putting that theory into practice through research. Students learn through seminars focused on social theory, classes in research methods, field experiences in conducting research, and experiential learning courses. Underlying everything the department does is a firm commitment to a public anthropology of, and for, social justice. Our former students work in museums, pursue further training in top academic programs in public health, social work, historical archaeology, medicine, labor studies, creative writing, and law, pursue careers in a range of government agencies and non-profit organizations, work in community resource management, and play important roles working toward crafting socially and ecologically sustainable communities.

Admission Requirements
1. Students should have completed a major or minor in Anthropology. Other students will be considered but may be required to enroll in undergraduate prerequisite course work or to complete reading lists in subfields in which they have no background.
2. Accumulation of a grade point average of at least 3.0 during the final two years of undergraduate work.
3. Three letters of recommendation are required from persons able to assess the applicant's academic record, potential for success in a Master of Arts program in Anthropology, and suitability for an assistantship in this discipline. These letters should be submitted directly to the graduate advisor.
Each applicant must submit to the graduate advisor a one-page statement outlining his or her career goals and interests in anthropology.

Program Requirements
Students have the option of either a Thesis or an Internship Track

Thesis Track
1. Complete at least thirty-three hours in anthropology. Cognate courses may be substituted with approval from the graduate advisor.

2. The following are required
ANTH 5900 - Anthropology as a Profession Credits: 3 hours
ANTH 6040 - Integrating Anthropology Credits: 3 hours
ANTH 6200 - Anthropological Theory Credits: 3 hours

3. Complete at least one of the following:
ANTH 5040 - Archaeological Research Methods Credits: 3 hours or
ANTH 5300 - Research Methods Credits: 3 hours or
ANTH 5400 - Ethnographic Research Methods Credits: 3 hours

4. Complete an acceptable master’s thesis
ANTH 7000 - Master's Thesis Credits: 6 hours

Internship Track
1. Complete at least thirty-three hours in anthropology. Cognate courses may be substituted with approval from the graduate advisor.

2. The following are required
ANTH 5900 - Anthropology as a Profession Credits: 3 hours
ANTH 6040 - Integrating Anthropology Credits: 3 hours
ANTH 6200 - Anthropological Theory Credits: 3 hours

3. Six hours of Internship or Practicum is required
ANTH 6990 - Independent Research in Anthropology Credits: 1 to 3 hours

Biological Sciences

John Spitsbergen, Chair
Main Office: 3425 Wood Hall
Telephone: (269) 387-5600
Fax: (269) 387-5609

Todd Barkman
Wendy Beane
Bruce Bejcek
Devin Bloom
Christine Byrd-Jacobs
Kathryn Docherty
Jacqueline Eng
Karim Essani
Robert Eversole
John Geiser
Sharon A. Gill
Pamela Hoppe
Charles Ide
John Jellies
Donald Kane
David Karowe
Steven L. Kohler
Cindy L. Linn
Yan Lu
Stephen Malcolm
Silvia Rossbach
David W. Rudge
Brian Tripp
Maarten Vonhof
Jian Yao

Master of Arts in Biological Sciences

Advisor: Silvia Rossbach,
3923 Wood Hall

The Master of Arts in Biological Sciences is a non-thesis, coursework-based degree covering the broad areas of biology. The program is designed to provide flexibility in coursework to enhance student's breadth and depth in numerous sub-disciplines in biology while meeting individual needs and interests. The degree may serve as preparation for continued graduate or professional study or for positions in the private or public sector.

Admission Requirements
To be admitted into the master's program, both departmental and University requirements must be met. Application materials must be obtained from both the Department of Biological Sciences at wmich.edu/biology/academics/master-arts or (269) 387-5600 and the Office of Admissions at www.wmich.edu/apply/graduate/ or (269) 387-2000 for domestic students or Office of International Services and Student Affairs at wmich.edu/internationaladmissions/apply or (269) 387-5865 for international students.

1. Completed university and departmental application forms, including fees;
2. Official transcripts from all colleges and universities previously attended, indication that the applicant has
    a. earned a bachelor's degree from an accredited institution with an overall grade point average of at least 3.0 and
    b. taken appropriate courses in biology, chemistry, physics, and mathematics;

3. Official scores for the verbal, quantitative, and analytical sections of the Graduate Record Exam (GRE) general test, or of the Medical College Admission Test (MCAT), or of the Dental Admission Test (DAT), or of the Veterinary College Admission Test (VCAT) submitted to the Office of Admissions;
4. Three letters of recommendation;
5. A cover letter highlighting the student's accomplishments to date and indicating how graduate work at Western Michigan University will further the applicant's career goals.

Program Requirements
The Master of Arts in Biological Sciences requires 30 hours of coursework. A minimum of 15 hours of these credits must be at the 6000-level or above.

1. Minimum Grade Requirement
The student must receive a grade of "B" or better in their graduate courses.

2. Graduate Core Courses
Master's students are required to take three of the following six graduate core courses:

BIOS 6110 - Eukaryotic Cell Biology Credits: 3 hours
BIOS 6120 - Prokaryotic Cell Biology Credits: 3 hours
BIOS 6130 - Animal Physiology Credits: 3 hours
BIOS 6140 - Plant Physiology Credits: 3 hours
BIOS 6150 - Ecology Credits: 3 hours
BIOS 6160 - Evolution Credits: 3 hours

3. Colloquium
Each student in required to take two hours of:

BIOS 6050 - Biological Sciences Colloquium Credits: 1 hour

4. Electives
Nineteen credit hours of elective courses are required. Elective courses are selected with the advice and approval of the Graduate Advisor. Electives are selected from biological sciences or approved cognate courses. Up to nine credit hours of coursework in related areas from other departments can be included.

Master of Science in Biological Sciences

Advisor: Silvia Rossbach,
3923 Wood Hall

The Master of Science in Biological Sciences enhances students' ability to plan, conduct, analyze, and report original research. Course work increases students' scientific preparation and supports their research. Through the advice of the students' major advisor, efforts are made to choose courses to meet individual needs and interests. The degree may serve as preparation for continued graduate or professional study or for positions in the private or public sector. Thesis and non-thesis options are offered; both require an original research project, although the final document is in different formats.

Admission Requirements
To be admitted into the master's program, both departmental and University requirements must be met. Application materials must be obtained from both the Department of Biological Sciences at wmich.edu/biology/academics/master-sciences or (269) 387-5600 and the Office of Admissions at www.wmich.edu/apply/graduate/ or (269) 387-2000 for domestic students or Office of International Services and Student Affairs at wmich.edu/internationaladmissions/apply or (269) 387-5865 for international students.

To be considered, an application must contain:

1. Completed University and Departmental application forms;
2. Official transcripts from all colleges and universities previously attended, indicating that the applicant has
    a. earned a Bachelor's degree from an accredited institution with an overall grade point average of at least 3.0, and
    b. taken appropriate courses in biology, chemistry, physics, and mathematics;
3. Official scores for the verbal, quantitative, and analytical sections of the Graduate Record Exam (GRE; these must be submitted to the Office of Admissions);
4. Three letters of recommendation; and
5. A cover letter highlighting the student's most important accomplishments to date and indicating how graduate work at Western Michigan University will further the applicant's career goals.
6. Although not required for admission, applicants are encouraged to contact individual faculty to discuss their research interests. Students with academic deficiencies may be provisionally admitted and required to address their deficiencies during the first year in the graduate program.

Program Requirements

The Master of Science in Biological Sciences (Thesis Option) requires 33 hours of course work, including preparing and defending a thesis in an oral examination and presenting research results at a departmental seminar.

The Master of Science in Biological Sciences (Non-Thesis Option) requires 33 hours of course work, including presentation of research results at a departmental seminar, defense of research results in an oral examination, and preparation of a manuscript suitable for publication in a refereed journal (in consultation with the student's thesis committee).

1. Required Courses (6 hours)

Choose two of the following courses, one from at least two of the three pairs listed below:

BIOS 6110 - Eukaryotic Cell Biology Credits: 3 hours
or
BIOS 6120 - Prokaryotic Cell Biology Credits: 3 hours

BIOS 6130 - Animal Physiology Credits: 3 hours
or
BIOS 6140 - Plant Physiology Credits: 3 hours

BIOS 6150 - Ecology Credits: 3 hours
or
BIOS 6160 - Evolution Credits: 3 hours

In addition, each student is required to take 2 hours of:
BIOS 6050 - Biological Sciences Colloquium Credits: 1 hour

2. Elective Courses (19 hours)

Elective courses are selected with the advice and approval of the student's advisory committee.
Electives are selected from Biological Sciences or approved cognate courses.

3. Research Requirement (6 hours)

Thesis Option:
BIOS 7000 - Master's Thesis Credits: 6 hours

Non-Thesis Option:
BIOS 7100 - Independent Research Credits: 6 hours

Doctor of Philosophy in Biological Sciences

Advisor: Silvia Rossbach,
3923 Wood Hall

The Doctor of Philosophy in Biological Sciences at Western Michigan University offers a unique combination of traditional research experience, breadth of course work, and training in effective communication of scientific concepts. This program is specifically designed for students who wish to pursue careers in the biological sciences that require excellence in both teaching and research. In addition, the pedagogy requirements also provide excellent training for careers in government and industry. Additional information may be obtained from the Departmental Graduate Secretary or Graduate Advisor.

Admission Requirements

To be admitted into the doctoral program, both departmental and University requirements must be met. Application materials must be obtained from both the Department of Biological Sciences at wmich.edu/biology/academics/doctorate or (269) 387-5600 and the Office of Admissions at www.wmich.edu/apply/graduate/ or (269) 387-2000 for domestic students or Office of International Services and Student Affairs at wmich.edu/internationaladmissions/apply or (269) 387-5865 for international students.

Conditions stated under 1 or 2 below must be met for regular admission to the Biological Sciences Ph.D. program.

For persons possessing a bachelor's degree from an accredited college or university:

1. Grade point average of 3.2 or higher.
2. Official scores on the verbal, analytical, and quantitative sections of the Graduate Record Examination.
3. Appropriate courses in the biological, chemistry, physics, and mathematics.
4. Three letters of recommendation.
5. Availability of a potential dissertation advisor in an area of planned specialization.

For persons possessing a master's degree in one of the biological sciences from an accredited university:

1. Grade point average of 3.25 or higher in graduate level courses.
2. Official scores on the verbal, analytical, and quantitative sections of the Graduate Record Examination.
3. Three letters of recommendation.
4. Availability of a potential dissertation advisor in an area of planned specialization.
5. Cognate course work as given in 3 above in the bachelor's conditions section.

Note: Some course deficiencies in admission requirements may be completed after "admission with reservations." These deficiencies must be completed in addition to the minimum credit hours required for the Ph.D. All reservations, including course deficiencies, must be removed before advancement to candidacy.

Applicancy

Applicancy requirements are those of the Graduate College.

Committee Structure: By the end of the first year, or before taking the first independent research hours (BIOS 7350), a Dissertation Committee should be constituted. The Dissertation Committee will be composed of at least four members, including the major professor, two or more members of the Department of Biological Sciences, and one or more outside examiners.

Candidacy

No later than the end of the third calendar year after enrollment in the Ph.D. program, doctoral students must seek candidacy. By this time the student should have completed the research tools requirement. To be admitted to candidacy, the student must submit and defend, in an oral examination administered by the proposed Dissertation Committee, his/her dissertation research proposal. This proposal will be in the format of an NIH or NSF grant application. Student will be given a grade of pass or fail by the Dissertation Committee. In the event of failure, the proposal may be revised and re-defended once, and this must be done within one calendar year of failure.

Candidacy will be approved or denied by the Graduate Advisor based upon submission of an acceptable dissertation proposal, successful completion of the defense of that proposal, positive recommendations from a majority of the

student's Dissertation Committee, satisfactory performance in course work, and successful performance in all other professional activities, including teaching assignments.

General Plan and Sequence of the Program

1. Students will satisfy any curricular deficiencies beginning with the first semester in residence.
2. Core courses should be taken, after consultation with the Dissertation Committee, early in the program to assist in preparation of the research proposal.
3. Course work pertaining to teaching and Teaching Experiences should be initiated no later than the second year of graduate study.

Financial Assistance
The Department of Biological Sciences offers opportunities for financial support of doctoral students through Graduate Assistantships and Fellowships. Individuals desiring further information about such opportunities, or about the graduate program, should contact the Graduate Advisor and the Graduate College.

Program Requirements

1. A minimum of 61 graduate semester hours. These hours shall consist of the following:
a. A minimum of six hours of distribution credits from two of the following three pairs of courses (a total of at least 2 courses). As approved by the Dissertation Committee.
BIOS 6110 - Eukaryotic Cell Biology Credits: 3 hours
or
BIOS 6120 - Prokaryotic Cell Biology Credits: 3 hours

BIOS 6130 - Animal Physiology Credits: 3 hours
or
BIOS 6140 - Plant Physiology Credits: 3 hours

BIOS 6150 - Ecology Credits: 3 hours
or
BIOS 6160 - Evolution Credits: 3 hours

b. Three hours of:
BIOS 6050 - Biological Sciences Colloquium Credits: 1 hour

c. Three hours of the following:
SCI 6180 – Teaching and Learning in the College Science Classroom Credits: 3 hours

d. At least 19 hours of electives chosen from:
The graduate offerings of Biological Sciences or other departments appropriate to the student's career and research interests as agreed upon by the student and the Dissertation Committee.

e. Doctoral Research composed of:
BIOS 7350 - Graduate Research (at least 15 hours)
AND
BIOS 7300 - Doctoral Dissertation (at least 15 hours)

2. Satisfaction of the research tools requirement.

3. Successful completion and defense of the research proposal.

4. Successful oral defense of dissertation and approval of dissertation by the Dissertation Committee.

5. Any other requirements as specified by the Graduate College.

Chemistry

William Rantz, Interim Chair
Main Office: 3425 Wood Hall
Telephone: (269) 387-2846
Fax: (269) 387-2909

Megan Grunert Kowalske
Ramakrishna Guda
David L. Huffman
James Kiddle
Gellert Mezei
John B. Miller
Yirong Mo
Sherine Obare
Elke Schoffers
Donald R. Schreiber
Ekkehard Sinn
Susan R. Stapleton
Blair Szymczyna
Andre Venter

Financial Assistance
The Department of Chemistry offers opportunities for financial support of graduate students through several departmental, University, and grant-funded fellowships and teaching or research assistantships. Information and applications are available from the Department of Chemistry.

Master of Science in Chemistry

Graduate Advisor: Sherine O. Obare,
Room 3150, Wood Hall

Admissions Chair: Yirong Mo
Room 3434, Wood Hall

The Master of Science in Chemistry is a research degree planned to provide a broad background in the various fields of chemistry with concentration in one area.

Admission Requirements
Entrance requirements are those of the Graduate College. Students may be asked to take a test of spoken English proficiency based upon application materials and references. Application must be made both to the Office of Admissions, Graduate Admissions, and to the Department of Chemistry. Prospective students are required to take the Graduate Record Examination (GRE) General Test. Three letters of recommendation from academic or professional sources should accompany the application. Application material, including grade point average, transcripts, performance on GRE, and letters of recommendation will all be used in the determination of admission and financial support.

Program Requirements
After admission, students will be required to take placement examinations covering any three of the fields of Analytical, Inorganic, Organic, Physical Chemistry, and Biochemistry before they start classes. The entrance examinations are scheduled during the week preceding each semester. Students who score below a certain threshold on an examination are required to enroll in the corresponding undergraduate course, if available, or make specific arrangements with the appropriate departmental division. Enrollment in a 6000-level Chemistry course is not permitted unless the appropriate entrance requirement has been satisfied.

Each student will be required to prepare a literature presentation on a paper or papers from the current literature no later than the end of the third semester in the program. The student is required to complete a total of thirty credit hours with a minimum of twenty hours in the field of Chemistry, including the Master's Thesis. The Chemistry hours may total more than twenty depending on the student's background. The remaining hours up to at least thirty hours may be in a related field or fields. The course sequence will include (if not previously completed):

1. CHEM 5070 - Ethical Chemical Practice Credits: 3 hours

2. CHEM 5200 - Instrumental Methods in Chemistry Credits: 3 hours

3. One of the following:
CHEM 5150 - Inorganic Chemistry Credits: 3 hours
CHEM 5500 - Biochemistry I Credits: 3 hours
CHEM 5510 - Biochemistry I Laboratory Credits: 2 hours

4. Two 6000-level courses from two different divisions (6 hours)
(Analytical, Biochemistry, Inorganic, Organic, and Physical), including one course in the division of the Master's Thesis.

5. At least 3 credit hours of
CHEM 6900 – Special Investigations in Chemistry Credits: 1 to 6 hours

6. Master's Thesis
CHEM 7000 - Master's Thesis Credits: 6 hours

Additional Requirements
The requirement for any of the above 5000-level courses may be waived if the student has taken a corresponding course as an undergraduate.

The student is required to pass a final oral defense of his or her thesis administered by the student's graduate committee. The student is also required, as part of the graduate training in chemistry, to attend departmental seminars, colloquia, and symposia, and to participate in research within the department.

Doctor of Philosophy in Chemistry

The Doctor of Philosophy in Chemistry, with emphasis in environmental chemistry, is a research degree designed for persons intending to take a leadership role in teaching or research in applied areas of environmental chemistry. The program takes an innovative approach, using the skills and expertise provided by the traditional areas of chemical study as the foundation for addressing chemical processes occurring in the atmosphere, biosphere, hydrosphere, and lithosphere. The program is designed to offer flexibility so that a full-time student may complete the degree in four years and a nontraditional student may be accommodated around full-time employment. The educational goals of the program stress a well-rounded expertise in chemistry, as well as a literate acquaintance with another environmentally related discipline such as biological science, hydrogeology, or paper science. These educational goals provide scientific breadth not often found in traditional chemistry degrees. Combining formal education with a research endeavor encompassing a chemical discipline will provide students with the high quality education necessary to contribute to the resolution of the expected and unexpected environmental issues of the future.

Admission Requirements
Applicants to the program will be expected to meet the entrance requirements of the Graduate College and hold a bachelor's degree in chemistry or an equivalent amount of experience or training. Application must be made both to the Office of Graduate Admissions and to the Department of Chemistry. Prospective students are required to take the Graduate Record Examination General Test and the Chemistry or Biochemistry Subject Test. Three letters of recommendation from academic or professional sources should accompany the application. Application material, including grade point average, transcripts, performance on GRE's, and letters of recommendation will all be used in the determination of admission and financial support.

Program Requirements

After admission, the student will be required to take standardized placement examinations covering any four of the fields of Analytical, Inorganic, Organic, Physical, or Biochemistry. The entrance examinations are scheduled during the week preceding each semester. Identified deficiencies, if any, will be remedied with appropriate course work determined by an academic advisor. Enrollment in a 6000-level Chemistry course is not permitted unless the appropriate entrance requirement has been satisfied.

Within the first academic year, students will select a research advisor and a major area of study. Selection of the research advisor will be by mutual consent of the faculty member and student. Selection of the student's major area of study will be determined in conjunction with the research advisor. Major areas of study currently include analytical chemistry, biochemistry, inorganic chemistry, organic chemistry, and physical chemistry. Shortly after selecting a research advisor, a dissertation committee should be established. The committee should be comprised of the advisor serving as chair and at least two other faculty members from the department and one member from outside the department. No more than two of the departmental committee members should be from the student's major area of study. Emeritus faculty may serve on the committee. Removal of a committee member will require mutual consent of the student and the dissertation committee or a majority vote of the department faculty.

The student will complete at least sixty (60) semester hours of credit for the degree, with no more than half the credits as course work. A minimum of nine (9) formal courses must be completed satisfactorily. Fifteen (15) hours of doctoral dissertation research are required. The remaining hours will be completed through a combination of coop/internship experiences and/or special research problems and investigations in chemistry. The coop/internship option should be especially attractive to individuals who are considering an industrial career or who are already employed by industry and wish to set up a new scientific initiative. The student must maintain an overall grade point average of 3.00/4.00 to meet graduation requirements. The following describes the distribution of credit hours for the degree.

- Seven (7) graduate-level Chemistry courses (21 hours)
  - at least two (2) must have environmental, biotechnology, or nanotechnology or other applied focus
  - at least two (2) must emphasize the student's major field
  - appropriate courses from departments other than Chemistry may be substituted with approval of the student's committee
- One (1) cognate course, from outside the department (3 hours)
- Other
  - CHEM 5070 – Ethical Chemical Practice (3 hours)
- Special research problems/investigations or coop/internships (18 hours)
- Doctoral dissertation (15 hours)

Beginning in the first year and concurrent with course work, the student will be required to take cumulative examinations (CUMEs) that cover all of the major areas of study in chemistry. The purpose of the cumulative examination is to ensure that the student has, and can demonstrate and apply, knowledge of current, advanced chemical principles. The following describes the cumulative examination process.

Eight (8) CUMEs will be given in each academic year. On each examination there will be offered a questions from three of the five major areas of study: analytical chemistry, biochemistry, inorganic chemistry, organic chemistry, and physical chemistry. The student will choose any (2) questions to answer.

The student must pass six (6) CUME questions within the first two years of the program. At least two (2) of the six (6) questions passed must be from an area outside the student's concentration. The student must pass at least two (2) of the CUME questions by the end of the first year, and all six (6) must be passed before standing for candidacy.

Each student will be required to prepare a literature presentation on a paper or papers from the current literature no later than the end of the third semester in the program. Regular attendance at departmental seminars and participation in literature seminar training is expected while the student is in residence.

The student will be required to defend a written proposal for a unique research topic. The proposal topic must be unrelated to the student's current dissertation research project and must be approved by the student's dissertation committee.

To be considered a candidate for the degree and to ensure a timely completion of the program, a full-time student should have completed the following by the end of the third year:

- Any deficiencies identified by the entrance examinations.
- At least five (5) of the seven (7) required chemistry courses with a minimum course grade point average of 3.0.
- Six (6) cumulative examination questions.
- The proposal defense.

The program is designed to allow the flexibility of tailoring the curriculum to the needs of the student. Thus, the research tools requirement includes professional tools that facilitate successful academic, government, or industrial careers. Where necessary, satisfaction of the research tools requirement, including approval of appropriate courses, shall be determined by the dissertation committee. The committee can be petitioned regarding significant experience or expertise in these areas, which generally implies the use of a research tool in the context of current or prior employment or internships. The research tools component shall be met when a student satisfactorily accomplishes two of the following tasks:

- Demonstrates competence in computer programming and use by receiving a grade of “B” or better in an approved elective computer science course, or by sufficient previous course work, or by applying programming to a research problem. Such application could be through design and use of a program subroutine to analyze data acquired from a scientific instrument, computer modeling and simulation, design and analysis of algorithms or database management.
- Achieves a working knowledge of statistics by receiving a grade of “B” or better in an approved elective statistics course or by showing the ability to apply advanced statistical analysis such as multivariate analysis to a scientific research problem.
- Shows proficiency in the design or manufacture of electronic circuits and devices by construction of an instrument used in a research project or by receiving a grade of “B” or better in an appropriate course.
- Masters the design, repair, and development of chemical instrumentation used as part of an upper-level course or in a research project.
- Demonstrates a reading knowledge of one of the foreign languages important in the chemical literature or chemical industry (French, German, Russian, Japanese) by receiving a grade of “B” or better in a 4010 course in one of the languages, by passing a standardized examination, or by successfully translating a technical article assigned by the department.

The Ph.D. candidate must complete and successfully defend a dissertation on a research topic approved by the dissertation committee.

Communication, School of

Leigh Ford, Director
Main Office: Third Floor, Sprau Tower
Telephone: (269) 387-3130
Fax: (269) 387-3990
URL: http://www.wmich.edu/communication

Julie Apker
Sandra Borden
Sue Ellen Christian
Autumn Edwards
Chad Edwards
Richard Gershon
Keith Hearit
Richard Junger
Joseph Kayany
Steven Lipkin
Jennifer Machiorlatti
Leah Omilion-Hodges
Mark Orbe
Anna Popkova
Kathleen Propp
Jocelyn Steinke
Kelly Wittenberg

Master of Arts in Communication

Advisor and Director, Graduate Program: Julie Apker
Room 321, Sprau Tower

The Master of Arts in Communication consists of courses and capstone experiences that integrate communication theory and application, aligning with expectations for doctoral education as well as communication professions. Thirty semester hours of graduate credit and completion of a capstone experience are required for graduation.

Admission Requirements

Students must complete the University application and must satisfy the general admission requirements of the Graduate College. Students applying to the Communication master's degree program must have completed undergraduate work in communication, speech, or allied disciplines and have achieved at least a 3.0 grade point average in their last two years of course work. Additional course work may be required at the time of admission into the program, as deemed necessary by the director of graduate studies. Undergraduate transcripts, graduate transcripts where applicable, three letters of recommendation, evidence of academic interest (a personal statement) and a writing sample (academic or professional) are required. Graduate Record Examination (GRE) scores are required for applicants seeking assistantships.

Program Requirements

Communication Foundations (6 hours)
Select two of the following:
COM 6450 - Mass Communication Credits: 3 hours
COM 6740 - Interpersonal Communication Credits: 3 hours
COM 6820 - Organizational Communication Credits: 3 hours

Research Foundations (6 hours)

COM 6010 - Introduction to Communication Theory and Research Credits: 3 hours

Select one of the following:
COM 6020 - Quantitative Communication Research Credits: 3 hours
COM 6050 - Qualitative Communication Research Credits: 3 hours

Communication Electives (18 hours)
Students will develop an individualized program of study reflecting a focused area of concentration, in consultation with a faculty advisor. A program of study may incorporate up to 6 hours of course work outside the department with the written approval of the graduate student's advisor.

Capstone Experience
Master's degree students must complete a capstone experience in partial fulfillment of their requirements for graduation. The capstone experience shall consist of the completion of one of the following: a master's thesis, a comprehensive examination, or a completion of professional project.

Thesis
The thesis project is a research paper in which the student proposes and tests new ideas, replicates an existing study, or advances theoretical understanding of an issue. The thesis must demonstrate scholarly abilities, including solid conceptualization, analysis, and writing. The thesis must clearly define the problem to be investigated, demonstrate mastery of relevant academic literature, and show competence in the relevant methodology and analysis techniques. The thesis shall consist of six credit hours and shall be considered part of the communication electives.

Comprehensive Examination
The comprehensive examination option requires the student to demonstrate knowledge of a substantive area within communication and to demonstrate a capacity to integrate theory, research, and practice in response to comprehensive questions developed by the faculty of the School of Communication.

Professional Project
The professional project option requires the student to demonstrate his/her knowledge of the theory and methods of communication through an applied communication project. The professional project may involve workshops, case studies, training, creation websites, communication assessments, or other options within the context of the student's chosen area of study. The professional project shall consist of three credit hours and shall be considered part of the communication electives.

Master of Arts in Communication (Accelerated)

The Accelerated Graduate Degree Program (AGDP) in communication allows students to begin accumulating credits toward completion of a master's degree while still enrolled as undergraduates. Undergraduate students admitted to the communication AGDP, with senior standing, may take up to 12 credit hours of designated 5000- and 6000-level courses for graduate credit. These designated courses may be used in completion of both the bachelor's degree and the master's degree.

Degree hours
An undergraduate degree in communication requires a total of 122 credit hours. The Master of Arts in Communication requires a total of 30 credit hours. Students enrolling in the AGDP for the maximum 12 graduate credits would earn 140 total undergraduate and graduate credits in contrast to the typical combined 152 undergraduate and graduate credit hours under the usual progression to degree(s).

Students would pay undergraduate tuition for AGDP eligible 5000- and 6000-level courses as undergraduates and the courses will be included in the flat tuition rate. On completion of the undergraduate degree, the student will be re-classified as a graduate student and then will pay graduate tuition rates.

Eligibility for application

This program is open to undergraduate students in all of the communication majors: communication studies; interpersonal communication; organizational communication; public relations; journalism; film, video and media studies; and telecommunications and information management.

A student must have senior status and must have earned a minimum of 45 credit hours, 15 of which must be from Western Michigan University and at least 20 credit hours as a declared major in the School of Communication.

Undergraduate students enrolled in the AGDP will be expected to meet graduate expectations in their graduate courses.

Students who have received their baccalaureate degrees will be ineligible to apply for this program and retroactively claim credits toward the M.A. degree.

Admission criteria
The student must meet the established master's program admission criteria:

1. an undergraduate minimum GPA of 3.5 (based on at least 15 credit hours earned at WMU)
2. at least 20 credit hours in a declared major in the School of Communication
3. three letters of recommendation from academic references
4. evidence of academic interest (a personal statement) including rationale for admission to AGDP
5. an academic writing sample

Admission procedure
1. As early as possible in the academic junior year, the potential AGDP student should contact the director of graduate studies to discuss this AGDP option and review the requirements, timelines, and application procedures.

2. Meet with the undergraduate academic advisor to review current and anticipated credit hour status and make arrangements to conduct a pre-graduation audit.

3. Students must apply for admission to the graduate program with the Office of Admissions and Graduate Admissions and must complete the necessary application materials for admission to the master's program in the School of Communication.

4. Upon acceptance into the AGDP, the student must meet together with the director of graduate studies and the undergraduate academic advisor to prepare an appropriate program of study that meets the requirements for the undergraduate and graduate degrees.

5. A letter advising which graduate courses will be counted in both degrees will be sent to the student and to the registrar. A copy of this letter will also be included in the student's graduate file.

Requirements for continuing eligibility and graduation
1. It is expected that the baccalaureate degree will be awarded within one calendar year after initial AGDP enrollment. Students not meeting this time constraint must re-apply to be admitted to the graduate program.

2. In order to progress automatically into the graduate program, the student must achieve a grade of "B" or better in each of the graduate courses being counted for the undergraduate degree. Students who do not meet this requirement will have the earned grade applied to their undergraduate degree only and must apply for readmission into the graduate program. Students who complete the undergraduate degree including a "B" or above in the specified graduate courses will be admitted as graduate students (with the relevant graduate credit) in the next semester or session after receiving the bachelor's degree.

3. A student in the AGDP must follow the program of study developed with the graduate director and the undergraduate advisor. Failure to follow this program of study may result in ineligibility for the AGDP.

4. A student completing the undergraduate degree with a GPA within the major of less than 3.0 will be automatically declared ineligible for the AGDP.

5. Students must complete the requirements for the M.A. degree within 24 months from the completion of the bachelor's degree. Students unable to meet this requirement must apply for an extension with the School of Communication director of graduate studies.

6. Students who have completed the Accelerated Graduate Degree Program will have it noted on their undergraduate and graduate transcript.

7. Any student who becomes ineligible to continue participation in the AGDP will be notified in writing by the director of graduate studies.

Withdrawal
A student may at any time withdraw from the AGDP by informing the director of graduate studies in the School of Communication in writing. A copy of the request to withdraw must be sent to the Graduate College and the registrar's office.

Designated AGDP eligible communication courses:
5000-level courses
COM 5600 - Teaching Communication Credits: 3 hours
6000-level courses
COM 6010 - Introduction to Communication Theory and Research Credits: 3 hours
COM 6020 - Quantitative Communication Research Credits: 3 hours
COM 6050 - Qualitative Communication Research Credits: 3 hours
COM 6400 - Seminar in Mass Communication Credits: 3 hours
COM 6450 - Mass Communication Credits: 3 hours
COM 6700 - Seminar in Interpersonal Communication Credits: 3 hours
COM 6740 - Interpersonal Communication Credits: 3 hours
COM 6800 - Seminar in Organizational Communication Credits: 3 hours
COM 6820 - Organizational Communication Credits: 3 hours

Comparative Religion

Kevin Wanner, Acting Chair
Main Office: 2004 Moore Hall
Telephone: (269) 387-4367

Stephen Covell
Alisa Perkins
Diane Riggs
Rudolf Siebert
Cynthia Visscher
Brian C. Wilson

Master of Arts in Comparative Religion

Advisor: Alisa Perkins
Room 2005, Moore Hall

The Master of Arts in Comparative Religion is designed to provide students with a strong foundation of knowledge of at least two religious traditions, the principal classical works in the field of Comparative Religion, and the central issues of theory and method that underlie the discipline of the study of religion.

Admission Requirements
1. The completion of a baccalaureate degree from an accredited institution.
2. The submission of a letter of intent stating specific areas of interest and academic and professional goals.
3. Two letters of recommendation from persons able to evaluate the applicant's potential for graduate study.
4. An academic writing sample of 10-16 pages.
5. Submission of Graduate Record Examination scores.

Program Requirements
The Department of Comparative Religion offers course work leading to a Master of Arts in Comparative Religion, with two options:

Option I
Required Courses (12 hours)
REL 6000 - Comparative Religion Professional Seminar Credits: 3 hours
REL 6100 - Theory and Method Credits: 3 hours
REL 6150 – Pedagogy: Teaching World Religions Credits: 3 hours
REL 6200 - Advanced Writing Seminar in Religion Credits: 3 hours

Electives (15 hours)
15 hours of electives chosen from approved courses.

Master's Thesis (6 hours)
Prepare and defend, in oral examination, a master's thesis under the direction of a thesis advisor.
REL 7000 - Master's Thesis Credits: 6 hours
Foreign Language Proficiency
Demonstrate reading proficiency in one foreign language relevant to the research area.

Option II
This option does not require the preparation of a thesis.
Required Courses (12 hours)
REL 6000 - Comparative Religion Professional Seminar Credits: 3 hours
REL 6100 - Theory and Method Credits: 3 hours
REL 6150 - Pedagogy: Teaching World Religions Credits: 3 hours
REL 6200 - Advanced Writing Seminar in Religion Credits: 3 hours

Electives (21 hours)
21 hours of electives chosen from approved courses.

Comprehensive Examination
Satisfactorily complete a comprehensive examination.

Foreign Language Proficiency
Demonstrate reading proficiency in one foreign language relevant to the research area.

Master of Arts in Spirituality, Culture and Health
Advisor: Cynthia Visscher
2010 Moore Hall

The Master of Arts in Spirituality, Culture and Health is designed to provide students with the following:

- Awareness and knowledge of spirituality, culture, and religion in relation to patient care and cultural understanding of the body, illness, and health.
- Competency in using, and training others to use, practical tools for addressing religious, spiritual, and cultural diversity in health and human services settings.
- An advanced understanding of the impact of religious belief, spirituality, and culture on patient and provider relationships, and on the process of healing, in the context of the health care environment in the United States.
- The ability to act in a consulting role within an organization or community.

Admission Requirements

The completion of a baccalaureate degree from an accredited institution.

A resume

Submission of a 1200 word essay outlining the applicant's specific interest in the program and how completion of the program will contribute to the applicant's academic, professional, and personal goals.

Three letters of recommendation from individuals who are able to evaluate the applicant's potential for graduate study. Letters can be submitted by current or former colleagues if the applicant has not had recent contact with undergraduate professors.

Submission of a graduate application
.
Program Requirements

The Master of Arts in Spirituality, Culture and Health consists of 30 credit hours, 12 of which must be in required courses. The remaining 18 credit hours may be elected from a variety of courses and departments.

Required Courses (12 hours)
REL 5100 - Comparative Studies in Religion Credits: 2 to 4 hours
Topic: Religion, Culture and Health I: Cultures from the East Credits: 3 hours
Topic: Religion, Culture and Health II: Cultures from the Middle East and West Credits: 3 hours
REL 6200 - Advanced Writing Seminar in Religion Credits: 3 hours
Topic: Spirituality and Health: Survey of the Field Credits: 3 hours

Field Practicum
REL 7120 - Professional Field Experience Credits: 2 to 12 hours
(Credits: 3 hours needed)

OR
HOL 6700 - Professional Field Experience Credits: 1-6 hours
(Credits: 3 hours needed)

Elective Courses (18 hours)
18 hours of electives chosen from approved courses: wmich.edu/religion/

Certificate in Spirituality, Culture and Health
Advisor: Cynthia Visscher
2010 Moore Hall

The Graduate Certificate Program in Spirituality, Culture and Health is designed to provide students with the following:

1. An awareness and knowledge of spirituality, culture, and religion in relation to patient care and cultural understanding of the body, illness, and health.
2. Competency in using, and training others to use, practical tools for addressing religious, spiritual, and cultural diversity in health and human services settings.
3. An advanced understanding of the impact of religious belief, spirituality, and culture on patient and provider relationships and health equity in the context of the health care environment in the United States.

Admission Requirements:
1. The completion of a baccalaureate degree from an accredited institution.
2. The submission of a letter of intent stating specific interest and academic and professional goals.
3. Two letters of recommendation from persons able to evaluate the applicant's potential for graduate study.

Program Requirements:
The Spirituality, Culture and Health certificate consists of 12 credit hours, all of which are required courses.

Required Courses (12 hours):
REL 5100 - Comparative Studies in Religion Credits: 2 to 4 hours
Topic: Religion, Culture and Health I: Cultures from the East Credits: 3 hours
Topic: Religion, Culture and Health II: Cultures from the Middle East and West Credits: 3 hours
REL 6200 - Advanced Writing Seminar in Religion Credits: 3 hours
Topic: Spirituality and Health: Survey of the Field Credits: 3 hours

Field Practicum:
REL 7120 - Professional Field Experience Credits: 2 to 12 hours
Credits: 3 hours needed
OR
HOL 6700 - Professional Field Experience Credits: 1 to 6 hours
Credits: 3 hours needed

Economics

Donald J. Meyer, Chair
Main Office: 5307 Friedmann Hall
Telephone: (269) 387-5535
Fax: (269) 387-5637

Donald L. Alexander
Eskander Alvi
Sisay Asefa
Matthew L. Higgins
Wei-Chiao Huang
James Hueng
Jean Kimmel
Christine Moser
Debasri Mukherjee
Jon R. Neill
Susan Pozo
Carson Reeling
Michael Ryan
Mark V. Wheeler
Huizhong Zhou

Master of Arts in Applied Economics

Advisor: Mark Wheeler
Room 5453, Friedmann Hall

The M.A. in Applied Economics is designed for those who expect to pursue a career in business or government and prefer a course of study leading to a terminal degree that emphasizes the applications of economics to the problems of these areas. The degree is awarded on the basis of the satisfactory completion of thirty hours in a planned program prepared in consultation with the graduate advisor. Some graduates continue their formal training in economics, pursuing the Ph.D. degree at WMU or at another university.

Admission Requirements
Satisfactory completion of a minimum of twelve undergraduate hours in economics or in equivalents approved by the graduate advisor.
Satisfactory completion of intermediate level courses in microeconomic and macroeconomic theory. Students not meeting this requirement will be admitted with reservations and will be required to complete satisfactorily ECON 4030 and 4060.
Satisfactory completion of at least one course in calculus.

Program Requirements
1. The satisfactory completion of either twenty-four hours of courses plus a master's thesis or thirty hours, if additional courses are submitted lieu of the thesis, in a planned program prepared in consultation with the graduate advisor.

2. At least an overall "B" average in the graduate courses that the student takes in an advisor-approved program of study.

3. ECON 5040 - Mathematics for Economists Credits: 3 hours
ECON 6030 - Advanced Price Theory Credits: 3 hours
ECON 6070 - Uncertainty and Health Credits: 3 hours
ECON 6190 - Introduction to Econometrics Credits: 3 hours
ECON 6220 - Economic Statistics Credits: 3 hours
ECON 6620 - National Income Analysis Credits: 3 hours

M.A. students who select the non-thesis option may elect to take concentrations in Economic Development or Econometric/Statistics. Non-thesis students who do not elect a concentration take four (4) elective courses approved by the Department's Director of Graduate Programs.

Development Economics Concentration
Students who select the Economic Development concentration must take two or more courses related to economic development. These courses must be approved by the Department's Director of Graduate Programs. Acceptable courses include ECON 5880: Economic Development, ECON 6880: Economic Development I, PSCI 5320: Administration in Developing Countries, PSCI 6300: Seminar: Public Administration, PSCI 6330: The Political Environment of Public Administration, and PSCI 6440: Seminar: Comparative Strategies of Development.

Econometrics/Statistics Concentration
Students who select the Econometrics/Statistics concentration take two or more courses in Econometrics/Statistics. These courses must be approved by the Department's Director of Graduate Programs. Acceptable courses include ECON 6200: Economic Forecasting, or STAT 6820: Time Series Analysis, ECON 6700: Advanced Econometrics I, ECON 6710: Advanced Econometrics II, STAT 5630: Survey Sample Methods, STAT 5650: Design of Experiments of Quality Improvement, STAT 5660: Nonparametric Statistical Methods, and STAT 6800: SAS Programming. At least one of the courses used for the concentration must be taken in the Department of Statistics.

Doctor of Philosophy in Applied Economics

Advisor: Mark Wheeler
Room 5453, Friedmann Hall

The Doctor of Philosophy in Applied Economics is designed to meet the needs of future high-level practicing economists in both academic and non-academic settings.

The Applied Economics Ph.D. program offers a core curriculum as is required by traditional Ph.D. programs in economics, but also requires that students participate in a series of applied economics workshops. Students may complete a one-year internship in a non-academic organization. Doctoral students intern with organizations such as city, county, or state government agencies; consulting or research firms and institutes; financial institutions; businesses; and hospitals. This internship is conducted under the aegis of an employee of the organization as well as a Department of Economics faculty member. The purpose of this internship is to give students the incentive and opportunity to apply their knowledge of economic theory and empirical methods to actual problems faced by organizations. The internship is also intended to provide the subject of the student's dissertation and therefore send the Department's graduates into the job market with a somewhat different orientation than that of graduates from traditional economics Ph.D. programs. Students not electing the internship option are required to add a field of specialization in economics or a related field by completing a two-course sequence approved by the Graduate Programs Committee.

The Applied Economics Ph.D. program is designed to be completed within four years by a student entering with good undergraduate economics and quantitative methods (mathematics and statistics) training or a Master of Arts in Economics.

Admission Requirements
Admission to the Ph.D. program in Applied Economics requires:
1. GRE scores (verbal, quantitative, analytical).
2. Satisfactory completion of high-level undergraduate or M.A.-level microeconomic and macroeconomic theory courses.
3. Satisfactory completion of undergraduate calculus and statistics courses.
4. A personal statement discussing your career plans
5. Three letters of reference from persons in a position to assess your qualifications for doctoral-level study and likelihood of successful completion of the Ph.D. degree.

Financial Assistance
A number of doctoral assistantships are awarded each year. Recipients are selected by the Department's Graduate Programs Committee on a competitive basis. Financial assistance is limited to four years. Graduate minority financial assistance is available to eligible students.

Program Requirements
A minimum of 75 credit hours is required in this program. This includes up to eighteen hours of workshops, up to twelve hours of internship, and twelve hours of doctoral dissertation. Sixty-six hours must be at the 6000-level or higher.

Required Core Courses:
ECON 5040 - Mathematics for Economists Credits: 3 hours
Or
ECON 6040 - Introduction to Mathematical Economics Credits: 3 hours
ECON 6190 - Introduction to Econometrics Credits: 3 hours
ECON 6220 - Economic Statistics Credits: 3 hours
ECON 6650 - Microeconomic Theory I Credits: 3 hours
ECON 6660 - Microeconomic Theory II Credits: 3 hours
ECON 6700 - Advanced Econometrics I Credits: 3 hours
ECON 6710 - Advanced Econometrics II Credits: 3 hours
ECON 6750 - Macroeconomic Theory I Credits: 3 hours
ECON 6760 - Macroeconomic Theory II Credits: 3 hours

Additional Program Information
At or near the beginning of the fall semester of the second year, students are administered a qualifying examinations in economic theory. Upon passing these examinations, the student is considered a candidate for the Ph.D. degree.

Each student is required to specialize in two of the following fields: Economic Development, Human Resource Economics, Business/Industrial Organization, Monetary Economics, and International Economics. (Not all of these five fields will be offered in any particular year.) To specialize in a field, students take a sequence of two courses. Students are also required to pass a field qualifying examination in the two fields they have selected.

In the third year, candidates may intern (ECON 7120) at a non-academic organization or acquire an additional field of specialization. The internship provides students who seek non-academic careers the opportunity to put what they have learned into practice and to gain practical experience. However, the internship is normally within commuting distance of the University. Interns are typically unpaid and are expected to work approximately twenty hours per week on the internship project. Advisors and students are matched on the basis of mutual interest in the internship project.

Students who intend to seek academic careers are required to acquire an additional field of specialization either in economics or a related discipline in their third year as an alternative to the internship. To specialize in this field the student must take at least two courses in the field approved by the Department's Graduate Programs Committee. No qualifying examination is required.

Beginning in the third year, doctoral candidates are required to participate in workshops designed to deepen their understanding of theoretical and empirical economics by giving them the opportunity to discuss the research being conducted by the Department's faculty, economists at other institutions, and fellow graduate students. An Applied Economics Workshop (ECON 6990) is offered each semester and during the Summer I session.

The fourth year is devoted to the writing of the doctoral dissertation and continued participation in economics workshops. The dissertation is the culminating experience for each student. A satisfactory oral defense of the dissertation completes all the requirements of the Ph.D. degree.

English

Nicolas S. Witschi, Chair
Main Office: 600 Sprau Tower
Telephone: (269) 387-2572
Fax: (269) 387-2562

Elizabeth Bradburn
Jonathan E. Bush
Margaret Dupuis
Philip Egan
Nancy Eimers
Steve Feffer
Maria Gigante
Brian Gogan
Paul Johnston
Katherine Joslin
Richard Katrovas
Cynthia Klekar
Todd Kuchta
Casey Douglas McKittrick
Meghann Meeusen
Lisa Minnick
Mustafa Mirzeler
Christopher C. Nagle
Thisbe Nissen
William Olsen
Stacy Perryman-Clark
Judy Rypma
John Saillant
Eve Salisbury
Jana Schulman
Scott Slawinski
Gwen Tarbox
Grace Tiffany
Karen Vocke
Daneen Wardrop
Allen Webb

Director of Graduate Studies: Scott Slawinski
Graduate Advisor: Steve Feffer
Room 625, Sprau Tower

Financial Assistance
Competitive teaching assistantships are awarded each year.

Master of Arts in English

The Master of Arts in English provides advanced study of literature, literary history, literary theory, and other literary concerns. A student desiring to enter the program should present a thirty-hour undergraduate major with a grade-point average of at least 3.0 and a sample of critical writing about literature. Applicants must take the Graduate Record Examination General Test and forward their scores to the Department of English. Applicants must fill out an application through the Graduate College at www.wmich.edu/apply.

For more detailed information, see the English department's graduate web page:
www.wmich.edu/english/academics.

Financial Assistance
Competitive teaching assistantships are awarded each year.

Program Requirements
At least twenty hours of the undergraduate major must be in courses in literature; no more than 15 of the undergraduate major should be at the freshman-sophomore level. Applicants lacking an undergraduate major but who have at least 20 hours of work in English with a substantial number of courses in literature and who are otherwise judged eligible may be granted admission to the program on condition that they remedy perceived deficiencies in preparation by taking some undergraduate courses as prerequisites.

Required courses in the program are the following:
ENGL 6150 - Literary Criticism Credits: 3 hours
ENGL 6900 - Scholarship and Writing in the Profession Credits: 3 hours

Additional Courses
The additional courses needed to complete a thirty-three hour program are selected in consultation with the graduate director. On admission, students should consult with the advisor at the earliest opportunity concerning their program of study.

Master of Arts in English with an Emphasis on Professional Writing
The Master of Arts in English with an Emphasis on Professional Writing is a thirty-eight hour degree program designed to meet the increasing demand for people with liberal arts education and with a particular skill in writing non-fiction prose.

On admission, students should consult with the advisor at the earliest opportunity concerning their program of study.

For more detailed information, see the English department's graduate web page:
www.wmich.edu/english/academics.

Program Requirements
A student desiring to enter the program should present a thirty-hour undergraduate major with a grade-point average of at least 3.0 and samples both of critical writing about literature and of other expository writing. At least twenty hours of the major must be in courses in literature; no more than fifteen of the thirty should be at the freshman-sophomore level. Applicants lacking an undergraduate major but who have at least 20 hours of work in English with a substantial number of courses in literature and who are otherwise judged eligible may be granted admission to the program on condition that they remedy deficiencies in preparation by taking some undergraduate courses as prerequisites. Applicants must take the Graduate Record Examinations and forward their scores to the Department of English.

Required courses in the program are:
(a) three writing courses:
ENGL 6310 - Essay Writing Credits: 3 hours
ENGL 6320 - Article Writing Credits: 3 hours
ENGL 6330 - Professional Writing: Form and Technique Credits: 3 hours

(b) several courses in a field other than English (8-12 hours).

Additional Courses
The additional courses needed to complete a coherent thirty-eight hour program are selected in consultation with the graduate director.

Master of Arts in English with an Emphasis on Teaching

The Master of Arts in English with an Emphasis on Teaching is designed to meet the needs of English teachers, most especially those teaching in secondary schools, but also those teaching English and the language arts in middle and elementary schools. (Note: The degree does not provide teacher certification.)

Applicants must take the Graduate Record Examination General Test and forward their scores to the Department of English. Applicants must fill out an application through the Graduate College at www.wmich.edu/apply.

For more detailed information, see the English department's graduate web page: www.wmich.edu/english/academics.

Program Requirements

A student desiring to enter the program should present a thirty-hour undergraduate major with a grade-point average of at least 3.0 and a sample of critical writing about literature. At least twenty hours of the major must be in courses in literature; no more than fifteen of the thirty should be at the freshman-sophomore level. Applicants lacking an undergraduate major but who have at least 20 hours of work in English with a substantial number of courses in literature and who are otherwise judged eligible may be granted admission to the program on condition that they remedy perceived deficiencies in preparation by taking some undergraduate courses as prerequisites.

Required courses in the program are:

(a) ENGL 6800 – Advanced Methods in Teaching Literature Credits: 3 hours
(b) ENGL 6910 - Research and Scholarship in English Education Credits: 3 hours
(c) two courses in English pedagogy, including the pedagogy of writing chosen from:
ENGL 5740 – Grammar and the Teaching of Writing Credits: 4 hours
ENGL 6690 – Methods of Teaching College Writing Credits: 3 hours
ENGL 6790 – Advanced Composition Theory Credits: 3 hours
(d) one course in multicultural literature;
(e) one course in children's or adolescent literature;
(f) ENGL 6900 - Scholarship and Writing in the Profession Credits: 3 hours
(g) Additional graduate level courses to complete 33 hours.

Master of Fine Arts in Creative Writing

The Master of Fine Arts in Creative Writing is a 48-hour degree program for students who wish to become professional writers of poetry, fiction, non-fiction, or drama. It is the minimal academic qualification appropriate for those who wish to teach the craft of writing at the college or university level.

A student desiring to enter the program should present a 30-hour undergraduate major with a grade-point average of at least 3.0 and samples both of writing in the genre in which he or she expects to specialize (fiction and playwriting from 15 to 30 pages, poetry from 10 to 15 pages) and of critical writing about literature. At least twenty hours of the major must be in courses in literature; no more than fifteen of the thirty should be at the freshman-sophomore level. Applicants must take the Graduate Record Examination General Test and forward their scores to the Department of English. Applicants must fill out an application through the Graduate College at www.wmich.edu/apply.

For more detailed information, see the English department's graduate web page: www.wmich.edu/english/academics.

Applicants lacking an undergraduate major but who have at least 20 hours of work in English with a substantial number of courses in literature and who are otherwise judged eligible may be granted admission to the program on condition that they remedy deficiencies in preparation by taking some undergraduate courses as prerequisites.

On admission, students should consult with the advisor at the earliest opportunity concerning their program of study.

Financial Assistance
Competitive teaching assistantships are awarded each year.

Required courses in the program are:
(a) 12 hours of creative writing workshops
in the area of specialization and 3-6 hours of creative writing workshops in a genre or genres outside the area of specialization:
(b) one section of:
ENGL 6110 - Literary Forms Credits: 3 hours (in the student's genre)
(c) one section of:
ENGL 6110 - Literary Forms Credits: 3 hours (in another genre)
(d) 6-8 hours in literature from among 5000- and 6000-level courses;
(e) ENGL 6990 - M.F.A. Project Credits: 3-6 hours

Additional Courses
The additional courses needed to complete a 48-hour program are selected in consultation with the graduate advisor.

Doctor of Philosophy in English

The Doctor of Philosophy in English is designed to meet the needs of future scholars and writers. The program requires all candidates to have broad knowledge of English and American literature, acquaintance with non-traditional literature, practical and/or theoretical background in the teaching of English, and a specialization in one or more of the discipline's fields—literature, creative writing, and English education.

Applicants must take the Graduate Record Examinations, both the General Test and the Subject Test in Literature in English, and forward their scores to the Department of English. Applicants must fill out an application through the Graduate College at www.wmich.edu/apply.

On admission, students should consult with the advisor at the earliest opportunity concerning their program of study.

For more detailed information, see the English department's graduate web page:
www.wmich.edu/english/academics.

Financial Assistance
Competitive doctoral teaching assistantships are awarded each year.

Program Requirements
Candidates entering with an MA or an MFA are credited with up to30 hours. Those entering directly from a baccalaureate program will be expected to complete the courses designated as "required" as early as possible in their studies.

1. Required Courses (equivalent courses from other institutions are accepted)
a. For candidates in literature or English education (6 hours)
An approved course in the student's area of specialization.
ENGL 6150 - Literary Criticism Credits: 3 hours

b. For candidates in creative writing (9 hours)
An approved course in the student's area of specialization (i.e., contemporary fiction, poetry, or drama)
An approved course in modern literary forms
ENGL 6150 - Literary Criticism Credits: 3 hours

2. Area of Specialization
a. For candidates in English education
An approved course in Children's/Adolescent Literature
ENGL 6780 - English Education Seminar Credits: 3 hours
(Three sections needed)

b. For candidates in creative writing
Twelve hours of workshops

3. Elective credit
Candidates in literature will take a minimum of 24 hours of elective credit, candidates in English education will take a minimum of 12 hours of elective credit, and candidates in creative writing will take a minimum of 9 hours of elective credit.

4. Cognate or support area (3 hours)
English education candidates must take:
EMR 6480 - Qualitative Research Methods Credits: 3 hours

5. Teaching component (6 hours)
a. For candidates in literature or creative writing
Six hours of credit elected from courses or practica in the teaching of composition, literature, English language, or creative writing.

b. For candidates in English education
Six hours or graduate practica (ENGL 7130) at least one of which must be in the teaching of English education.

6. Candidacy Examination
After satisfying course requirements, students will take three four-hour written examinations and an oral examination over their chosen areas. These examinations should be completed within three years of admission. May be repeated once.

7. Foreign Language Requirement
By examination or by completion of coursework students must demonstrate basic reading competence in at least one foreign language. The foreign language requirement should be completed prior to taking the candidacy examination.

8. Doctoral Readings and Oral Examination (3 to 9 hours)
Near the completion of course work and before beginning the dissertation, students will take a course of readings designed by the candidate in conjunction with a faculty supervisor. An oral examination over the chosen books will follow.
ENGL 7110 - Readings in Doctoral Specialization Credits: 3 hours
(Credits needed: 3 to 9 hours)

9. Dissertation (15 hours)
The dissertation is to be a book-length manuscript of scholarship, criticism, research, or creative writing composed of either a single piece of work or a coherent collection of shorter pieces that are methodologically, structurally, or thematically related.

Institute of Environment and Sustainability

Steven Kohler, Director
Main Office: 3932 Moore Hall
Telephone: (269) 387-2716

Steven B. Bertman

Gender and Women's Studies, Center for

Susan Freeman, Chair
Main Office: 3061 Moore Hall
Telephone: (269) 387-2510
Fax: (269) 387-2507

Joetta Carr
Mariam Konate

Geography

Benjamin Ofori-Amoah, Chair
Main Office: Room 3242, Wood Hall
Telephone: (269) 387-3415
Fax: (269) 387-3442

Kathleen Baker
Lisa M. DeChano-Cook
Todd Ellis
Charles Emerson
Lucius Hallett
Chansheng He
David S. Lemberg
Lei Meng
Joseph P. Stoltman
Gregory Veeck
Li Yang
Laiyin Zhu

Master of Science in Geography

Advisor: Li Yang
Room 2114, Wood Hall

The goals of the Master of Science in Geography are: 1) to assist students in acquiring the skills needed for independent geographic research, including organizational and communication skills; and 2) to enable the student to develop a concentration in a particular aspect of the field.

Students select one of three concentrations, namely community development and planning, environmental and resource analysis, and geographic techniques. At the same time, each program is individually designed to suit career or personal objectives. Students may prepare for a geographic career in government, business and industry, or for pursuit of a higher degree. A minimum of 30 graduate hours is required, except in the community development and planning which requires 36 graduate hours.

Admission Requirements

Applicants who possess a bachelor's degree with a major or minor in Geography OR a related academic discipline such as social science, biological, engineering, health, business, or physical science majors may apply for our master's program. The application involves two steps:

1. You should follow normal Western Michigan University Graduate College application procedures to complete the online application process.
2. You must send a copy of your purpose statement, an official copy of your undergraduate transcript(s), three letters of reference, and score on the Graduate Record Examination (GRE) to our department. International students should submit evidence of English language proficiency such as Test of English as a Foreign Language (TOEFL) score to The Office of International Student Services (OISS) following standard WMU procedures. All applicants with applications completed on the annual due date, February 15, will be considered for graduate assistantship.
3. Visit http://wmich.edu/geography/academics/masters for additional information.
4. In addition to meeting the requirements of the Graduate College, all applicants must have basic facility in desktop computer operations and must have a basic knowledge of descriptive and inferential statistics equivalent to the requirements in STAT 3660.

Program Requirements

1. Complete 30 hours of approved graduate credits of required and elective courses, and thesis or project. At least 20 hours to be completed in the Geography Department. For the Community Development and Planning concentration, complete 36 hours.

2. Required Courses: Complete the following:
GEOG 5670 - Spatial Analysis Credits: 3 hours
GEOG 6610 - Geographic Research Credits: 3 hours
GEOG 6620 - History and Philosophy of Geography Credits: 3 hours

3. Thesis/Project - Complete six hours of:
GEOG 7000 - Master's Thesis Credits: 6 hours
Or six hours of:
GEOG 7100 - Independent Research Credits: 2 to 6 hours

4. Electives: Complete one of the following:

A. Community Development and Planning
Complete the following courses:
CORP 5580 - Planning Studio Credits: 3 hours
CORP 5700 - Cities and Urban Systems Credits: 3 hours
GEOG 5710 - Introduction to Community Development and Planning Credits: 3 hours
GEOG 6720 - Community Analysis and Planning Techniques Credits: 3 hours
GEOG 7120 - Professional Field Experience Credits: 2 to 12 hours Credits: 2 hours needed
Additional courses in geography or outside geography may be selected in consultation with the graduate advisor.

B. Environmental and Resource Analysis
Complete at least 15 hours from the following courses:
GEOG 5530 - Water Resources Management Credits: 3 hours
GEOG 5550 - Contemporary Issues in Resources Management Credits: 3 hours
GEOG 5570 - Environmental Impact Assessment Credits: 3 hours
GEOG 6200 - Seminar in Physical Geography Credits: 2 to 3 hours Credits: 3 hours needed
GEOG 6240 - Seminar in Biogeography Credits: 3 hours
GEOG 6250 - Climatology Credits: 3 hours
GEOG 6260 - Disaster Management Credits: 3 hours
GEOG 6300 - Climate Change and Geography Credits: 3 hours
GEOG 6650 - Seminar in Geography Credits: 1 to 3 hours Credits: 3 hours needed
GEOG 6710 - Landscape Ecology and Regional Planning Credits: 3 hours
GEOG 6820 - Advanced Remote Sensing Credits: 3 hours
Additional courses in geography or outside geography may be selected in consultation with the graduate advisor.

C. Geographic Information Science
Complete a minimum of three courses from the following:
GEOG 5010 - Introduction to Geographic Information Systems Credits: 4 hours
GEOG 5630 - Surveying Techniques Credits: 4 hours
GEOG 5690 - Geodatabase Design and GIS Workflows Credits: 4 hours
GEOG 5820 - Remote Sensing of the Environment Credits: 4 hours
GEOG 6670 - Project Management and Programming Credits: 3 hours
GEOG 6685 - GIS and Internet Applications Credits: 3 hours
GEOG 6690 - Advanced GIS Seminar Credits: 3 hours
GEOG 6820 - Advanced Remote Sensing Credits: 3 hours
GEOG 7120 - Professional Field Experience Credits: 2 to 12 hours Credits: 4 hours needed
Additional courses in geography or outside geography may be selected in consultation with the graduate advisor.

Certificate Program in Geographic Information Science (17-19 hours)

This graduate certificate program provides a strong framework for developing competencies in geographic information systems (GIS), remote sensing, and spatial analysis. The program is designed for post-baccalaureate students in public administration, social and physical sciences, information technology, engineering, and business. Many professionals in these areas need skills in handling and analyzing geographically distributed data using the capabilities provided by GIS software, satellite remote sensing, and the global positioning system.

Admission Requirements

In addition to meeting the requirements of the Graduate College, all applicants must have basic facility in desktop computer operations and must have a basic knowledge of descriptive and inferential statistics equivalent to the requirements of STAT 3660.

Program Requirements

1. Required Courses (11 hours)
GEOG 5010 – Introduction to GIS Credits: 4 hours
GEOG 5670 – Spatial Analysis Credits: 3 hours
GEOG 5820 – Remote Sensing of the Environment Credits: 4 hours

2. Electives (6-8 hours)
Choose two of the following:
GEOG 5630 - Surveying Techniques Credits: 4 hours
GEOG 5690 - Geodatabase Design and GIS Workflows Credits: 4 hours
GEOG 6670 - Project Management and Programming Credits: 3 hours
GEOG 6685 - GIS and Internet Applications Credits: 3 hours
GEOG 6690 - Advanced GIS Seminar Credits: 3 hours
GEOG 6820 - Advanced Remote Sensing Credits: 3 hours

Geosciences

Mohamed Sultan, Chair
Main Office: 1183 Rood Hall
Telephone: (269) 387-5487
Fax: (269) 387-5513

Daniel Cassidy
Johnson Haas
Duane Hampton
Stephen Kaczmarek
Alan E. Kehew
Michelle Kominz
Carla M. Koretsky
R. V. Krishnamurthy
Heather Petcovic
Donald Reeves
William A. Sauck
Joyashish Thakurta

The Department of Geosciences offers the Master of Science in Geosciences, the Master of Arts in Earth Science, and the Doctor of Philosophy in Geosciences.

Master of Science in Geosciences

Advisor: Dr. Peter Voice
Room 3324, Rood Hall

The Master of Science in Geosciences is designed to prepare the student for professional work in geology and for further graduate study. The program has four core areas of specialization: Hydrogeology, Geochemistry and Economic Geology, Geophysics and Tectonics, Stratigraphy and Sedimentary Geology.

Please note: Under exceptional circumstances, a student may request that their advisor petition the faculty for approval of modifications to the timelines stated below. Exceptions may only be granted by a faculty vote.

Admission Requirements

1. Undergraduate major in geology or a related field. Students must have completed, or will be required to complete as soon as possible upon enrollment in the program, GEOS 1300, 1310, 3010 or 3350 and a field experience such as 5390 or equivalent. Any remedial course work completed upon enrollment in the graduate program must be completed with grade of “B” or better to satisfy this requirement. For students who enter the program with course work deficiencies, program requirement timelines (see below) will begin once remedial work has been satisfactorily completed, rather than upon matriculation in the program.

2. Grade point average of at least 3.0 (of 4.0) for the previous two years of undergraduate work is strongly recommended and is required for full consideration for financial support via teaching assistantships.

3. Three letters of recommendation are required of all applicants from persons well situated to evaluate his/her qualifications for graduate study. If they are coming from a faculty member at a college or university, the letter should be on that school’s letterhead. Letters must be submitted through the WMU electronic application system.

4. Applicants must submit the results of the Verbal Reasoning, Analytical Writing, and Quantitative Reasoning portions of the Graduate Record Examination (GRE).

Program Requirements

1. Choose a graduate advisor by the end of the first semester after matriculation. No later than the end of the third academic semester, the student should complete three (3) hours of research (GEOS 6340) with this advisor in the

preparation of a thesis proposal, and file appropriate paperwork identifying a thesis committee composed of the primary advisor, at least one other Geosciences department faculty member, and a third committee member who may be internal or external to the department.

2. Qualifying Requirement.
This requirement must be completed no later than the end of the second full year in residence. Students must achieve an average grade of “BA” in two of four core graduate courses. One graduate course in each of the four areas (Hydrogeology, Geochemistry and Economic Geology, Geophysics and Tectonics, Stratigraphy and Sedimentary Geology) will be designated as a “core” course (see graduate advisor for details). In some cases, students may enter the program with a strong background in one or more of the core areas. Such students may be excused from enrolling in one or more core courses by achieving a grade of “B” or better on the final examination for the course(s) provided these result in an average of “BA” for two of the core courses. Students who do not achieve a “B” in a core area, or an average of “BA” for two core courses, on their first attempt will be given one additional opportunity to either pass each course or the final examination of the course with a grade of “B” or the grade necessary to achieve an average of “BA” for two of the core courses.

3. Proposal Examination.
By the end of the third academic semester in residence, students must develop a written proposal describing their planned research. This proposal will be presented in a public 15-20 minute talk and will be followed by a closed-door oral examination covering both the proposal and related aspects of Geosciences, to be conducted by the student’s chosen thesis committee. Students who do not pass the proposal exam may be given one additional opportunity to repeat the examination. A second attempt must be made within a timeframe to be determined by the student’s thesis committee, and must occur no later than the end of the next academic semester.

4. Complete at least thirty (30) total graduate credit hours in Geosciences and related areas (mathematics, physical sciences); at least eighteen (18) credit hours must be at the 6000-level or above, and at least twenty-one (21) of the total credits must be completed in Geosciences. At least fifteen (15) credits of Geosciences coursework must be completed, exclusive of GEOS 6340, GEOS 7100, GEOS 7120, GEOS 7000, and GEOS 7350.

5. Attend weekly departmental seminars.

6. Satisfactory completion of six (6) hours of the following:
GEOS 7000 - Master's Thesis Credits: 6 hours

7. At least one scientific presentation must be given at an approved external venue prior to graduation, or at least one scientific paper must be submitted to an approved refereed journal prior to graduation. Journals and venues must be approved by the student’s thesis committee. See the graduate advisor for examples of approved journals and presentation venues.

8. Successfully defend thesis.
The student will give a 30-45 minute public presentation describing the results of his/her research. This will be followed by a closed-door defense to be conducted by the members of the student’s thesis committee. See the appropriate section of the Graduate Catalog for policies and procedures in the event of an unsuccessful defense. The final written thesis must conform to the requirements explained in the University’s *Guidelines for the Preparation of Theses, Projects, and Dissertations* and may be written according to one of the following options:

a. Option 1:
The student will present a traditional comprehensive thesis based on the master’s research. The thesis must include an introduction, review of relevant literature, description of methodology used in the thesis research, presentation of the results (including appendices of data where appropriate), and discussion of the significance of the research.

b. Option 2:
The student will present at least one first-authored journal paper based on the thesis research that has been submitted for publication and is deemed to be publishable by the student’s thesis committee. A separately written introduction including a brief literature review, summary of the significance of the work, and appendices of data (where appropriate) must also be submitted.

Master of Arts in Earth Science

The Master of Arts in Earth Science is a non-thesis program that permits students to design programs of study, in consultation with the program advisor, that are compatible with the individual's goals. The program is intentionally flexible; course work may be drawn from geosciences, biological sciences, chemistry, anthropology, economics, political science, communication, and physics, among others.

Admission Requirements

1. Grade-point average of at least 3.0 (of 4.0) for previous two years of undergraduate work is strongly recommended and is required for full consideration for financial support via teaching assistantships. However, teaching assistantships will be awarded preferentially to students enrolled in the M.S. and Ph.D. Geosciences programs.
2. Students must have successfully completed GEOS 1300, 1310, 3010 or 3350, and a field experience such as 4380 or 5390, or equivalent, or must complete these courses prior to finishing the degree.

Program Requirements

1. Complete a minimum of thirty-five hours of graduate course work, with at least eighteen hours at the 6000-level or above.

2. A core of eighteen semester hours in Geosciences is required.

3. Hours may include satisfactory completion of
GEOS 7100 - Independent Research Credits: 2 to 6 hours
(may include up to four hours of GEOS 7100)
OR
GEOS 7120 - Professional Field Experience Credits: 2 to 12 hours
(may include up to three hours of GEOS 7120)

4. Students are strongly encouraged to attend weekly departmental seminars.

Master of Arts in Earth Science (Accelerated)

The accelerated graduate degree program in Earth Science allows undergraduate students in the Geosciences Department at Western Michigan University to begin accumulating credits toward the completion of a Master of Arts in Earth Science degree while completing a bachelor's degree.

When admitted to the accelerated program with senior standing, a student may take up to 12 credit hours of designated coursework that is applied toward both the bachelor's degree and the master's degree. Coursework must be counted from designated classes taken at the 5000-level. Students must earn a grade of "B" or better in order to receive graduate credit for these classes.

An undergraduate degree in geosciences requires a total of 122 credit hours. The Master of Arts in Earth Science requires a total of 35 credit hours. When enrolling in the accelerated program for the maximum 12 graduate credits, a student will earn 145 total undergraduate and graduate credits in contrast to the typical combined 157 undergraduate and graduate credit hours under the usual progression to degree(s). A M.A. in Earth Sciences generally requires 2 to 2.5 years to complete, after earning a Geosciences B.S. degree. The accelerated program can be completed in 12 months after the B.S., if the student takes eligible summer classes, or 1.5 years after completion of the B.S. in Geosciences.

A student will pay undergraduate tuition for courses taken as an undergraduate and these courses will be included in the flat tuition rate. On completion of the undergraduate degree, the student will be reclassified as a graduate student and then will pay graduate tuition rates.

Eligibility

This program is open to undergraduate students who:

- Are enrolled as B.S. students in the Geology, Geochemistry, Geophysics or Hydrology majors.
- Have senior status (minimum 88 credit hours) and have earned a minimum or 30 credit hours at WMU and at least 20 credit hours as a declared major in the Geosciences Department.
- Have and maintain a cumulative overall GPA of at least 3.0 based on at least 88 earned hours, at least 30 of which shall be earned at Western Michigan University.
- Have a cumulative GPA of 3.0 or above in their major classes and a cumulative GPA of 2.5 or above in their cognate classes.

Undergraduate students enrolled in the accelerated program are expected to meet graduate expectations in their designated graduate courses. That is, only courses for which the student receives a grade of 3.0 or better will be transferred into the graduate program.

If a student has received a bachelor's degree, he or she will be ineligible to apply for this program and retroactively claim credits to apply toward the master's degree.

Enrollment

1. As early as possible in the academic junior year, contact the geosciences graduate advisor to discuss this option and review requirements, timelines and application procedures.
2. Apply for admission to the Master of Arts in Earth Sciences program in the Geosciences Department.
3. Upon acceptance, meet with the graduate advisor and the undergraduate advisor to prepare an appropriate program of study that meets the requirements for both the undergraduate and graduate degrees.
4. A letter advising which courses will be counted in both degrees will be sent to the student and to the Registrar. A copy of this letter also will be included in the student's graduate file.

Admission

WMU has an online graduate application system that allows all students (domestic and international) to submit required information into one system. General application information for the University, as well as specific requirements for individual programs, are captured into this system.

To view the admission requirements for the M.A. in Earth Science program, please visit www.wmich.edu/grad/admissions/single.php?id=110.

Requirements for continuing eligibility and graduation

- Completing the undergraduate degree with a GPA within the major of less than 3.0 or a GPA in cognate classes of less than 2.5 will automatically declare a student ineligible for the program.
- If a student in admitted to the accelerated program, he or she must follow the program of study developed with the graduate and undergraduate advisors. Failure to follow this program of study may result in ineligibility for the program.
- If a student becomes ineligible to continue participation in the program, he or she will be notified in writing by the graduate advisor.
- In order to progress automatically into the graduate program, a student must achieve a grade of "B" or better in each of the courses being counted for both the undergraduate and graduate degrees. If the student does not meet this requirement, he or she will have the earned grade applied only to the undergraduate degree. If a student completes the undergraduate degree including a "B" or above in a minimum of 6 credits of the specified courses, he or she will be admitted as a graduate student (with the relevant graduate credit) in the next semester or session after receiving the bachelor's degree.
- It is expected that the baccalaureate degree will be awarded within one calendar year after initial accelerated program enrollment. If a student does not meet this time constraint, he or she must reapply to be admitted to the graduate program.
- When a student completes the accelerated degree program, it will be noted on his or her undergraduate and graduate transcripts.
- A student may withdraw at any time from the program by informing the geosciences graduate advisor in writing. A copy of the request to withdraw must be sent to the Registrar.

- A student must complete the requirements for the M.A. degree within 24 months (2 years) from the completion of the bachelor's degree. If the student is unable to meet this requirements, he or she must apply for an extension with the Geosciences Department graduate advisor.

Geoscience courses eligible for the program
GEOS 5010 - Geologic Communications and Presentations Credits: 1 hour
GEOS 5060 - Introduction to Soils Credits: 3 hours
GEOS 5090 - Surface Water Hydrology Credits: 3 hours
GEOS 5120 – Hydrogeology Credits: 3 hours
GEOS 5200 - Economic Geology Credits: 3 hours
GEOS 5210 - Geological and Environmental Remote Sensing Credits: 4 hours
GEOS 5230 - Hazardous Waste Operation and Emergency Response Credits: 1 hour
GEOS 5240 - Remediation Design and Implementation Credits: 1 hour
GEOS 5250 - Surface Geophysics Credits: 1 hour
GEOS 5260 - Principles and Practices of Aquifer Testing Credits: 1 hour
GEOS 5270 - Principles of Well Drilling and Installation Credits: 1 hour
GEOS 5280 - Principles/Practices of Groundwater Sampling/Monitoring Credits: 1 hour
GEOS 5300 - Plate Tectonics and Earth Structure Credits: 3 hours
GEOS 5350 - GIS Applications in Geological and Environmental Sciences Credits: 3 hours
GEOS 5360 - Glacial Geology Credits: 3 hours
GEOS 5390 - Geologic Mapping Credits: 3 hours
GEOS 5400 - Igneous and Metamorphic Petrology Credits: 4 hours
GEOS 5430 - Petrology and Petrography Credits: 3 hours
GEOS 5450 - Hazardous Waste Remediation Credits: 3 hours
GEOS 5500 - Environmental Field Geochemistry Credits: 3 hours
GEOS 5550 - Introduction to Geochemistry Credits: 3 hours
GEOS 5600 - Introduction to Geophysics Credits: 3 hours
GEOS 5610 - Reflection Seismology Credits: 3 hours
GEOS 5620 - Gravity and Magnetic Exploration Credits: 3 hours
GEOS 5630 - Electrical Methods Credits: 3 hours

Doctor of Philosophy in Geosciences

The Doctor of Philosophy in Geosciences is a research degree designed for persons intending to take leadership roles in teaching and research in one of four core areas of the Geosciences: Hydrogeology; Geochemistry and Economic Geology; Geophysics and Tectonics; Stratigraphy and Sedimentary Geology. Applicants will be expected to meet the minimum entrance requirements of the Graduate College and must demonstrate an interest in, and aptitude for, conducting high quality research.

Please note: Under exceptional circumstances, a student may request that the primary advisor petition the faculty for approval of modifications to the timelines stated below. Exceptions may only be granted by faculty vote.

Admission Requirements

1. Bachelor's or master's degree in geology or related field is required; an M.S. degree is strongly recommended. Students must have completed, or must complete as soon as possible upon enrollment, GEOS 1300, 1310, 3010 or 3350, and a field experience such as 5390 or its equivalent. Any remedial course work completed upon enrollment in the graduate program must be completed with grade of "B" or better to satisfy this requirement. For students who enter the program with course work deficiencies, program requirement timelines (see below) will begin once remedial work has been satisfactorily completed, rather than upon matriculation in the program.

2. Grade-point average of 3.25 (of 4.0) for prior graduate work. To be admitted without an M.S. degree, a GPA of at least 3.25 (of 4.0) during the previous two years of undergraduate work is required.

3. Three letters of recommendation are required of all applicants from persons well situated to evaluate his/her qualifications for graduate study. If they are coming from a faculty member at a college or university, the letter should be on that school's letterhead. Letters must be submitted through the WMU electronic application system.

4. Applicants must submit the results of the Verbal Reasoning, Analytical Writing, and Quantitative Reasoning portions of the Graduate Record Examination (GRE).

Financial Assistance
Several departmental, University and grant-funded fellowships, teaching assistantships, and research assistantships are available. Application forms and additional information are available from the Department of Geosciences and from the Graduate College.

Program Requirements
1. Choose a graduate advisor within two semesters following matriculation.
Within three semesters following matriculation, the student must choose a doctoral committee. This committee will be chaired by the student's primary advisor, and must include one other faculty member from within the Geosciences Department, as well as a third committee member from outside the Geosciences Department. It is strongly recommended that the third committee member be chosen from an outside research facility or university, although members may also be chosen from other programs at WMU, if appropriate. The committee should be chosen to reflect the doctoral student's expressed research interests. The committee will facilitate and guide the student's development within the academic and research programs of the department and University.

2. Complete at least three research credit hours directed toward preparing a dissertation research proposal, with the student's primary graduate advisor by the end of the second semester of residence.

GEOS 6340 - Research in Geology and Earth Science Credits: 1 to 4 hours

3. Qualifying Requirement.
This requirement must be completed no later than the end of the fourth semester in residence. Students must achieve an average grade of "BA" in three of four core graduate courses. One graduate course in each of the four areas (Hydrology, Geochemistry and Economic Geology, Geophysics and Tectonics, Stratigraphy and Sedimentary Geology) will be designated as a "core" course (see graduate advisor for details). In some cases, students may enter the program with a strong background in one or more of the core areas. Such students may be excused from enrolling in one or more core courses by achieving a grade of "B" or better on the final examination for the course(s). Students who do not achieve a "B" or better in a core area on their first attempt (or an overall average of "BA" for the three courses) will be given one additional opportunity to either pass each core course or the final examination with a grade sufficient to achieve an average of "BA" for the three courses.

4. Proposal Examination:
By the end of the fourth semester, students must develop a written proposal describing their planned doctoral research. This proposal will be presented in a public 20-minute talk. The talk will be followed by a closed-door oral examination, to be conducted by the student's doctoral committee. Students who do not pass the proposal exam will be given one additional opportunity to repeat the examination. A second attempt must be made within a timeframe to be determined by the student's doctoral committee, and must occur within one year of the first attempt. If the external committee member cannot be present on campus for the proposal examination, they may attend virtually or submit written comments or questions.

5. Complete at least sixty (60) total credit hours of which thirty (30) credit hours must be at the 6000-level or above. At least eighteen (18) GEOS graduate credit hours of course work is required, not including credit from courses used to fulfill the core course requirement, exclusive of GEOS 6340: Research in Geology and Earth Science, GEOS 7100: Independent Research, GEOS 7120: Professional Field Experience, GEOS 7300: Doctoral Dissertation, and GEOS 7350: Graduate Research.

6. Enroll in the following course for at least one semester:
GEOS 5010 - Geologic Communications and Presentations Credits: 1 hour

7. Complete 15 hours of the following:
GEOS 7300 - Doctoral Dissertation Credits: 1 to 15 hours

8. Demonstrate proficiency in two appropriate research tools.
At least one of the research tools must be completed outside of the student's declared core area of study. Students are strongly encouraged to complete at least one tool via course work or other training outside of the Geosciences Department. For details regarding acceptable research skills, consult with the graduate advisor. Research tools may include:

- Achieving a working knowledge of statistics by receiving a grade of "B" or better in an approved course or by showing the ability to apply advanced statistical analysis to the doctoral research.
- Demonstrating competence in computer science or programming by receiving a grade of "B" or better in an approved course or by applying computer programming to the doctoral research.
- Demonstrating proficiency in areas relevant to the doctoral research, including mathematics, biological sciences, chemistry, geography, remote sensing, physics, or engineering. Proficiency will be demonstrated by achieving a grade of "B" or better in an approved graduate course.
- Mastering the design, repair or development of instrumentation used as part of an approved Geosciences course or in the doctoral research.
- Demonstrating development, while enrolled in the doctoral program, of reading competency in a foreign language relevant (as deemed by the student's primary advisor) to the student's dissertation research. This skill will be demonstrated by receiving a grade of "B" or better in a 4010 course in the language, by passing a standardized examination, or by successfully translating one or more technical articles assigned by the student's primary advisor.

9. Attend weekly departmental seminars.
In each year in residence following a successful dissertation proposal defense, the student must give a 12-minute seminar presentation. An external presentation at an approved (by the student's doctoral committee) conference will fulfill this requirement in any year of study. The dissertation defense oral presentation, if completed during the academic year, will fulfill this requirement in the final year of study.

10. Students must give at least one scientific presentation in an approved (by the student's doctoral committee) external venue prior to graduation.

11. At least one first-authored paper must be accepted for publication in a peer-reviewed journal prior to graduation. Under exceptional circumstances, the doctoral candidate may petition the Geosciences faculty to allow a first-authored paper submitted to a journal for peer review to be accepted in lieu of an accepted publication. Decisions regarding the petition will be made by majority vote of the faculty.

12. Successfully defend dissertation.
The student will give a 50-minute public presentation. This will be followed by a closed-door defense to be conducted by the members of the student's doctoral committee. See this Graduate Catalog for policies and procedures in the event of an unsuccessful defense. The final written dissertation must conform to the requirements explained in the University's Guidelines for the Preparation of Theses, Projects, and Dissertations and may be written according to one of the following two options:

a. Option 1:
The student will write a traditional comprehensive dissertation based on the doctoral research. The dissertation should include an introduction, review of the relevant literature, description of methodology used in the dissertation research, presentation of the results (including appendices of data where appropriate), and discussion of the significance of the research.

b. Option 2:
The student will present at least two first-authored journal papers, which may include the paper written to fulfill program requirement #11, that have been accepted for publication in appropriate peer-reviewed journals. A separately written introduction including a brief literature review, summary of the relevance/conclusions of the studies and an appendix of data (where appropriate) must also be submitted.

Certificate Program in Applied Hydrogeology

The Certificate in Applied Hydrogeology program provides students with field, technical, and analytical skills that prepare them for successful careers in hydro- and environmental geology. Through online offerings, classroom, lab, and field studies students will learn how to collect environmental field data, water and sediment sampling techniques, the principles and practices of near-surface geophysics, drilling and water well installation methods, environmental assessment and hydrogeologic measurement techniques, field geochemistry, scientific writing, data presentation, data analysis, and problem-solving skills. Trained environmental professionals are needed to solve problems concerning drinking water supplies, wastewater treatment, water resources availability, subsurface contaminant transport, water quality and quality assessment, the effects of climate and land-use change on water and wetland resources, and many other environmental issues. Employment opportunities may include work dealing with: environmental consulting, environmental regulations, hydrogeologic investigation, wetland mitigation, flood prediction, pollution abatement and remediation, and environmental geochemistry.

Coursework is fifteen credit hours in Geosciences. The certificate requires completion of 6 credit hours of the Hydrology Field Course and 9 additional credit hours available either online or face-to-face. A list of the appropriate courses is available from the certificate coordinator. The certificate is open to degree and non-degree graduate students.

Prerequisite course or its equivalent
GEOS 5120 - Hydrogeology Credits: 3 hours

Required courses (6 credits)
Hydro field course
GEOS 5230 - Hazardous Waste Operation and Emergency Response Credits: 1 hour
GEOS 5240 - Remediation Design and Implementation Credits: 1 hour
GEOS 5250 - Surface Geophysics Credits: 1 hour
GEOS 5260 - Principles and Practices of Aquifer Testing Credits: 1 hour
GEOS 5270 - Principles of Well Drilling and Installation Credits: 1 hour
GEOS 5280 - Principles/Practices of Groundwater Sampling/Monitoring Credits: 1 hour

Choose three of the following (9 credits)
GEOS 5090 - Surface Water Hydrology Credits: 3 hours
GEOS 6170 - Stable Isotope Geochemistry Credits: 3 hours
GEOS 5450 - Hazardous Waste Remediation Credits: 3 hours
GEOS 6150 - Contaminant Hydrology Credits: 3 hours
GEOS 5360 - Glacial Geology Credits: 3 hours
GEOS 5060 - Introduction to Soils Credits: 3 hours

For retention students must comply with the following:
In order to remain in good academic standing, graduate students must maintain a minimum cumulative GPA of 3.0. Students who fail to meet the program's criteria may be placed on probation or dismissed from the program.

History

Wilson Warren, Chair
Main Office: 4301 Friedmann Hall
Telephone: (269) 387-4650
Fax: (269) 387-4651

David Benac
Robert F. Berkhofer, III
Luigi Andrea Berto
Linda Borish
José António Brandão
Janet Coryell
Marion Gray
Sally Hadden
Lynne Heasley
Mitch A. Kachun
Edwin Martini
James M. Murray
James Palmitessa
Lewis Pyenson
Eli Rubin
Larry Simon
Anise Strong
Nathan Tabor
Victor Xiong
Takashi Yoshida

Director of Graduate Studies
The director of graduate studies is the central application, admissions, and advising source in the department. All new students must consult with the director to be advised regarding a supervising professor, if one has not been assigned at admission.

Annual Review of All Master's and Doctoral Students
The Graduate Studies Committee (GSC) reviews all student files once a year. The review process, conducted by the GSC and the supervising professor, has two aims: 1) to advise students regarding the construction and development of their program of study, and 2) to address problems of incompletes; failing grades; or difficulties completing program requirements, course work, or theses. The GSC can shift students from one master's option to another, will warn students if they are in jeopardy of being dismissed, and can set conditions for students to meet to avoid dismissal.

Waiver of a Requirement
Any waiver from a requirement must be requested in writing to the Director of Graduate Studies and the Graduate Studies Committee for decision. Requests must be supported in writing by the student's supervising professor.

Master of Arts in History
Director of Graduate Studies: James Palmitessa
Room 4311, Friedmann Hall
james.palmitessa@wmich.edu

The Master of Arts in History serves both as preparation for doctoral study and as a professional degree in many fields of research, teaching, and public history.

Admission Requirements

1. Substantial undergraduate course work in history and closely related disciplines is typically required for admission to the Master of Arts program.
2. Graduate Record Examination (GRE) general aptitude test scores.
3. Three letters of recommendation from individuals familiar with the applicant's academic work.
4. A brief essay concerning applicant's academic and professional objectives, and a writing sample.
Students whose native language is other than English must achieve a TOEFL score of 600 or above, or otherwise demonstrate a command of English judged adequate by the department to pursue graduate study in the discipline.

Program Requirements
Three options for completing the degree are available.

Thesis Option (30 hours)
1. HIST 6010 - Historiography Credits: 3 hours

2. A broad field of specialization built around readings courses and research seminars.
At least two readings courses are required and additional course work in this area is strongly recommended. At least one research seminar (HIST 6750-6890) is required. Specific research emphases are developed in consultation with the supervising professor and department faculty. Consult the department's Graduate Handbook for further information.

3. Students must take at least two courses in which a major part of the course work incorporates theoretical or methodological approaches relevant to the study of history. Competence in theoretical or methodological tools is normally shown by a grade of "B" or better in approved course work or by an advanced degree in the appropriate social science or humanities discipline. Students must consult with their supervising professors and the director of graduate studies before enrolling in any course, to ensure that it will fulfill the requirement.

4. The department requires at least one course covering theory and/or research practices in an allied social science or humanities discipline.

5. Up to 6 hours of appropriate course work may be chosen outside the department, and up to 6 hours of appropriate course work in history at the 4000-level, exclusive of 4960-4990, may be elected with the approval of the supervising professor, the director of graduate studies, and the dean of the Graduate College.

6. Proficiency in a language other than English demonstrated by satisfactory completion of a 2010-level or 4010-level non-English language course, or by a translation examination.

Students specializing in medieval and ancient history are required, at a minimum, to demonstrate facility in reading one ancient language (e.g.: Latin or Greek) and one modern language other than English. See the Department of History Graduate Handbook for details.

7. Thesis: a major research investigation in the field of specialization. All students in the History Thesis Option must complete and successfully defend the M.A. thesis.

8. Students who fail to produce a satisfactory thesis may count course work taken (except thesis hours) toward a general option degree. If they are students in the doctoral program, they will be dismissed from that program, but will be allowed to continue course work until they have completed enough hours for a general option master's degree. See the Department of History Graduate Handbook for additional information regarding the thesis.

General Option (33 hours)
1. HIST 6010 - Historiography Credits: 3 hours

2. A minimum of one reading course and one research seminar (HIST 6730-6890) in related fields.

3. Students must take at least one course in which a major part of the course work incorporates theoretical or methodological approaches relevant to the study of history. Competence in theoretical or methodological tools is normally shown by a grade of "B" or better in approved course work or by an advanced degree in the appropriate

social science or humanities discipline. Students must consult with their supervising professors and the director of graduate studies before enrolling in any course, to ensure that it will fulfill the requirement.

4. Up to 12 hours of course work may be taken outside the department in an advisor-approved program of study, and up to 6 hours of appropriate course work in history at the 4000-level, exclusive of 4960-4990, may be elected with the approval of the supervising professor, the director of graduate studies, and the dean of the Graduate College.

5. The supervising professor and Examination Committee may require a student to demonstrate facility in a language appropriate to the student's course of study.

Students specializing in medieval and ancient history are required, at a minimum, to demonstrate facility in reading one ancient language (e.g.: Latin or Greek) and one modern language other than English. See the Department of History Graduate Handbook for details.

6. Comprehensive examination: A course-based written examination following completion of at least 24 hours of course work including required core courses and a research seminar. An oral examination may also be required by the student's Examination Committee.

Public History Option (33 hours)
1. HIST 6010 - Historiography Credits: 3 hours

2. A minimum of one reading course and one research seminar (HIST 6730-6890) in related fields.

3. Students must take at least three courses (one at the 6000-level) in which a major part of the course work focuses on tools particularly relevant to public historians. Courses meeting this requirement can be identified prior to enrollment by the director of graduate studies or the student's supervising professor.

4. From 3 to 6 hours of course work may be taken outside the department in a program of study approved by the supervising professor, and director of graduate studies. Up to 6 hours of appropriate course work in history at the 4000-level, exclusive of 4960-4990, may be elected with the approval of the supervising professor, the director of graduate studies, and the dean of the Graduate College.

5. An internship/practicum experience of 3 to 6 credit hours in a program of study approved by the supervising professor and director of graduate studies, the student may fulfill this requirement under one or more of the following course numbers (See the Department of History Graduate Handbook for details):

HIST 7100 - Independent Research Credits: 2 to 6 hours
HIST 7120 - Professional Field Experience Credits: 2-12 hours

6. Comprehensive examination: A course-based written examination following completion of at least 24 hours of course work including required core courses and a research seminar. An oral examination may also be required by the student's exam committee.

7. Language Requirement
Proficiency in a language other than English demonstrated by satisfactory completion of a appropriate 2010-level or 4010-level language course, or by a translation examination. See the Department of History Graduate Handbook for details.

Certificate Program in Ethnohistory

Ethnohistory is the study of cultures, combining research techniques and theoretical approaches from the fields of history and anthropology. The core of ethnohistory lies in the realization shared by practitioners of the benefits obtained through the use of multiple lines of evidence to study history and culture. Ethnohistorians recognize that documents, archaeological findings, oral histories, and ethnographies can be profitably compared, contrasted, and

integrated to elucidate the histories and cultural contexts of groups that have been ignored in conventional historical accounts. By juxtaposing multiple lines of evidence in an interdisciplinary manner, ethnohistorians can at once examine the distant and the local, the general and the particular, bringing human experience into better focus.

Western Michigan University is a center for ethnohistorical research on a global level, including the United States, Canada, West Africa, South Asia, and Europe. Particular areas of expertise include culture contact, colonialism, material analysis, historiography, oral history, gender, historical archaeology, ethnography, tribalization, globalization, and modernization. These topics are not restricted to any particular geographic area nor to any particular societal structure.

Admission Requirements
This certificate program is open to any student admitted to a graduate degree program at Western Michigan University.

Program Requirements
Each student will complete satisfactorily five courses (fifteen credit hours). Students will be required to take three approved courses, at least one of which will be outside of their home department; and take the ethnohistory seminar (HIST/ANTH 6090) two times, which will be alternately taught each year by faculty from history and anthropology.

Doctor of Philosophy in History

Director of Graduate Studies: James Palmitessa
Room 4311, Friedmann Hall
james.palmitessa@wmich.edu

The Doctor of Philosophy in History is designed to prepare students for careers in higher education, public and applied history, and historical administration. Preparation extends beyond archival research techniques to include oral traditions, ethnohistory, archaeology, material culture, museum studies, historic preservation, gender studies and collective memory. Students are provided with opportunities to teach in the undergraduate program under the direction of senior colleagues and receive training in additional professional skills.

Faculty research and instruction emphasize the social and cultural aspects of historical change. Resources include the Medieval Institute, the Center for Cistercian and Monastic Studies, the Rawlinson Centre for Anglo-Saxon and Manuscript Studies, the Kercher Center for Social Research, the Diether Haenicke Center for International Study, the Archives and Regional History Collection, and the holdings of the French Michilimackinac Research Project.

Admission Requirements
1. Admission normally requires a master's degree in history or a closely related discipline. No student shall be admitted to the Ph.D. program, except on probationary status, before having completed all work and examinations requisite to the M.A. degree.
2. Graduate Record Examination (GRE) general aptitude test scores.
3. Three letters of recommendation from individuals familiar with the applicant's academic work.
4. A brief essay concerning applicant's academic and professional objectives, and a writing sample.
5. Reading proficiency in languages other than English appropriate to the proposed program of study is strongly recommended; studies to meet deficiencies in this area must be begun during the first year of doctoral study. Students whose native language is other than English must achieve a TOEFL score of 600 or above, or otherwise demonstrate a command of English judged adequate by the department to pursue graduate study in the discipline.
6. Students whose native language is other than English must achieve a TOEFL score of 600 or above, or otherwise demonstrate a command of English judged adequate by the department to pursue graduate study in the discipline.

Program Requirements
Award of the Doctor of Philosophy in History is based upon successful completion of synthetic essays in major, minor, and outside fields; and demonstration in seminars and the dissertation of the ability to conduct original research. Programs of study are developed in consultation with the supervising professor and appropriate faculty. The program requires a minimum of 75 hours of credit beyond the baccalaureate degree or 45 hours beyond the master's degree.

All students must complete two core courses: HIST 6010 (in the first year of study) and HIST 6980 (prior to teaching as an instructor of record). These courses serve several roles: They provide students with the historical and theoretical underpinnings of the profession of historian in all its myriad forms and applications; they train students in the various skills needed to succeed as professional historians in various venues; and they help students become part of the graduate student community in the department. Each student must also complete course work in theory and research techniques in an allied social science or humanities discipline appropriate to the student's research agenda.

Major Field
The major field designates an area of study in which the student seeks to establish primary professional competence.

Minor Field
A minor field designates an area of study that is complementary to, or provides skills necessary to, the major field.

Outside Field
The outside field may comprise work in a series of courses within a discipline outside of, but bearing upon, the major field and dissertation topic.

Language Requirement
Students must demonstrate reading proficiency in at least one language other than English appropriate for their programs of study prior to qualifying examinations. Proficiency is demonstrated by satisfactory completion of a 2010-level or 5010-level non-English language course, or by a translation examination. Many major fields have additional non-English language requirements. All required course work to achieve necessary proficiencies must be completed prior to qualifying examinations

Theory, Research, and Applications Course Work
Each student must complete approved course work in theory and research techniques in an allied social science or humanities discipline appropriate to the candidate's research agenda. Course work is selected in consultation with the student's examination committee and must be approved by the Director of Graduate Studies.

Research Tools
Three research tools are required. Competence in one language other than English as a research tool is required for all doctoral students in the history program. When appropriate, a second non-English language may be used as a second research tool. Requirements for demonstrating language competence are specified in the History Graduate Handbook. Other research tool requirements can be met either with a third non-English language or through approved course work that incorporates theoretical or methodological approaches relevant to the study of history. Competence in theoretical or methodological tools is normally shown by a grade of "B" or better in approved course work or by an advanced degree in the appropriate social science or humanities discipline. Students must consult with their supervising professors and the director of graduate studies before enrolling in any course, to ensure that it will fulfill the requirement.

Qualifying Examinations
Written and oral qualifying examinations are taken after the satisfactory completion of all course work and foreign language requirements, typically during the student's sixth full-time semester. The qualifying examination confirms the student's competency in major, minor, and outside fields, and demonstrates that the student possesses the skills necessary to pursue dissertation research and writing. The examination involves the student's preparation of a Portfolio of work, including a series of synthetic essays to demonstrate field competency; selected papers from graduate seminars; materials related to teaching; a dissertation proposal; and other documentation, as specified in the History Graduate Handbook. The submission of the written Portfolio is followed by an oral defense and examination.

Dissertation
The dissertation comprises from 12 to 18 hours of graduate course work depending upon other characteristics of the program of study.

International and Area Studies

Donald McCloud, Director
Room B 200, Ellsworth Hall
Telephone: (269) 387-3985

Mathematics

Steven Ziebarth, Chair
Main Office: 3319 Everett Tower
Telephone: (269) 387-4510
Fax: (269) 387-4530

Patrick Bennett
Christine Browning
Jon Davis
Clifton E. Ealy, Jr.
Gene Freudenburg
Ok-Kyeong Kim
Kathleen Kline
Melinda Koelling
Yuri Ledyaev
Mariana Levin
Jane-Jane Lo
Niloufer Mackey
Steven Mackey
John Martino
Tabitha Mingus
Annegret Paul
Srdjan Petrovic
David Richter
Allen Schwenk
Jay Treiman
Jay Wood
Ping Zhang
Qiji Zhu

The Department of Mathematics offers graduate programs leading to the Master of Arts in Mathematics, the Master of Arts in Mathematics Education, the Master of Science in Applied and Computational Mathematics, the Doctor of Philosophy in Mathematics, and the Doctor of Philosophy in Mathematics Education.

Financial Assistance
The Department of Mathematics offers opportunities for financial support of graduate students through Graduate Assistantships and Fellowships. Individuals desiring further information about such opportunities, or about the graduate program as a whole, should contact :

Rebecca Powers
Mathematics Graduate Office
3325 Everett Tower
Telephone: (269) 387-4512
e-mail: Rebecca.powers@wmich.edu

Master of Arts in Mathematics

Advisor: See Mathematics Office,
Room 3319, Everett Tower

The Master of Arts in Mathematics extends the student's knowledge in the areas of algebra, real and complex analysis, applied mathematics, combinatorics, geometry, number theory, and topology. The program permits specialization in preparing for advanced study, and provides additional training for teachers of mathematics and students seeking employment in industry.

Admission Requirements
To gain admission to this program the student must have completed, with satisfactory grades, an undergraduate major in mathematics. This major must ordinarily include a course in modern algebra and a course in advanced calculus or real analysis. If the student's undergraduate program in mathematics does not meet approved standards, the student may be required to elect additional courses or otherwise satisfy the requirements of the department.

Program Requirements
1. Complete a minimum of thirty hours of approved course work with at least twenty-four hours in mathematics, including:

a. MATH 5220 - Introduction to Topology Credits: 3 hours Or have had the equivalent prior to entering the program.

b. MATH 5300 - Linear Algebra Credits: 3 hours or have had the equivalent prior to entering the program.

c. MATH 5710 - Advanced Calculus II Credits: 3 hours or have had the equivalent prior to entering the program.

d. MATH 6300 - Abstract Algebra I Credits: 3 hours

e. Either:
MATH 6700 - Real Analysis I Credits: 3 hours or
MATH 6760 - Complex Analysis Credits: 3 hours

f. An approved graduate level sequence.

2. A student must get a "B" or better in the following:
MATH 5220 - Introduction to Topology Credits: 3 hours
MATH 5300 - Linear Algebra Credits: 3 hours
MATH 5710 - Advanced Calculus II Credits: 3 hours

Master of Arts in Mathematics Education

Advisor: See Mathematics Office,
Room 3319, Everett Tower

This program deepens and extends secondary school mathematics teachers' understanding of mathematics and its learning and teaching. Through a focus on both theory and practice, this program enables teachers to strengthen their classroom effectiveness, to assume leadership roles in curriculum and instruction, and, if so desired, continue with doctoral study in mathematics education.

Admission Requirements
In addition to the general admission requirements of the Graduate College, admission to this curriculum requires a bachelor's degree with at least a secondary teaching minor in mathematics, equivalent to that offered at Western, and fifteen hours of undergraduate work in professional education or its equivalent.

Program Requirements
In meeting these program requirements an effort is made to select courses that deal with concepts and skills related to central themes in secondary school mathematics programs. These themes are given substance in courses that deal with topics enabling students to review and build on their previous course work, to explore new areas, to develop thorough understandings of concepts that are initiated in secondary school mathematics courses, and to achieve a high level of mastery of skills associated with these concepts.

1. Complete at least 15 credit hours of approved graduate mathematics courses usually selected from:
MATH 5100 - Applied Matrix Algebra Credits: 3 hours
MATH 5300 - Linear Algebra Credits: 3 hours
MATH 5800 - Number Theory Credits: 3 hours
MATH 6110 - Mathematical Applications Credits: 3 hours
MATH 6150 - Intermediate Analysis Credits: 3 hours
MATH 6160 - Survey of Algebra Credits: 3 hours
MATH 6170 – Survey of Discrete Mathematics Credits: 3 hours
MATH 6490 - Studies in Geometry Credits: 3 hours

STAT 6120 - Data Analysis Credits: 3 hours

2. Complete 12 credit hours of approved graduate mathematics education courses selected from:
MATH 6530 - Studies in Teaching Secondary School Mathematics Credits: 3 hours
MATH 6540 - Secondary School Mathematics Curriculum Studies Credits: 3 hours
MATH 6550 - Issues and Trends in Secondary School Mathematics Credits: 3 hours
MATH 6950 - Seminar in Mathematics Education Credits: 1-4 hours

3. Complete an approved three-credit hour 6000-level elective, selected from mathematics, mathematics education, or professional education.

Master of Science in Applied and Computational Mathematics

Advisor: See Mathematics Office, Room 3319, Everett Tower

Students completing a Master of Science in Applied and Computational Mathematics will have obtained a broad background in the mathematical sciences, including statistics, differential equations, mathematical programming, and computational mathematics. The use of mathematical models to study practical problems is emphasized throughout the program. This program prepares students for professional employment is industry or government. By carefully selecting electives, a student can also be prepared for further studies in mathematics or to teach mathematics.

Admission Requirements

Entering students are expected to have taken courses in calculus (including multivariate calculus and differential equations), linear algebra, advanced calculus, (calculus-based) probability or statistics, and have a working knowledge of computer programming. The courses at WMU which satisfy the admission requirements are: MATH (1220 or 1700), (1230 or 1710), 2720, 3740, 2300, 5700, STAT (3620, 5600, or 3640), and CS (1070, 1110, 1120, or a CS course approved by an advisor). A promising student may be admitted with some deficiencies in these admission requirements. The missing work then becomes an extra program requirement.

Program Requirements

1. Complete the following 22 or 23 semester hours of specified courses:
MATH 5070 - Numerical Analysis I Credits: 3 hours
MATH 5740 - Advanced Differential Equations Credits: 3 hours
MATH 6020 - Mathematical Modeling I Credits: 3 hours
MATH 6070 - Numerical Analysis II Credits: 3 hours
MATH 6370 - Numerical Linear Algebra Credits: 3 hours
MATH 6900 - Seminar in Applied Mathematics Credits: 1-3 hours This course may be repeated for credit.

Select Either:
IEE 6100 - Linear Programming for Engineers Credits: 3 hours or
MATH 6080 - Linear Programming Credits: 3 hours

And Either:
STAT 6620 - Applied Linear Models Credits: 3 hours

With the approval of the advisor, a student may substitute approved electives for any of the specified courses which were previously taken.

2. Complete at least 9 semester hours of approved electives which are different from the above courses.

Mathematics
MATH 5100 - Applied Matrix Algebra Credits: 3 hours or
MATH 5300 - Linear Algebra Credits: 3 hours
MATH 5270 - Differential Geometry of Curves and Surfaces Credits: 3 hours
MATH 5710 - Advanced Calculus II Credits: 3 hours

MATH 5720 - Vector Calculus and Complex Variables Credits: 4 hours
MATH 6050 - Optimization Credits: 3 hours
*MATH 6090 - Studies in Applied Math Credits: 3 hours This course may be repeated for credit.
MATH 6760 - Complex Analysis Credits: 3 hours
*MATH 6900 - Seminar in Applied Mathematics Credits: 1-3 hours This course may be repeated for credit.
*MATH 6990 - Reading and Research Credits: 1-6 hours This course may be repeated for credit.
*MATH 7120 - Professional Field Experience Credits: 2-12 hours This course may be repeated for credit.
* These courses may be repeated for credit.

Computer Science
CS 5270 - Computer Graphics Credits: 3 hours
CS 5800 - Theory Foundations Credits: 3 hours
CS 6310 - Advanced Design and Analysis of Algorithms Credits: 3 hours
CS 6320 - Intractable Problems and Approximation Algorithms Credits: 3 hours
CS 6800 - Advanced Theory of Computation Credits: 3 hours

Industrial Engineering
IEE 6110 - Deterministic Methods in Operations Research Credits: 3 hours

Statistics
STAT 5660 - Nonparametric Statistical Methods Credits: 3 hours
STAT 6600 - Statistical Theory II Credits: 4 hours
STAT 6620 - Applied Linear Models Credits: 3 hours
STAT 6640 - Design of Experiments I Credits: 3 hours
STAT 6670 - Introduction to Random Processes Credits: 3 hours
STAT 6800 - SAS Programming Credits: 3 hours

Doctor of Philosophy in Mathematics

Advisor: See Mathematics Office,
Room 3319, Everett Tower

Admission Requirements
A student may enter this program with a master's degree or directly upon completion of a bachelor's program. In addition to satisfying the general admission requirements of the Graduate College, the student must have acquired a sufficient level of mathematical background as determined by the Mathematics Faculty of the Department.

Program Requirements

Mathematics
A student must complete the following requirements:

1. Take at least 60 hours beyond the bachelor's degree - 45 hours, excluding MATH 7300.
There must be 30 hours of mathematics courses numbered 6000 or above, excluding MATH 7300. It is required by the University that the dissertation hours and 30 hours of course work be completed after admission to the doctoral program. The 60 hours will include the following courses.

- One course in each of Real Analysis (MATH 6700), Complex Analysis (MATH 6760), Topology (MATH 6210), and Algebra (MATH 6300).
- Three two-semester graduate sequences, including at least two of
    - Real Analysis (MATH 6700-6710)
    - Algebra (MATH 6300-6310)
    - Topology (MATH 6210-6240), MATH 6250 may be substituted for MATH 6240.
- These three two-semester graduate sequences are the standard option, if no exception is sought as described below.

- An approved course in applied mathematics or probability/statistics.

2. Take three comprehensive examinations.

- A student must pass three comprehensive examinations, including at least two of Analysis, Topology, and Algebra. These three examinations constitute the standard option, if no exception is sought as described below.
- In general, a student is strongly encouraged to take an examination as soon as it is offered once the student has completed the corresponding two-semester sequence. However, the student must work with their advisor to determine the student's readiness for each examination such that they are completed within the maximum allowable timeline: success on at least one examination at 2.5 years into the program and success on all three examinations at 3.5 years. Any alteration to the timeline must be approved by the Graduate Committee.
- A student must successfully complete a given examination by the second attempt and will be notified in writing of the results of each comprehensive examination within two weeks of its administration.

3. A student may, with the approval of the advisor and the Graduate Committee:

- Replace one of the two-semester sequences above with two courses (preferable a sequence) at the graduate level in the student's planned area of specialty. (The courses may include MATH 6990 Independent Study)
- Replace one of the three comprehensive examinations above with one in the student's planned area of specialty.

An exception to one of these sequences may include, but are not limited to, graph theory, collegiate mathematics education, applied mathematics, or statistics.

Substitution proposals for either must be submitted by the advisor in writing to the Graduate Committee at least three months prior to the plan proceeding. The proposal must include a clear description of and rationale for the submission, a timeline for completion, and a list of faculty (minimum of two) who have agreed to be responsible for any courses or exam (construction and grading) under consideration. Any proposals for a substitute comprehensive examination must also include a syllabus for the alternative comprehensive examination.

4. Demonstrate competency in two research tools, including at least one foreign language.
The foreign language research tool may be satisfied by completing courses numbered 4000 in foreign languages with a “B” or better or by demonstrating the ability to read mathematics in foreign languages as certified by the Graduate Committee. Competence in computer usage as a research tool is usually demonstrated by completing 3 hours of MATH 6880 with a “B” or better.

5. Complete a teaching practicum including teaching an approved undergraduate mathematics course.

6. Complete a dissertation that is a significant new contribution to mathematics and defend the dissertation before the student’s doctoral committee. This requires at least 15 hours of the following course:
MATH 7300 - Doctoral Dissertation Credits: 15 hours

7. The following courses may not be included in the required 60 hours.
MATH 6110 - Mathematical Applications Credits: 3 hours
MATH 6120 - Data Analysis Credits: 3 hours
MATH 6150 - Intermediate Analysis Credits: 3 hours
MATH 6160 - Survey of Algebra Credits: 3 hours
MATH 6170 – Survey of Discrete Mathematics Credits: 3 hours

Doctor of Philosophy in Mathematics Education
Advisor: See Mathematics Office,
Room 3319, Everett Tower

The Doctor of Philosophy in Mathematics Education focuses on school mathematics curricula, teaching and learning mathematics, and research and evaluation in mathematics education. Programs may focus on preparation for mathematics education faculty positions in colleges and universities, supervision and curriculum development positions in school systems, or evaluation positions in education-related institutions.

Admission Requirements

Although a student may enter the program with a bachelor's degree, most candidates for admission will have completed a master's degree in mathematics or mathematics education and have classroom teaching experience at a pre-college level. Candidates must have a mathematics and methods background at least equivalent to that provided by the secondary mathematics teaching major at Western Michigan University. Those admitted to the program without prior K-12 teaching experience or without course work in teaching and learning will be required to obtain such experiences during their program of study. Admission will be determined by review of the following: a) academic background and transcripts, b) professional experience, c) three letters of recommendation, d) resume, e) written statement of at least 500 words indicating professional goals and purpose for seeking a doctoral degree, f) an interview with the Mathematics Education Faculty (when requested), and g) satisfactory completion of the general admission requirements of the Graduate College.

Program Requirements

This degree program requires a minimum of 80 credit hours beyond the bachelor's degree. Most students work half-time as research or teaching assistants and spend at least two years on campus. Assistantship experience is a significant part of the doctoral program. In addition to assistantships in mathematics education, other opportunities are available in mathematics and on faculty research grants and projects. Students are expected to satisfy the following program requirements.

1. Complete required course work:

At least 24 approved graduate credit hours in mathematics and statistics, including at least six courses from this list: general topology (MATH 5220), linear algebra MATH 5300), analysis (MATH 5700 or 6150), abstract algebra (MATH 6300 or 6160), graph theory (MATH 6400), geometry (MATH 6490), and statistics (STAT 6120 or STAT 6620). The remaining courses are to be selected, in consultation with program advisors, from the 5000- and 6000-level offerings in applied mathematics, pure mathematics, and statistics.

At least six approved graduate credit hours in research methods including a course in quantitative methods (STAT 6620, PSY 6340, or EMR 6450) and a course in qualitative methods (EMR 6480).

At least 21 approved graduate credit hours in mathematics education including issues and trends in mathematics education (MATH 6570), psychology of learning mathematics (MATH 6580), research in mathematics education (MATH 6590), and two advanced methods courses (selected from MATH 6510 and 6530).

Additional approved graduate credit hours selected from mathematics, statistics, mathematics education, psychology, and professional education sufficient to meet the minimum program requirements.

2. Pass three comprehensive examinations:

K-12 mathematics curriculum and instruction
Psychological foundations and mathematical learning
Research in mathematics education

3. Acquire competence in two research tools.

This may be satisfied by demonstrating competence in computer usage, usually through 3 credit hours of MATH 6880, and in educational research methods, usually through completion of EMR 6480 and one of STAT 6620, PSY 6340, or EMR 6450.

4. Complete a Teaching Practicum involving an undergraduate course in mathematics or mathematics education approved by the department.

MATH 7120 - Professional Field Experience Credits: 2-12 hours

5. Complete and successfully defend a dissertation in mathematics education requiring 15 credit hours of:

MATH 7300 - Doctoral Dissertation Credits: 15 hours

Procedures

Upon admission a student will, within the first year of enrollment, work with a two-member advisory committee to design a Plan of Study for completing the Ph.D. At this time, any course requirements already satisfied through prior master's level work will be determined by the advisory committee. After a tentative Plan of Study has been designed, one of the advisory committee members will be assigned to serve as the student's advisor for program matters leading up to the formulation of a dissertation proposal. The Plan of Study will be reviewed and adjusted as necessary throughout the program.

A student will schedule comprehensive examinations in consultation with the program advisor. The examinations in curriculum and in psychology will each be three-hour written examinations. The examination in research and design will be a take-home examination written over a period of one week followed within two weeks of submission by a one-hour oral defense conducted with at least two graduate faculty in mathematics education. If a student fails a comprehensive examination, the student must retake the examination within a year of the first attempt. A student who fails a comprehensive examination twice will be dismissed from the program at the end of the semester when the exam was taken.

By the time a student has passed comprehensive examinations in curriculum and instruction and in psychological foundations, the student will take reading courses from a potential dissertation advisor with the goal of developing a proposal for dissertation research. Depending upon the nature of the proposed research, the student may be required to conduct a pilot study.

As soon as a student has passed all three comprehensive exams and shown competency in the two research tools, the student will, in consultation with a chosen dissertation advisor, form a dissertation committee. The chosen dissertation advisor will become the student's program advisor. The dissertation committee shall consist of the dissertation advisor, a second reader, at least one other faculty member, and a member from outside the department. At a time mutually convenient to the student and the dissertation committee, the student will give an open public presentation of the proposed dissertation research and answer questions on the proposal. A student will be allowed to take MATH 7300 credits only after a dissertation committee has been formed and the dissertation proposal is accepted by all its members.

After completing a dissertation and all other requirements for the Ph.D., a student will present an open public defense of the dissertation followed by an open question period. The dissertation committee will then meet in private to decide acceptance or rejection of the dissertation and defense. All committee members must agree on acceptance.

Medieval Institute

Jana K. Schulman, Director
Main Office: 200E Walwood Hall
Telephone: (269) 387-8745
Fax: (269) 387-8750

Elizabeth C. Teviotdale, Assistant Director
113E Walwood Hall
Telephone: (269) 387-8830
Fax: (269) 387-8750

Jeffrey Angles
Robert Berkhofer III
Luigi Andrea Berto
Elizabeth Bradburn
Lofton L. Durham III
Robert Felkel
Rand Johnson
Paul Johnston Jr.
David Kutzko
Molly Lynde-Recchia
Mustafa Mirzeler
James Murray
Natalio Ohanna
James Palmitessa
Pablo Pastrana-Pérez
Eve Salisbury
Larry Simon
Susan Steuer
Anise Strong
Grace Tiffany
Kevin J. Wanner
Victor Xiong

Master of Arts in Medieval Studies

Advisor: Jana K. Schulman
The Medieval Institute, Walwood Hall

The Medieval Institute of Western Michigan University offers an interdisciplinary program leading to the Master of Arts in medieval studies. Students may choose a thesis or non-thesis option, depending on their career plans, personal interests, and intellectual orientation. Either option provides a broad background in medieval history, languages, literatures, and religion.

Western Michigan University offers an academic environment conducive to the study of the Middle Ages. Western Michigan University is the host of the annual International Congress on Medieval Studies, and Medieval Institute Publications publishes series of books and journals in the field of medieval studies. The Richard Rawlinson Center for Anglo-Saxon Studies and Manuscript Research offers further opportunities for research and study.

Admission Requirements
In addition to meeting the general admission requirements of the Graduate College, an applicant must submit scores from the Graduate Record Examination General Test, three letters of recommendation, an academic writing sample, and a written statement of intent.
Program Requirements

Coursework
A total of 32 hours of coursework, or 35 hours for thesis writers, is required.

Required core courses, in which a grade of "B" or better must be earned (14 hours)
MDVL 5300 - Introduction to Medieval Studies Credits: 1 hour
ENGL 5300 - Medieval Literature Credits: 3 hours
HIST 5501 - Medieval History Proseminar Credits: 3 hours
LAT 5600 - Medieval Latin Credits: 4 hours
REL 5000 - Historical Studies in Religion Credits: 2 to 4 hours
(Topic: Medieval Christianity Credits: 3 hours)

A 6000-level Theory or Methods course (3 hours)
Course will be chosen from a list approved by the Curriculum and Assessment committee.

Electives (12-15 hours)
Electives totaling 12 hours at the 6000-level or above pre-approved by the Director of the Medieval Institute. For thesis writers, 9 hours of electives at the 6000-level or above and, in addition, 6 hours of thesis credit.

Capstone Writing Seminar
MDVL 6900 - Medieval Capstone Seminar Credits: 3 hours

Languages
Latin and a second medieval or modern language is required.

1. It is strongly recommended that students take the Level One University of Toronto Centre for Medieval Studies Medieval Latin exam before completing their M.A. degree.

2. Reading proficiency in a second medieval or modern language is demonstrated by a grade of "B" or better in an approved course or by passing the graduate reading examination offered by the Department of World Languages and Literatures or the Department of Spanish.

Capstone Writing Seminar and Oral Examination (Both are required)
1. The Capstone Writing Seminar is a 6000-level three-credit course in the advanced study of interdisciplinary questions in medieval studies with a focus on developing academic writing through the preparation of a writing portfolio. The writing portfolio will comprise two graduate-level seminar papers with two distinct disciplinary foci. The two seminar papers will be revisions of papers written in past courses. Students are encouraged to consult the professors they originally wrote the papers for and their Examination Committee for guidance. For students writing theses, one paper may be a chapter of the thesis.

2. The hour-long Oral Examination is an opportunity for the faculty and students to explore content in medieval studies based on prior coursework and written work completed in the Capstone Writing Seminar. The Examination Committee will be composed of three members named by the Director in consultation with the student. Students will submit the two Capstone Writing Seminar papers to the Examination Committee no less than two weeks prior to examination date to serve as the basis for examining written work.

Students will receive an assessment of High Pass, Pass, Low Pass, or Fail. If a student fails an examination the examining faculty will determine whether the student is offered a one-time re-examination to be completed within 12 months of the first examination date.

Option: Thesis
With the thesis advisor's approval of a prospectus, a student may complete the degree by producing a Master's thesis (6 hours) under the direction of a Thesis Committee. The Thesis Committee will be composed by the Director in consultation with the student. Students writing theses must also take the Capstone Writing Seminar and Oral Examination, but may use a thesis chapter as one of their seminar papers.

Certificate Program in the History of Monastic Movements

Advisor: Jana K. Schulman
Susan Steuer, Interim Director, Center for Cistercian and Monastic Studies
111E Walwood Hall
269-387-8748

The Graduate Certificate in the History of Monastic Movements is open to students enrolled in a graduate degree program at Western Michigan University. The certificate requires 18 credit hours of approved courses, including a Seminar on Monastic and Communitarian Movements offered by faculty of one or more of the participating departments or institutes.

Program requirements

Students are required to receive at least a "B" in the following courses (or in equivalent courses taken at other institutions).

MDVL 6000 - Advanced Seminar in Medieval Studies Credits: 2 to 4 hours
(Topic: History of Monastic and Related Movements Credits: 3 hours)
LAT 5600 - Medieval Latin Credits: 4 hours (or another appropriate research language)

And:
At least 11 additional credit hours in graduate courses on appropriate topics (see partial list of offerings below).
Intermediate-level reading knowledge of a modern language, demonstrated by examination or by a course (not to be counted among the 18 hours) appropriate to the student's field of concentration.

Course List:
ENGL 5300 - Medieval Literature Credits: 3 hours (monastic emphasis)
ENGL 5550 - Studies in Major Writers Credits: 3 hours
(Topic: Medieval Women Writers)
HIST 5500 - Topics in Medieval History Credits: 3 hours
(Topic: Life in a Medieval Monastery)
HIST 6120 - Readings in Medieval History Credits: 3 hours
(Topic: Carolingian Monasticism)
(Topic: Early Monastic Movements)
(Topic: Monastic Reform in the High Middle Ages)
(Topic: Women in Medieval Religion: Nuns and Others)
HIST 6820 – Research Seminar in Medieval History Credits: 3 hours
(Topic: Aspects of the Cistercian Reform)
(Topic: Cistercian Writers of the Twelfth and Thirteenth Centuries)
(Topic: Mendicants and their World)
(Topic: Military and Ransoming Orders and the Crusades)
(Topic: Monastic Hagiography)
(Topic: Monastic Historians and Their Histories, ca. 900-1200)
(Topic: The Spirituality of Medieval Monasticism)
LAT 5500 - Independent Study in Latin Credits: 1 to 3 hours
(Topic: Readings in Latin Literature (monastic emphasis))
SPAN 5600 - Studies in Spanish Literatures Credits: 3 hours
(Topic: El camino de Compostella)

Philosophy

Timothy McGrew, Chair
Main Office: 3004 Moore Hall
Telephone: (269) 387-4390
Fax: (269) 387-4389
E-mail: philosophy@wmich.edu
URL: http://www.wmich.edu/philosophy

Kent Baldner

Master of Arts in Philosophy
Advisor: Dan Dolson, Director of Graduate Studies
c.daniel.dolson@wmich.edu

The Master of Arts in Philosophy offers advanced study in the main subject areas and historical periods of philosophy.

Admission Requirements
In addition to satisfying the admission requirements of the Graduate College, applicants are expected to have completed a minimum of twelve semester hours of undergraduate work in philosophy, including a course in the history of modern philosophy, and a course in symbolic logic, and to have achieved a 3.0 or above overall grade point average in the applicant's undergraduate philosophy courses. The GRE is required for full consideration for funding. The application deadline for Fall is February 15.

Program Requirements

Non-Thesis Option
To complete the Non-Thesis Option for a Master of Arts in Philosophy, students must complete:

1. at least 1 course (no fewer than 3 credit hours) in each of the three Concentration areas (the "breadth requirement");
2. at least 3 courses (no fewer than 9 credit hours) in one of the Concentration areas (the "depth requirement");
3. a grade of B of better in all courses;
4. a minimum of 24 credit hours of 5000- or 6000-level courses in the Department of Philosophy; and
5. a minimum of 30 graduate credit hours. (With the authorization of the Department Graduate Advisor, students may count up to 6 credit hours of courses from other departments.)

Thesis Option
To complete the Thesis Option for a Master of Arts in Philosophy, students must complete

1. at least 1 course (no less than 3 credit hours) in each of the three Concentration areas (the "breadth requirement"),
2. at least 3 courses (no less than 9 credit hours) in one of the Concentration areas (the "depth requirement"),
3. a grade of B of better in all courses,
4. a minimum of 24 credit hours of 5000- or 6000-level courses in the Department of Philosophy,
5. a minimum of 30 graduate credit hours. (With the authorization of the Department Graduate Advisor, students may count up to 6 credit hours of courses from other departments, and 6 credit hours of PHIL 7000. Please see Graduate Advisor for details.)

Concentration Areas
The department offers graduate courses in philosophy in three Concentration Areas: Metaphysics and Philosophy of Mind, Epistemology and Philosophy of Science, and Theoretical and Practical Ethics. Students must declare a concentration by the end of their first semester but may, with departmental approval, change this at a later date. Students fulfilling their depth requirement in Metaphysics and Philosophy of Mind must take
PHIL 6330 - Metaphysics. Students with a Concentration in Epistemology and Philosophy of Science must take

PHIL 6320 - Theory of Knowledge. Students with a Concentration in Theoretical and Practical Ethics must take PHIL 6310 - Ethical Theory.

a. Metaphysics and Philosophy of Mind:

Courses that may, given the Proviso below, count for credit in Metaphysics and Philosophy of Mind are:
PHIL 5120 - Aesthetics Credits: 3 hours
PHIL 5200 - Philosophical Applications of Symbolic Logic Credits: 3 hours
PHIL 5400 - Philosophy of Mind Credits: 2-4 hours
PHIL 5700 - Philosophical Topics Credits: 1-4 hours
PHIL 6000 - Colloquium Credits: 2-4 hours
PHIL 6100 - Seminar in the History of Philosophy Credits: 2-4 hours
PHIL 6200 - Philosophy of Language and Logic Credits: 2-4 hours
PHIL 6330 - Metaphysics Credits: 2-4 hours
PHIL 6500 - Philosophy of Religion Credits: 2-4 hours

b. Epistemology and Philosophy of Science

Courses that may, given the Proviso below, count for credit in Epistemology and Philosophy of Science are:
PHIL 5120 - Aesthetics Credits: 3 hours
PHIL 5200 - Philosophical Applications of Symbolic Logic Credits: 3 hours
PHIL 5550 - Advanced Philosophy of Science Credits: 2-4 hours
PHIL 5700 - Philosophical Topics Credits: 1-4 hours
PHIL 6000 - Colloquium Credits: 2-4 hours
PHIL 6100 - Seminar in the History of Philosophy Credits: 2-4 hours
PHIL 6200 - Philosophy of Language and Logic Credits: 2-4 hours
PHIL 6320 - Theory of Knowledge Credits: 2-4 hours
PHIL 6500 - Philosophy of Religion Credits: 2-4 hours

c. Theoretical and Practical Ethics

Courses that may, given the Proviso below, count for credit in Theoretical and Practical Ethics are:
PHIL 5120 - Aesthetics Credits: 3 hours
PHIL 5440 - Practical Ethics Credits: 3 hours
PHIL 5700 - Philosophical Topics Credits: 1-4 hours
PHIL 6000 - Colloquium Credits: 2-4 hours
PHIL 6100 - Seminar in the History of Philosophy Credits: 2-4 hours
PHIL 6310 - Ethical Theory Credits: 2-4 hours

Proviso:

For courses listed under more than one Concentration, the faculty member and student will come to an agreement concerning which concentration a given course will fall under, determined by the course topic and content. Students may count a single, given offering of a course under only one Concentration. The following courses do not count for credit under any Concentration:
PHIL 5980 - Readings in Philosophy Credits: 1-4 hours
PHIL 7000 - Master's Thesis Credits: 1-6 hours
PHIL 7100 - Independent Research Credits: 2-6 hours

Physics

Kirk Korista, Chair
Main Office: 1120 Everett Tower
Telephone: (269) 387-4940
Fax: (269) 387-4939

Manuel Bautista
Clement Burns
Zbigniew Chajecki
Sung Chung
Michael Famiano
Thomas Gorczyca
Charles Henderson
Emanuel Kamber
Asghar Kayani
Elena Litvinova
Arthur McGurn
Paul Pancella
Lisa Paulius
Alvin Rosenthal
David Schuster
John Tanis

Master of Arts in Physics

Advisor: Paul Pancella
Room 2219 Everett Tower

The Department of Physics offers a program leading to the Master of Arts in Physics. The objective of the program is to enable students to acquire the knowledge and skills needed in physics-related occupations in industry, community college teaching, or entry into Ph.D. programs in science education. Students who intend to eventually obtain a Ph.D. degree in physics should enroll directly into the Ph.D. program. Thirty hours of graduate credit are required. These credits shall include PHYS 6150, PHYS 6220, PHYS 6300, and PHYS 6620. An additional requirement is a grade point average of 3.00 or higher in the above four required courses, or to complete a Master's Thesis.

Admission Requirements
Students entering this program are expected to have acquired a bachelor's degree in physics or at least an equivalent amount of experience and training (including training in mathematics at the appropriate level). Prospective students are required to take the Graduate Record Exam General Test and submit their scores to WMU. Preference in admission is given to students who have taken and earned a good score on the GRE physics subject test. The department graduate programs advisor will provide assistance to students seeking admission to this program and will recommend ways of eliminating any deficiencies in course work.

Program Requirements
The 30 semester hours of graduate credit must include the following:

1. Eighteen hours of required courses in physics, namely: (Substitutions for these courses may be made only with the approval of the graduate advisor.)
PHYS 6100 - Research Seminar Credits: 1 hour
PHYS 6150 - Mathematical Physics Credits: 3 hours
PHYS 6200 - Computational Physics Credits: 2 hours
PHYS 6220 - Quantum Mechanics I Credits: 3 hours
PHYS 6240 - Statistical Mechanics Credits: 3 hours
PHYS 6300 - Classical Mechanics Credits: 3 hours

PHYS 6620 - Electricity and Magnetism I Credits: 3 hours

2. Minimum grade point average in four core courses or thesis option:
Either successful completion of PHYS 6150, PHYS 6220, PHYS 6300, and PHYS 6620 with a grade point average of 3.00 or higher, or satisfactory completion of 6 credit hours in:
PHYS 7000 - Master's Thesis Credits: 1 to 6 hours

Note: The thesis may be either theoretical or experimental in nature and is accomplished under the guidance of a committee of the graduate faculty in Physics. The committee may require an oral defense of the thesis before approving it for submission to The Graduate College.

3. Additional Hours
Additional hours from Physics, Computer Science, Electrical Engineering, Mathematics, or other departments to be chosen with the consent of the graduate advisor.

Graduate students are required to attend the physics colloquia, which constitutes a program for graduate students and physics faculty, presented by members of the WMU physics faculty and visitors from other institutions on topics related to their research specialties. Graduate students are also expected to attend public lectures sponsored by the Department of Physics.

Doctor of Philosophy in Physics

Advisor: Paul Pancella
Room 2219 Everett Tower

The Department of Physics offers a program leading to the Doctor of Philosophy in Physics. The main objective of this program is to prepare students for careers in teaching and/or research in colleges and universities, or for research in industry. Research is an integral part of the program and may be performed in either experimental physics or theoretical physics. The area of specialization may be astrophysics, atomic physics, condensed matter physics, or nuclear physics. Special facilities available for research include a 6 MV model EN tandem Van De Graaff accelerator. The graduate advisor in the Department of Physics will counsel the student until a research advisor is selected. Afterwards the student will plan his/her doctoral program in consultation with the graduate advisor and his/her research advisor.

Admission Requirements
Students entering this program are expected to have acquired a bachelor's degree in physics or at least an equivalent amount of experience and training (including training in mathematics at the appropriate level). Prospective students are required to take the Graduate Record Examination General Test. Preference in admission and determination of financial support is given to students who have taken and earned a good score on the GRE physics subject test. The departmental graduate advisor will provide assistance to students seeking admission to this program and will recommend ways of eliminating any deficiencies in course work.

Program Requirements
The Doctor of Philosophy in Physics includes a minimum of 60 hours of graduate credit. These credits are composed of course work, supervised reading, seminars, and research. The research will be performed under the guidance of the student's research advisor and must culminate in a dissertation suitable for publication. The required, minimum 60 hours of graduate credit shall consist of the following:

1. A core of basic courses listed below (27 credit hours).

2. Physics Dissertation (15 credit hours)
PHYS 7300 - Doctoral Dissertation Credits: 15 hours

3. Additional courses chosen from:
    a. Research courses
PHYS 6800 - Research in Atomic Physics Credits: 1-6 hours

PHYS 6810 - Research in Nuclear Physics Credits: 1-6 hours or
PHYS 6820 - Research in Condensed Matter Physics Credits: 1-6 hours

b. Courses mutually agreed upon by the student and the graduate advisor or the research advisor.

4. An overall grade point average of 3.00 in all graduate work.

Basic Core Courses:
PHYS 6100 - Research Seminar Credits: 1 hour
PHYS 6150 - Mathematical Physics Credits: 3 hours
PHYS 6200 - Computational Physics Credits: 2 hours
PHYS 6220 - Quantum Mechanics I Credits: 3 hours
PHYS 6230 - Quantum Mechanics II Credits: 3 hours
PHYS 6240 - Statistical Mechanics Credits: 3 hours
PHYS 6300 - Classical Mechanics Credits: 3 hours
PHYS 6620 - Electricity and Magnetism I Credits: 3 hours
PHYS 6630 - Electricity and Magnetism II Credits: 3 hours

And one (1) of the following:
PHYS 6700 - Atomic Physics Credits: 3 hours
PHYS 6710 - Nuclear Physics Credits: 3 hours
PHYS 6720 - Condensed Matter Physics Credits: 3 hours

Additional Requirements
The research tool requirements must be met by demonstrated competency in two of the following: (1) Demonstrate knowledge of basic numerical procedures frequently used in computational physics. This may be satisfied by earning a grade of 3.0 or higher in PHYS 6200 or equivalent; (2) Demonstrate knowledge of differential equations at the level of MATH 5740. Students can satisfy this requirement by earning a grade of 3.0 or higher in PHYS 6150; (3) Demonstrate knowledge of physics research in either (a) equipment and laboratory practices or (b) advanced computational techniques, with satisfactory performance in PHYS 6800, or 6810, or 6820.

The courses PHYS 6100, PHYS 6150, PHYS 6200, PHYS 6220, PHYS 6300, and PHYS 6620 normally are taken during the student's first year. In order to continue in the Ph.D. program, a student must attain a grade point average of 3.00 or higher in PHYS 6150, PHYS 6220, PHYS 6300, and PHYS 6620.

The second year courses normally include PHYS 6630, PHYS 6230, PHYS 6240, and possible one specialty course. Upon completion of PHYS 6150, PHYS 6220, PHYS 6230, PHYS 6240, PHYS 6300, PHYS 6620, and PHYS 6630 the student will take the Comprehensive Examination. This examination covers the content of these courses and basic undergraduate material, and consists of both written and oral portions. The student is expected to take this examination upon completion of the fourth semester. The examination may be repeated once.

Upon successful completion of the Comprehensive Examination, the student will, upon counsel with the graduate advisor and with the consent of the faculty member involved, select a research advisor. The advisor must be a member of the graduate faculty. With agreement from the research advisor, the student will select a dissertation committee subject to the approval of the graduate dean. This committee will consist of the research advisor and three additional graduate faculty members, at least one of whom is from outside the Department of Physics.

Within six months of passing the Comprehensive Examination the student is expected to present a dissertation proposal to the Department of Physics members of his/her dissertation committee. A student is given a grade of satisfactory or unsatisfactory on this Dissertation Proposal Presentation (DPP). Upon receiving a satisfactory grade, the student shall continue into their dissertation research. Otherwise, the DPP may be repeated only once, and this must be done within three months' time of the first presentation.

At the completion of the dissertation, the student will present an Oral Dissertation Defense. During this defense, the dissertation committee will ask questions concerning the dissertation and concerning the student's research area. Members of the committee should be provided with copies of the dissertation at least one month in advance of the defense. The dissertation and the student's knowledge of the subject areas must be deemed acceptable by the

committee. The requirements and procedures for submission of a dissertation to the Graduate College can be obtained from that college.

Graduate students are required to attend the Physics Colloquium, which constitutes a program for graduate students and physics faculty, presented by members of the WMU physics faculty and visitors from other institutions on topics related to their research specialties. Graduate students are also expected to attend public lectures sponsored by the Department of Physics.

Political Science

John A. Clark, Chair
Main Office: 3308 Friedmann Hall
Telephone: (269) 387-5680
Fax: (269) 387-5354

J. Kevin Corder
Suhashni Datta-Sandhu
Susan Hoffmann
Mark Hurwitz
Denise Keele
Priscilla Lambert
Mahendra Lawoti
Jacinda Swanson
Yuan-Kang Wang
Peter Wielhouwer

Master of Arts in Political Science

Director of Graduate Studies: Priscilla Lambert
Room 3410, Friedmann Hall

The Master of Arts in Political Science offers the student a variety of options to prepare him/her for various career goals: (1) positions public service and quasi-public agencies; (2) further professional training in political science and related professions, such as law; (3) teaching positions in community colleges; and (4) general positions in the business world.

Admission Requirements
In addition to meeting the general admission requirements of the Graduate College, a student must have completed at least 24 hours of work in the social sciences or other relevant fields and have achieved a 3.0 grade point average. Graduate Record Exam scores for the quantitative, verbal, and analytical parts are required for all students. Additional materials to be submitted include a brief essay about the student's academic and professional objectives, a curriculum vita, and three recommendations (on WMU Graduate Reference Forms). The department may require the student to make up deficiencies in undergraduate preparation.

Program Requirements
The program is 30 credit hours and allows students to choose between the thesis and non-thesis options. Requirements in the two options may not be interchanged. Students should meet with the Director of Graduate Studies before registering for classes their first semester.

Thesis Option
1. Thirty hours of graduate credit in Political Science.
With the written approval of the Graduate Director, a student may substitute up to two courses with a maximum of eight hours of cognate work appropriate to his/her program.

2. Each student is required to take the following core courses (12 hours) or their equivalent:
PSCI 6010 - Foundations of American Politics Credits: 3 hours
PSCI 6410 - Foundations of Comparative Politics Credits: 3 hours
PSCI 6940 - Teaching Political Science Credits: 1 hour
PSCI 6960 - Research and Professional Skills Credits: 2 hours

And one of:
PSCI 6620 - Political Philosophy I Credits: 3 hours
PSCI 6630 - Political Philosophy II Credits: 3 hours
PSCI 6650 - Modern Democratic Theory Credits: 3 hours

3. Master's Thesis
PSCI 7000 - Master's Thesis Credits: 6 hours

4. Pass an oral examination on the thesis and on the student's political science program.

Non-Thesis Option
1. Thirty hours of graduate credit in Political Science.
With written approval of the Graduate Director, a student may substitute up to two courses with a maximum of eight hours of cognate work appropriate to his/her program.

2. Each student is required to take the following core courses (12 hours) or their equivalent:
PSCI 6010 - Foundations of American Politics Credits: 3 hours
PSCI 6410 - Foundations of Comparative Politics Credits: 3 hours
PSCI 6940 - Teaching Political Science Credits: 1 hour
PSCI 6960 - Research and Professional Skills Credits: 2 hours

And one of:
PSCI 6620 - Political Philosophy I Credits: 3 hours
PSCI 6630 - Political Philosophy II Credits: 3 hours or
PSCI 6650 - Modern Democratic Theory Credits: 3 hours

3. Pass written and oral field examinations on the student's political science program.

Master of International Development Administration

MIDA Director: Paul Clements,
Room 3354, Friedmann Hall

The Master of International Development Administration (MIDA) program is designed to prepare candidates for careers in international development and to meet the specialized needs of public administrators and program and project managers from the developing countries. The course of instruction has as its focus the managerial and political dimensions of development and democratization and includes a strong multidisciplinary component that draws from political science, public administration, economics, geography, social work, communication, and evaluation, research and measurement.

The program is designed for two types of students: Public administrators and officials from developing countries who require additional training to meet new or increased responsibilities; and graduates from both developing and industrial countries, including the United States, who are interested in careers in international development, such as in government, non-governmental organizations (NGOs), or international organizations.

The MIDA program includes development administration theory and practice, methods and strategies of development management, and the honing of skills. MIDA students are guided in their work by established and experienced members of the academic community, all of whom are research scholars, and the majority of whom have lived and worked in the developing countries. Usually faculty have had experience with national and/or international organizations, or have worked with a variety of governments on development projects.

Admission Requirements
Applicants must satisfy the requirements for admission to the Graduate College in order to be considered for admission to this program. An applicant must possess an undergraduate degree, preferably in the social sciences with either a concentration in political science or public administration, and should have some exposure to economics and/or statistics. Applicants with actual public administration experience may, under some circumstances, substitute professional attainments for undergraduate preparation.

A grade point average of 3.0 in all undergraduate work is normally a requirement for admission to the MIDA program; however, where grading scales are computed differently, equivalencies will be determined. International

students must obtain from and submit their applications to the WMU Office of International Student Services. American students should apply through the WMU Graduate Admissions Office. The Department of Political Science also requires three recommendations (using WMU Graduate Reference Forms), a one page statement of the student's interest in the MIDA program, a curriculum vitae or resume, and any other supporting data that can assist the Department's Admissions Committee, which screens and judges all applications.

All students must demonstrate English proficiency (i.e., the ability to speak, read, and write in the English language) before entering the MIDA program. A Career English Program is available for students whose English language capabilities are limited.

Students are encouraged to submit all required application materials by June 15 for the fall semester; by September 15 for the spring semester; and by February 15 for the summer session.

Program Requirements

The Master of International Development Administration is a professional degree that requires 42 semester hours of graduate courses. Up to six hours may be waived for those with extensive administration experience. To earn the MIDA degree, students must maintain a minimum "B" average (GPA 3.0 on a 4.0 scale) in all courses. Students normally complete the program in 20 months. The basic requirements are as follows:

1. Prerequisites (non-credit)
Only for those candidates without the requested academic or practical background: PSCI 2400, Introduction to Comparative Politics; ECON 2010 or 2020, Principles of Economics, or other courses as determined by the MIDA Director.

2. Required Core Courses (15 hours)
PADM 6270 - Human Resources Administration Credits: 3 hours
PSCI 5320 - Administration in Developing Countries Credits: 3 hours
PSCI 6330 – Comparative National Development Strategies Credits: 3 hours
PSCI 6360 - Seminar: Development Methods and Skills Credits: 3 hours
PSCI 6380 - Seminar: Planning Development Programs Credits: 3 hours

3. Development Analysis (6 hours)
Select two of the following:
ECON 5880 – Economic Development Credits: 3 hours
(ECON 6880 may be substituted)
PSCI 5490 – Gender and Development Credits: 3 hours
PSCI 6311 – Monitoring and Evaluation of International Development Projects Credits: 3 hours
PSCI 6440 – Economic and Social Development Theory Credits: 3 hours

4. Tools or Skills (6 hours)
Select two:
ECON 6010 – Basic Economic Analysis Credits: 3 hours
GEOG 5010 – Introduction to GIS Credits: 4 hours
PADM 6060 – Analytical Methods Credits: 3 hours
PADM 6070 – Quantitative Data Analysis Credits: 3 hours
PADM 6080 – Organization Theory and Behavior Credits: 3 hours
PADM 6120 - Principles of Public Budgeting Credits: 3 hours
PADM 6290 – Supervisory Skills for Administrators Credits: 3 hours
PADM 6840 – Public Financial Resource Management Credits: 3 hours
PSCI 6910 – Political Analysis I Credits: 3 hours
PSCI 6920 – Political Analysis II Credits: 3 hours

5. International and Comparative Studies (3 hours)
Select one:
PSCI 6400 – Seminar in Comparative Politics Credits: 3 hours
PSCI 6410 – Foundations of Comparative Politics Credits: 3 hours

PSCI 6500 – Developing Countries Seminar Credits: 3 hours

6. Concentrations.
Three courses within one of the six areas of concentration (9 hours). Under special circumstances a mix of courses appropriate to the needs of the student may be selected with the approval of the MIDA Director.

a. Leadership:
COM 6730 - Conflict Management Credits: 3 hours
COM 6830 – Leadership and Communication in Organizations Credits: 3 hours
EDLD 6020 - Educational Leadership, Systems and Change Credits: 3 hours
PADM 6290 – Supervisory Skills for Administrators Credits: 3 hours
PADM 6471 - Leadership in Nonprofit Organizations Credits: 3 hours
PSCI 6490 - Rural Development Credits: 3 hours
SWRK 6300 – Social Change and Community Analysis Credits: 3 hours
SWRK 6430 – Leadership and Management in Human Services Credits: 3 hours
Note: SWRK courses require approval from the School of Social Work prior to registration.

b. Health Services Management:
PADM 5990 - Topics in Public Administration Credits: 1 to 4 hours
PADM 6515 - Administration and Delivery of Health Services Credits: 3 hours
PADM 6532 - Health Care Policy and Law Credits: 3 hours
PADM 6535 - Health Care Economics and Finance I Credits: 3 hours
PADM 6555 - Managerial Epidemiology Credits: 3 hours
PADM 6870 - Legislative Relations for Public Administrators Credits: 3 hours

c. Public Policy Analysis:
ECON 6010 - Basic Economic Analysis Credits: 3 hours
GEOG 5440 - Studies in Economic Geography Credits: 2 to 3 hours
GEOG 5570 - Environmental Impact Assessment Credits: 3 hours
PADM 6780 - Program Evaluation Credits: 3 hours
PSCI 6460 - Comparative Public Policy Credits: 3 hours
PSCI 6490 - Rural Development Credits: 3 hours
PSCI 6910 - Political Analysis I Credits: 3 hours
SOC 5600 - Corporate and Governmental Crime Credits: 3 hours

d. Urban and Rural Studies:
GEOG 5010 – Introduction to GIS Credits: 4 hours
GEOG 5440 - Studies in Economic Geography Credits: 2-3 hours
GEOG 5530 - Water Resources Management Credits: 3 hours
GEOG 5560 - Studies in Urban and Regional Planning Credits: 3 hours
GEOG 5570 – Environmental Impacts Credits: 3 hours
PSCI 6490 - Rural Development Credits: 3 hours

e. Monitoring and Evaluation
EMR 5400 – Fundamentals of Evaluation, Measurement and Research Credits: 3 hours
EMR 6420 – Evaluation I: Theory, Methods, and Program Evaluation Credits: 3 hours
or
PADM 6780 – Program Evaluation Credits: 3 hours
EMR 6430 – Evaluation II: Evaluating Products, Personnel and Policy Credits: 3 hours
EMR 6450 – Data Analytics I: Designed Studies Credits: 3 hours
EMR 6500 – Survey Research Credits: 3 hours
EMR 6520 – Evaluation Practicum Credits: 3 hours
EVAL 6000 – Foundations of Evaluation Credits: 3 hours
GEOG 5570 – Environmental Impacts Credits: 3 hours
PSCI 6311 – Monitoring and Evaluation of International Development Projects Credits: 3 hours

f. Planning and Nonprofit Management

EMR 5400 - Fundamentals of Evaluation, Measurement, and Research Credits: 3 hours
PADM 5830 - Grant Writing for Nonprofit Organizations Credits: 3 hours
PADM 5870 - Fund Raising for Nonprofit Organizations Credits: 3 hours
PADM 6290 - Supervisory Skills for Administrators Credits: 3 hours
PADM 6461 - Evaluation of Nonprofit Organizations Credits: 3 hours
PADM 6471 - Leadership in Nonprofit Organizations Credits: 3 hours
PADM 6481 - Planning in Nonprofit Organizations Credits: 3 hours
SWRK 6670 – Program Planning Credits: 3 hours
Note: SWRK courses require School of Social Work approval prior to registration.

7. Approved Elective (3 hours):
With the approval of the MIDA Director choose one course from the above.

Doctor of Philosophy in Political Science

Director of Graduate Studies: Priscilla Lambert
Room 3410, Friedmann Hall

The Doctor of Philosophy in Political Science is designed to prepare students for careers in teaching and both academic and applied research. The Ph.D. program provides basic training in American politics, comparative politics, political theory and philosophy, and research methods. Students may enter with either a B.A. degree or an M.A. degree.

Admission Requirements
Students must satisfy the general admission requirements of the Graduate College. Students applying to the program with a bachelor's degree must have completed at least 24 hours of work in the social sciences or other relevant fields and have achieved a 3.25 grade point average in their last two years of course work. Students applying with a master's degree must have achieved a grade point average of at least 3.25 in their graduate work. Graduate Record Exam scores for the quantitative, verbal and analytical parts are required for all students. Each applicant should arrange to have three recommendations sent (using WMU Graduate Reference Forms) and submit a curriculum vitae, a brief essay concerning their academic and professional objectives, and two writing samples that indicate their ability in professional writing. All application materials for admission should be submitted by the following dates: July 1 for Fall Semester, November 1 for Spring Semester, March 1 for Summer I Session, and May 1 for Summer II Session.

Program Requirements
Students should meet with the Director of Graduate Studies before registering for classes their first semester.

The doctorate requires a minimum of 90 credit hours of work beyond the baccalaureate. After successfully completing 30 hours in the program and passing the M.A. Field Exam or the Ph.D. Comprehensive Exams, students will be eligible for a Master of Arts degree. Up to 30 credit hours may be applicable from a master’s degree.

The basic requirements for the doctorate are as follows:
1. Prerequisites (non credit). Students must have completed the following course or its equivalent with a grade of “B” or better:
PSCI 3950 - Quantitative Methods for Political Scientists

2. Required core courses.
Each student is required to take the following core courses (27 hours) or their equivalent:

A. Foundations:
PSCI 6010 - Foundations of American Politics Credits: 3 hours
PSCI 6410 - Foundations of Comparative Politics Credits: 3 hours
PSCI 6640 - The Nature of Political Inquiry and Analysis Credits: 3 hours
PSCI 6910 - Political Analysis I Credits: 3 hours

PSCI 6920 - Political Analysis II Credits: 3 hours
PSCI 6940 - Teaching Political Science Credits: 1 hr.
PSCI 6950 - Teaching Excellence Credits: 2 hours
PSCI 6960 - Research and Professional Skills Credits: 2 hours
PSCI 6970 - Proposal Workshop Credits: 1 hr.

And Two of the Following:
PSCI 6620 - Political Philosophy I Credits: 3 hours
PSCI 6630 - Political Philosophy II Credits: 3 hours
PSCI 6650 - Modern Democratic Theory Credits: 3 hours

3. Minimum Field Course Requirements.
Students must take three courses in their exam fields and two in their non-exam field, as follows:

Exam Fields:
American Politics: PSCI 6010 and two American electives
Comparative Theory: PSCI 6410 and two Comparative electives
Political Theory: Three of the following: PSCI 6620, PSCI 6630, PSCI 6650, or any theory elective

Non-Exam Fields:
American Politics: PSCI 6010 and one American elective
Comparative Politics: PSCI 6410 and one Comparative elective
Political Theory: Two of the following: PSCI 6620, PSCI 6630 or PSCI 6650

Students must further take enough courses to prepare them for their doctoral research and attain required hours in anticipation of dissertation credit. The precise number of elective courses should be worked out with the Graduate Director. In addition to elective courses in Political Science, students may include courses from cognate fields (with approval of the Graduate Director) and independent study.

4. Annual Reviews.
In order to continue in the program, students must receive a positive annual review.

5. Research tools/methods.
All Ph.D. students must demonstrate proficiency in at least two research skills and/or methodology appropriate to their field of specialization, as determined in consultation with their advisor, field faculty, and the Graduate Director. As such, all students must successfully complete PSCI 6640, 6910, and 6920 or their equivalents, and are urged to do so as early in their careers as possible. In addition, all students must attain competence in a second elective research skill/methodological tool sufficient to meaningfully assist their research activities. Elective research tools may include advanced statistical methodology, foreign language skills (other than English), survey research, econometrics, Geographic Information Systems (GIS), or other alternative skills as approved by the Graduate Director and/or Graduate Committee. Students should check the specific research tools/methodology policy with the Graduate Director.

6. Comprehensive examination.
In order to continue in the program after the completion of their required core course work, students must take and pass written and oral examinations covering two of the following three fields: American Politics, Comparative Politics, and Political Theory.

7. Dissertation.
As the capstone to the Ph.D. degree program, the dissertation is awarded 15-21 credit hours. The dissertation is an original and substantive research requirement and will be developed and completed under the supervision of a dissertation advisor.

Psychology

Stephanie Peterson, Chair
Main Office: 3740 Wood Hall
Telephone: (269) 387-4479
Fax: (269) 387-4550

Lisa E. Baker
Amy Damashek
Anthony DeFulio
Alyce M. Dickinson
Jessica Frieder
R. Wayne Fuqua
Scott T. Gaynor
Bradley E. Huitema
Douglas Johnson
Richard W. Malott
Heather McGee
Amy Naugle
Cynthia Pietras
Alan Poling
Denise Ross
Ron Van Houten
Lester W. Wright, Jr.

Graduate Training Committee Chairperson:
Scott Gaynor,
3530 Wood Hall

Kaycie Ohmart, Graduate Program Administrative Assistant
3700 Wood Hall

The Department of Psychology has a strong scientific and behavior analytic orientation, which influences all the Department's graduate degree programs.

Graduate students receive a personal appointment to an academic advisor and two faculty sponsors to facilitate the full development of the student's academic interests within the research programs of the department and the University. The program is arranged to encourage active participation in the daily conduct of the department's academic program and research activities.

Graduate students in all programs of the department are expected to abide by the following principles: "Ethical Principles of Psychologists" and the "Standards for Providers of Psychological Services," published by the American Psychological Association; "Guidelines for Human Subjects Research at WMU" and "Humane Care and Use of Animals Policy and Procedures," published by Western Michigan University; and "Guide for the Care and Use of Laboratory Animals," published by the National Research Council. The Department expects students to be familiar with the content of these documents and to abide by the principles contained therein as they apply to academic endeavors, professional service, and research activities conducted in partial fulfillment of degree requirements as well as professional service and scholarly or research activities which are not directly awarded academic credit but are completed as part of program requirements of the Department of Psychology at Western Michigan University.

The members of the department faculty conduct an annual review of student progress and recommend to the Graduate College advancement from program applicant to candidacy for a degree within each program. This evaluation includes a review of academic performance, professional responsibility, and adherence to the accepted ethical and professional guidelines of the discipline and the profession as published by the American Psychological

Association or, when relevant, the Behavior Analysis Certification Board (BACB). Failure to meet these standards and the ethical principles of the American Psychological Association, the BACB or regulations from the State of Michigan or failure to abide by “The WMU Student Code” and “Student Rights and Responsibilities” as delineated in the Graduate Catalog may lead to disciplinary action and/or dismissal from the program. Disciplinary reviews, including a due process hearing for the student, are conducted by the Department's Graduate Training Committee, and a summary of the findings and a recommendation for action are sent to the Dean of the Graduate College.

The Department of Psychology offers financial assistance through Department assistantships and program fellowships. Additional information concerning financial awards and program requirements may be obtained from the Department office.

Master of Arts in Psychology

Admission Requirements

Applications are reviewed in terms of five sources of information, although performance related to any one source is not sufficient to assure or deny admission. Applicants are assumed to have substantial training in psychology at the undergraduate level with a minimum of 18 hours of credit in psychology, including introductory statistics. Applicants may be required to complete additional courses following matriculation in order to satisfy these basic requirements.

The application procedure includes submission of:
1. A transcript showing the completion of an undergraduate major or minor in psychology
2. Graduate Record Examination (verbal and quantitative tests)
3. Three letters of recommendation
4. A professional statement describing academic interests and professional goals
5. The Department of Psychology admission application

Students are admitted only during the fall semester each year. The deadline for receipt of all application materials is December 15.

It is the policy and commitment of the Department of Psychology not to discriminate on the basis of race, sex, age, color, national origin, height, weight, marital status, sexual orientation, religion, physical or mental disability, or Veteran status in its educational programs, student programs, admissions, or employment policies. The Department of Psychology complies with all requirements of Title VII of the Civil Rights Act of 1964, Title IX of the 1972 Amendments, Executive Order 11246 as amended, Section 504 or the Rehabilitation Act of 1973, Americans with Disabilities Act of 1990, the Civil Rights Act of 1991, and all other pertinent state and federal regulations.

Program Requirements

Behavior Analysis
Director: Cynthia Pietras
Behavior Analysis Program Director
3762 Wood Hall

This program prepares students for doctoral study or for work in applied settings.

The Behavior Analysis program requires 36 credit hours, including:
1. Principles of Learning and Motivation (3 hours)
2. Theoretical Issues in Behavior Analysis (3 hours)
3. Professional Issues (3 hours)
4. Behavioral Approached to Individual and Systems Management (3 hours)
5. Cognates (0-3 hours)
6. Research Methods (6 hours)
7. Master's Thesis or Master's Project (6 hours)

8. Behavior Analysis (6-9 hours)
9. Professional Experience (0-9 hours)

Note: Limited license advisory:
Behavior analysis students wishing to qualify for a Limited License to Practice as a psychologist in the State of Michigan are advised that the General Rules of the Board of Psychology of Michigan's Department of Licensing and Regulation lists the following requirements for a Rule 7 limited license at the M.A. Level:
1. one course in assessment
2. one course in treatment
3. a 500-hour practicum under supervision of a licensed psychologist
4. 2,000 hours of supervised, post-M.A. experience.

Behavior analysis students may need to take two or more extra courses to meet these additional requirements. Students interested in qualifying for a limited license are encouraged to consult the appropriate licensing law and the Board of Psychology for further details.

Industrial/Organizational Behavior Management
Directors: Heather McGee; Douglas Johnson
Industrial/Organizational Behavior Management Program
3758 Wood Hall; 3742 Wood Hall respectively

The master's program in Industrial/Organizational Behavior Management prepares students for human resource management positions in business, government, and human service organizations or for entry into a Ph.D. program for advanced study.

This program requires a minimum of 36 credit hours, including:

1. Industrial/Organizational Behavior Management (12 hours)
PSY 6430 - Personnel Selection and Placement Credits: 3 hours
PSY 6440 - Personnel Training and Development Credits: 3 hours
PSY 6450 - Psychology of Work Credits: 3 hours
PSY 6510 - Behavioral Systems Analysis Credits: 3 hours

2. Behavior Analysis (3 hours)
One of the following:
PSY 6100 - Conditioning and Learning Credits: 3 hours
PSY 6166 - Conditioning Principles and their Organizational Applications Credits: 3 hours

3. Professional Ethics (3 hours)
PSY 6050 - Professional and Research Ethics Credits: 3 hours

4. Research Methods (6 hours)
PSY 6080 - Research Methods in Applied Behavior Analysis Credits: 3 hours
PSY 6340 - Experimental Design and Analysis I Credits: 3 hours

5. Research and Practice (6 hours)
Select either the Thesis Option or Practicum Option:

Thesis Option:
PSY 7000 - Master's Thesis Credits: 1 to 6 hours, Credits: 6 hours needed

Practicum Option (Select two of the following):
PSY 5470 - Practicum: Organizational Performance Improvement Credits: 3 hours
PSY 6520 - Systems Analysis Practicum Credits: 3 hours

6. Electives (6 hours)

Clinical Psychology
No terminal Master of Arts is offered in Clinical Psychology. A master's degree in this area is offered only as part of the Doctor of Philosophy. See the description of the doctoral program in clinical psychology for more information.

Doctor of Philosophy in Psychology

The Doctor of Philosophy in Psychology is designed to provide intensive training in Behavior Analysis, Industrial/Organizational Behavior Management or Clinical Psychology. The Doctor of Philosophy is a research degree for persons intending to assume leadership roles in teaching, research, and service in a variety of professional and academic institutions.

In addition to meeting the entrance requirements of the Graduate College, applicants are expected to show evidence of interest in and aptitude for conducting research.

Graduate students receive a personal appointment of a doctoral committee chairperson and two faculty sponsors to facilitate the full development of the student's academic interests within the research programs of the department and the University. The program is arranged to encourage active participation in the daily conduct of the department's academic program and research activities.

Program Requirements
The credit hour requirements of the Ph.D. program are arranged to prepare students for teaching and research. The concentration areas and credit hours of the individual doctoral programs are listed below and include:

Behavior Analysis (78 hours.)
Director: Cindy Pietras
3762 Wood Hall

1. Applied Behavior Analysis (6 hours)
2. Experimental Analysis of Behavior (6 hours)
3. Conceptual and Theoretical Issues (6 hours)
4. Research Methods and Statistics (6 hours)
5. Professional Issues (3 hours)
6. Elective Courses (15 to 27 hours)
7. Master’s Thesis or Project (6 hours)
8. Professional Experience (6 to 18 hours)
9. Doctoral Dissertation (12 hours)

Courses count toward the Ph.D. program in Behavior Analysis only after the student has completed all courses in an M.A. program, including the M.A. thesis or M.A. project requirement.

Industrial/Organizational Behavior Management (78 hours)
Directors: Heather McGee; Douglas Johnson
3758 Wood Hall; 3742 Wood Hall respectively

1. Industrial/Organizational Behavior Management Core (21 hours)
2. Behavior Analysis Core (9 hours)
3. Research and Ethics (12 hours)
4. Master's Thesis (6 hours)
5. Doctoral Dissertation (12 hours)
6. Elective Courses (18 hours)

Courses count toward the Ph.D. program in Industrial/Organizational Behavior Management only after the student has completed all courses in an M.A. program, including the M.A. thesis.

Clinical Psychology (95 hours.)

Co-directors of Clinical Training: Scott Gaynor, Amy Naugle
3530 and 3524 Wood Hall, respectively

1. General and Clinical Foundations (30 hours)
2. Methodology (6 hours)
3. Clinical Core (15 hours)
4. Research (18 hours)
5. Clinical Practicum and Internship (20-31 hours)
6. Research Tool (6 hours)

The Clinical Psychology Program is designed to provide broad and general scientist-practitioner training that is decidedly cognitive-behavioral and contemporary behavior analytic in orientation. The research activity of the doctoral student is continuous and is encouraged through participation in the apprentice research program, completion of a six credit hour Master's Thesis and completion of a twelve credit hour dissertation. The student is required to complete core methods courses, but also to demonstrate additional competence via a research tool sequence in an area such as advanced methods/statistics, grant writing, or design and evaluation of clinical trials. The doctoral candidate will also show evidence of an ability to interpret, integrate, and discuss research data by the satisfactory completion of a comprehensive examination. The clinical training of the student is accomplished via coursework in relevant foundational and core clinical domains as well as through extensive supervised practical experience. These practical experiences occur in our campus clinic, local external agencies, and culminate in a clinical internship.

The program is arranged to provide formal evaluations of the student as he/she progresses from baccalaureate apprentice to doctoral applicant with the completion of the Master's Thesis and to doctoral degree candidate with completion of the comprehensive examination. The award of the Ph.D. degree is made following the satisfactory completion of the required hours of approved course credit, demonstration of competence research, satisfactory completion of comprehensive examination, the oral defense of the dissertation before the student's doctoral committee at a public presentation, and successful completion of a year-long supervised clinical internship.

The Department of Psychology offers financial assistance through Department assistantships and program fellowships. Additional information concerning financial awards and program requirements may be obtained from the department office.

Public Affairs and Administration

Udaya Wagle, Director
Main Office: 220E Walwood Hall
Telephone: (269) 387-8930
Fax: (269) 387-8935

Barbara Liggett
Matthew Mingus
Robert Peters
Daniela Schroeter

Master of Public Administration

Advisors:
Dr. Matthew Mingus, Dr. Robert Peters, and Dr. Udaya Wagle.

The mission of the MPA program is to improve the quality of public service by developing professionals and leaders equipped with knowledge and skills in theories, methodology, and innovative practice in the interdisciplinary field of public administration. Our graduates lead and manage a diverse range of government, nonprofit, and health care organizations and make positive impacts on the lives of citizens locally, nationally, and globally.

The MPA Program is modeled around the following core values of public administration.

1. Plurality of ideas and perspectives
2. Common good, social justice, and democratic governance
3. Ethical and competent leadership and decision-making
4. Efficient, effective, equitable, and transparent practice of public service.

Reflecting the multi-disciplinary nature of the field, the MPA draws upon the diverse talents of academic departments throughout the University in addition to the faculty of the School of Public Affairs and Administration. The MPA is offered on the main campus with some concentrations offered at other University locations.

Admission Requirements

Applicants to the MPA program must meet the Graduate College requirements of an undergraduate degree from an accredited college or university with an overall grade point average of at least 3.0 on a 4.0 scale. Students with an undergraduate GPA of at least 2.5 who also demonstrate a record of relevant work experience and professional advancement may be considered for conditional admission.

The following must be submitted in order to be considered for admission:

1. The completed University online application for Graduate Admission, with paid application fee
2. An official transcript from each undergraduate and graduate institution attended (except WMU)
3. A written statement of how the MPA will help you meet your personal and career goals
4. A current resume including all academic, professional, and volunteer experience
5. Three letters of recommendation (at least one academic and at least one professional)

Admission decisions are based on undergraduate grade point average, any prior graduate course work, work experience, letters of recommendation, and statement of career goals. MPA admissions decisions are made on an ongoing basis and applicants are usually notified within three weeks of submitting all required application materials. To ensure admissions by the start of the semester or summer session, all admissions materials must be received by August 1 for fall admissions, December 10 for spring admissions, and April 10 for summer admissions, though earlier applications allow for better course availability.

Note: International applicants must follow the process and timing specified by WMU's international admissions. The School of Public Affairs and Administration (SPPA) usually makes a decision within one week of receiving materials from that office.

MPA Program Requirements (39 hours)

The MPA curriculum provides a foundation in the principles of administration, addresses the practical responsibilities of managers, and reflects on the task of administrative leadership. The 39 credit hour program includes three components: the Core Program, an Area of Concentration, and the Project Paper Seminar. Pre-career students (status determined upon admission based on evidence of significant administrative or managerial experience in a relevant sector) also complete a three credit hour (300 contact hour) professional field experience. The curriculum assumes that candidates already have basic computer literacy and a working knowledge of the American political processes at local, state, and national levels.

1. Core Program (18 hours)

The Core Program includes course work in the theoretical foundation of public management, critical areas of administrative responsibility, and methods of administrative and policy analysis. Students complete each of the following six courses:

- PADM 6000 – Historical and Legal Foundations of American Public Administration Credits: 3 hours
- PADM 6060 – Analytical Methods Credits: 3 hours
- PADM 6070 – Quantitative Data Analysis Credits: 3 hours
- PADM 6080 – Organization Theory and Behavior Credits: 3 hours
- PADM 6180 – The Political and Economic Environment of Public Administration Credits: 3 hours

2. Area of Concentration (18 credit hours)

In addition to the MPA core, the project paper requirement, and if required, the professional field experience, each MPA student must complete one of the 18-credit hour areas of concentration. Options for the area of concentration are health care administration, human resources administration, nonprofit leadership and administration, and public management. In the event that a student's needs are not adequately addressed by one of the four areas of concentration, they may, with the MPA advisor's assistance and approval, design a concentration from the wide array of courses that are offered by the School of Public Affairs and Administration or by other departments in the University. Note: Course offerings from other departments may change each year, and so other courses may occasionally be substituted with MPA advisor permission in advance. Student's may, with the MPA advisor's assistance and approval, include non-PADM courses. Students selecting courses from outside SPPA must have the approval of the other department and meet prerequisites if any prerequisites are indicated for the course.

3. PADM 6800 - Project Paper Seminar (3 credit hours)

Project Paper Seminar is the capstone course of the MPA program and is required for each student regardless of their area of concentration. It provides an opportunity for students to integrate theory and practice in a significant problem solving exercise. The product of the seminar is a professional analysis of a management problem or an applied scholarly inquiry in the field of public administration. MPA candidates who have completed at least 30 hours of MPA course work, including all MPA core requirements, are eligible to enroll in the Project Paper Seminar. MPA advisors encourage students to enroll in this seminar as their last course, if possible.

4. Professional Field Experience/Internship (3 credit hours)

For pre-career students (status determined upon admission based on evidence of significant administrative or managerial experience in a relevant sector), the fourth major component of the MPA is a planned professional field experience, or internship, equivalent to three credit hours (minimum 300 contact hours). The goal of the internship is to provide candidates with work experience which will afford realistic exposure to their world of professional administration and to the organizational and bureaucratic environment in which the dynamics of an agency are developed.

Concentrations

Public Management Concentration

The 18 credit hour Public Management Concentration (PM) is composed of three required courses and three elective courses. MPA candidates completing the concentration in addition to all other degree requirements will have "Public Management" noted on their official transcript.

Required Concentration Courses (9 credit hours)
PADM 6120 - Principles of Public Budgeting Credits: 3 hours
PADM 6130 - Local Government Administration Credits: 3 hours
OR
PADM 6860 - State Agency Administration Credits: 3 hours
(if both PADM 6130 and PADM 6860 are taken, one counts toward the elective requirement for this concentration)
PADM 6270 - Human Resources Administration Credits: 3 hours
OR
PADM 6290 - Supervisory Skills for Administrators Credits: 3 hours
(either PADM 6270 or PADM 6290 must be taken, but not both)

Electives Concentration Courses (9 credit hours)
PADM 6110 - Administrative Law and Governmental Regulation Credits: 3 hours
PADM 6140 - Managing Community Growth and Development Credits: 3 hours
PADM 6150 - State and Local Government Finance Credits: 3 hours
PADM 6170 - Intergovernmental and Interorganizational Relations Credits: 3 hours
PADM 6400 - Nonprofit Governance Credits: 3 hours
PADM 6870 - Legislative Relations for Public Administrators Credits: 3 hours
GEOG 5010 - Introduction to Geographic Information Systems Credits: 4 hours
GEOG 5570 - Environmental Impact Assessment Credits: 3 hours
GEOG 5690 - Geodatabase Design and GIS Workflows Credits: 4 hours
GEOG 6090 - Studies in Regional Geography Credits: 2 to 3 hours
GEOG 6690 - Advanced GIS Seminar Credits: 3 hours
SOC 6600 - Theoretical Issues in Criminology Credits: 3 hours
SOC 6640 - Studies in Criminology: Variable Topics Credits: 3 hours

Nonprofit Leadership and Administration Concentration

The 18 credit hour Nonprofit Leadership and Administration (NLA) Concentration is composed of three required course and three elective courses. MPA candidates completing the concentration in addition to all other degree requirements will have "Nonprofit Leadership and Administration" noted on their official transcript.

Required Concentration Courses (9 credit hours)
PADM 6400 – Nonprofit Governance Credits: 3 hours
PADM 6431 – Budget Development and Accounting for Nonprofit Organizations Credits: 3 hours
PADM 6441 – Human Resources for Nonprofit Organizations Credits: 3 hours

Electives Concentration Courses (9 credit hours)
PADM 5830 - Grant Writing for Nonprofit Organizations Credits: 3 hours
PADM 5840 - Promoting Nonprofit Organizations Credits: 3 hours
PADM 5870 - Fund Raising for Nonprofit Organizations Credits: 3 hours
PADM 6461 – Evaluation of Nonprofit Organizations Credits: 3 hours
PADM 6471 – Leadership in Nonprofit Organizations Credits: 3 hours
PADM 6481 – Planning in Nonprofit Organizations Credits: 3 hours

Human Resources Administration Concentration

The 18 credit hour Human Resources Administration (HRA) Concentration is composed of three required courses and three elective courses. MPA candidates completing the concentration in addition to all other degree

requirements will have "Human Resources Administration" noted on their official transcript, beginning with those who graduate in the fall of 2001.

Required Concentration Courses (9 credit hours)
PADM 6110 – Administrative Law and Governmental Regulation Credits: 3 hours
PADM 6120 – Principles of Public Budgeting Credits: 3 hours
PADM 6270 – Human Resources Administration Credits: 3 hours
OR
PADM 6290 – Supervisory Skills for Administrators Credits: 3 hours
(if both PADM 6270 and PADM 6290 are taken, one counts toward the elective requirement for this concentration)

Electives Concentration Courses (9 credit hours)
PADM 6270 – Human Resources Administration Credits: 3 hours
PADM 6290 – Supervisory Skills for Administrators Credits: 3 hours
CECP 6450 - Practicum in Human Resources Development Credits: 3 hours
EDLD 6630 – Personnel Administration Credits: 3 hours
MGMT 6170 – Managing Human Resources and Behavior Credits: 3 hours
PSY 6430 – Personnel Selection and Placement Credits: 3 hours
PSY 6440 – Personnel Training and Development Credits: 3 hours
PSY 6510 – Behavioral Systems Analysis Credits: 3 hours

Health Care Administration Concentration

The 18 credit hour Health Care Administration (HCA) concentration composed of four required courses and two elective courses. MPA candidates completing the concentration in addition to all the other degree requirements will have "Health Care Administration" noted on their official transcript.

Required Concentration Courses (12 credit hours)
PADM 6515 - Administration and Delivery of Health Services Credits: 3 hours
PADM 6532 - Health Care Policy and Law Credits: 3 hours
PADM 6535 - Health Care Economics and Finance I Credits: 3 hours
PADM 6270 - Human Resources Administration Credits: 3 hours
OR
PADM 6290 - Supervisory Skills for Administrators Credits: 3 hours
(either PADM 6270 or PADM 6290 must be taken, but not both)

Elective Concentration Courses (6 credit hours)
PADM 6545 - Health Care Economics and Finance II Credits: 3 hours
PADM 6555 - Managerial Epidemiology Credits: 3 hours
MKTG 6610 - Health Care Marketing Credits: 3 hours
PADM 6780 - Program Evaluation Credits: 3 hours
OR
PADM 6481 - Planning in Nonprofit Organizations Credits: 3 hours
(either PADM 6780 or PADM 6481 may count toward the concentration, but not both)

Joint Doctor of Laws and Master of Public Administration

Advisor: Dr. Robert Peters
Room 220E
Walwood Hall

The joint J.D./M.P.A. degree program provides advanced practitioner-oriented education in legal, administrative, and policy processes that are essential to the effective management of legal practices as well as health care, nonprofit, and public organizations. The combination of skills and theory is also ideal for pre-career and in-career students who aspire to careers in court administration, criminal justice, regulation, drafting legislation, lobbying, senior management, and politics. Law courses are offered at the Western Michigan University Thomas M. Cooley

Law School. M.P.A. courses are offered on the main campus in Kalamazoo and the University's regional locations in Battle Creek and Lansing.

Admission Requirements

Applicants must meet the minimum requirements for each program. The Western Michigan University Thomas M. Cooley Law School J.D. program and the Western Michigan University MPA program maintain independent admission requirements, processes, and committees. Consequently, admission to one degree program does not guarantee admission to the second program.

Students are urged to consult an advisor before pursuing the joint J.D./MPA degree.

Program Requirements

Joint degree students must fulfill the requirements of both degrees. Western Michigan University Thomas M. Cooley Law School students may transfer a maximum of six credit hours and waive three credit hours of PADM 6110 (Administrative Law and Governmental Regulation) applied to one of the four M.P.A. concentrations (health care administration, human resources administration, nonprofit leadership and administration, and public management) with an advisor's approval. The combination of transfers and waiver may reduce the M.P.A. program requirement for in-career students from 39 to 30 credit hours.

M.P.A. students may transfer to the Western Michigan University Thomas M. Cooley Law School J.D. program a maximum of six credit hours of M.P.A. courses and three credit hours of PADM 6000: Historical and Legal Foundation of American Public Administration or other appropriate M.P.A. core course.

Doctor of Philosophy in Public Administration

Advisor: Dr. Matthew Mingus
Room 220E
Walwood Hall

The mission of the Doctor of Philosophy in Public Administration program is to give students a deep and extensive knowledge of the history, theory, practice, and future of the field. The curriculum encourages broad intellectual inquiry with a scholarly perspective and seeks to prepare students for careers in teaching, research, administration, and consulting. The doctoral program is designed for those who have experience in a supervisory or administrative position with a federal, state, or local government or nonprofit agency and those wishing to teach public administration in a college or university setting. The program is structured to provide decision makers, researchers, and future professors with a more sophisticated understanding of the governing process.

The curriculum incorporates a diversity of viewpoints, gathered from classical and contemporary readings in the discipline, examination of the contributions of its seminal thinkers, analysis of the institutions and processes of governance, exploration of emerging theories and trends, and an investigation of the challenges of leadership and public management in a democracy. Public administration is multidisciplinary and so during the coursework phase each student will be able to develop substantive and/or methodological knowledge in one or more of the many related disciplines, including sociology, economics, educational leadership, interdisciplinary health sciences, political science, statistics, and communication.

Integral to the program is the development and refinement of the skills to conduct both qualitative and quantitative research, practice in statistical and quantitative analysis, and experience with applied skills of leadership and ethical decision-making.

Students should graduate with the ability to perform independent research on theoretical public administration concerns and substantive issues, to analyze a wider range of alternative policies, and to weigh competing choices in the decision-making process.

Admission Requirements

Applicants can obtain doctoral student information by going to the School of Public Affairs and Administration website (http://www.wmich.edu/spaa) for complete details concerning admission to the Ph.D. program. The following criteria will be used to make admissions decisions. In order to be competitive, applicants must:

1. Have an undergraduate degree with at least a 3.00 grade point average.
2. Have a master's degree in public administration or a related academic discipline with at least a 3.25 grade point average in all graduate coursework.
3. Have at least four years of supervisory or administrative experience, preferably in public serving organizations.
4. Provide three letters of recommendation, at least one of which should be from a person acquainted with the applicant's professional work and at least one of which should be familiar with the applicant's graduate-level academic work (use the WMU Graduate Reference Form).
5. Submit the completed University online application for Graduate Admission, with paid application fee.
6. Responses to the required essay questions.
7. Submit a complete and up-to-date professional resume.
8. Provide Graduate record examination (GRE) scores for the quantitative, verbal, and analytical written parts of the examination.

All application materials should be submitted by Feb 1 to ensure consideration for the Fall semester. Late applications may be considered on a space available basis while earlier applications may be required for a student to meet university financial aid deadlines. An interview with members of the School's faculty may be requested as part of the admissions process.

Program Requirements

Students should meet with the Doctoral Director after being accepted into the program and before the end of their first term of coursework to develop an initial program of study. Forty-eight semester hours of credit are required beyond the master's degree, including the statistics requirements (3 hours), the public administration core (15 hours), the methods requirement (9 hours), the elective requirement (6 hours), the dissertation seminar (3 hours), and the minimum hours of dissertations credit (12 hours). This may be reduced to 45 semester hours if the statistics requirement is deemed to have been met at the time of admission to the program. Successful performance on the comprehensive examination and the submission of scholarly article is required of all students in order to continue in the program. Finally, successful annual reviews are required of students at all stages in the program.

Statistics Requirement

Each student must take PADM 6070: Quantitative Data Analysis or an equivalent statistics course. Students should be aware that many of the methods courses will require this background and so they are encouraged to meet this requirement early in the program. If this has been done in the five years prior to program admission, this requirement may be waived at the student's request and the credit hours required for the doctoral degree may be reduced by 3 credit hours.

- PADM 6070 – Quantitative Data Analysis Credits: 3 hours

Public Administration Core (15 hours)

- PADM 6610 - Intellectual History of Public Administration Credits: 3 hours
- PADM 6630 - Leading the Public Organization Credits: 3 hours
- PADM 6650 - Public Policy, Theory, and Research Credits: 3 hours
- PADM 6660 - Contemporary Issues in Public Management Credits: 3 hours
- PADM 6840 - Management of Public Financial Resources Credits: 3 hours

Comprehensive Examination

After completing the public administration core, students will be eligible to take the written comprehensive examination. The exam will be offered once each year and will be prepared and graded by a group of faculty who teach the public administration core courses. Outside readers may be used to assess the comprehensive examinations as well. Results will be honors, satisfactory, or unsatisfactory. Students with a score of unsatisfactory will have one opportunity to retake the comprehensive examination. A score of unsatisfactory on the retake will result in program dismissal.

Methods Requirement (9 hours)

Each student will be required to successfully complete three methodology courses beyond the general statistics requirement. This will include courses that have components covering research design (most likely PADM 6640), qualitative research (most likely PSCI 6900 - Qualitative Methods, EMR 6480 - Qualitative Research Methods, or SOC 6820 - Qualitative Research), and quantitative research (most likely PADM 6920). The methodology requirement will be tailored to meet the needs of individual doctoral students and must be approved by the Doctoral Director in the student's Program of Study.

Electives (6 hours)

Electives may come from within the public administration curriculum or may be in the disciplinary field(s) related to the student's methodological core and/or proposed dissertation. These must be 6000-level or higher graduate courses and must be in the student's approved Program of Study before the student takes the electives.

Article Submission Requirement

Each student shall produce a substantive scholarly article and submit it to a recognized peer-reviewed journal. The purpose of this requirement is to increase the understanding of students of the peer-review process and their role in contributing to the development of academic knowledge. Another purpose is to allow each student to put his/her developing research and methodological tools to this real world test. "Substantive" is intended to exclude commentaries, book reviews, and general expository pieces.

A core public administration faculty member will need to determine that this article submission is of high quality and meets departmental standards. This article submission requirement will usually be met after meeting the comprehensive examination requirement and must be met within four years of starting course work in the doctoral program. While obviously desirable for the student and the program, the article does not need to be published for this requirement to be fulfilled.

Doctoral Seminar (3 hours)

Each student must take PADM 6970: Dissertation Seminar, which will focus specifically on developing a dissertation proposal and adapting their developing methodological expertise to the field of public administration.

- PADM 6970 – Doctoral Seminar Credits: 3 hours

Dissertation (12 hours)

- PADM 7300 - Doctoral Dissertation Credits: minimum 12 hours

Each student must complete at least 12 credit hours of doctoral dissertation which focuses on scholarly investigation of a limited topic, issue, or problem of choice. This will be an independent research conducted by the candidate under the guidance of a faculty committee. The dissertation committee chair (first reader) plays a key role in guiding

the candidate's proposal development, research, and writing. The candidate must defend the proposal before the dissertation committee to formally begin research and defend the dissertation publicly once the research and writing is complete.

Residency

Each student is required to enroll each Fall and Spring semester until completion of the degree and must also be enrolled in the term in which he/she will graduate. After all course work is completed, students are required to maintain continuous enrollment in PADM 7300: Doctoral Dissertation, in all Fall and Spring semesters until graduation. During the first six semesters of PADM 7300 students must register for at least two dissertation hours.

Annual Student Reviews

Each student must submit the Doctoral Student Annual Activity report (DSAAR) each year by March 15 and will receive an annual review letter from the faculty by May 15. In order to continue in the program, each student must receive a positive review. This may be "positive with conditions" in which case the student will have one academic year to meet the stated conditions. A 3.0 grade point average is required to graduate and is therefore also an ongoing condition for positive annual reviews.

Science Education, Mallinson Institute for

, Director
Main Office: 3245 Wood Hall
Telephone: (269) 387-5398
Fax: (269) 387-4998

Marcia Fetters, Teaching, Learning, and Educational Studies
Megan Grunert Kowalske, Chemistry
Charles Henderson, Physics
Heather Petcovic. Geosciences
David W. Rudge, Biological Sciences
David Schuster, Physics
Brandy Skjold, Mallinson Institute for Science Education
Joseph Stoltman, Geography

Graduate programs in science education are offered through The Mallinson Institute for Science Education, an interdisciplinary unit in the College of Arts and Sciences.

Master of Arts in Science Education

Advisor: William W. Cobern,
Room 3245, Wood Hall

The Master of Arts in Science Education is designed for school science teachers who wish to expand their teaching skills, as well as for students beginning their work toward a Doctor of Philosophy in Science Education.

Admission Requirements

The minimum admission requirements to this degree program are: (1) an undergraduate major in science or science education and (2) teacher certification. Applicants not meeting these requirements may be admitted provisionally. Please contact the Director. However, satisfactory completion of necessary undergraduate science and/or education courses will be needed before enrollment in the required graduate courses. These requirements are in addition to the general admission requirements of the Graduate College.

Applicants should also write a one-two page statement on their education background, teaching experience, and reasons for seeking a master’s degree in science education.

Program Requirements

The program consists of a minimum of 30 semester hours of graduate work. Each student's program is planned in consultation with the advisor and consists of the following:

1. Twelve semester hours of graduate level science. By advisor permission, a student may substitute up to six hours of science at the 3000/4000 levels.

2. Twelve semester hours of science education, to include:
SCI 6145 - Introduction to History and Philosophy of Science for Teachers Credits: 3 hours
SCI 6150 - Science Education: Historical and Philosophical Foundations Credits: 3 hours
SCI 6160 - Science Education: Models of Learning and Teaching Credits: 3 hours
SCI 6260 - Curriculum Studies in Science Education Credits: 3 hours

3. Six semester hours of thesis (SCI 7000 - Master's Thesis Credits: 6 hours)
OR
Six semester hours of project (SCI 7100 - Independent Research Credits: 2 to 6 hours)
OR
Six semester hours of science content with permission of advisor.

Thesis or Project
The thesis or project is completed under the direction of a major advisor and a thesis or project committee. The major advisor and committee members are chosen by the Institute director in consultation with the student and the Institute faculty. It is anticipated that teachers working in the program will choose to do a project involving their classrooms. Students planning on further graduate study may pursue a thesis; the thesis might be preliminary work on a doctoral dissertation. The thesis or project topics must be approved by the committee. The committees and topics are subject to the approval of the deans of the College of Arts and Sciences and the Graduate College.

Doctor of Philosophy in Science Education

Advisor: William W. Cobern,
Room 3245, Wood Hall

The Doctor of Philosophy in Science Education is designed for students who wish to obtain a strong background in science and to pursue research in science education.

Admission Requirements
The minimum admission requirements to this degree program are a master's degree or concurrent enrollment in a master's degree program in science, science education, or education with a science concentration.

Program Requirements
The program consists of 48 semester hours of graduate work beyond coursework counted toward a master's degree. Each student's program is planned in consultation with the advisor and consists of the following:

1. Science Education (21 semester hours) consisting of:
SCI 6140 - Science: Historical and Philosophical Perspectives Credits: 3 hours
SCI 6150 - Science Education: Historical and Philosophical Foundations Credits: 3 hours
SCI 6160 - Science Education: Models of Learning and Teaching Credits: 3 hours
SCI 6170 - Science Education: Early Research I Credits: 3 hours
SCI 6171 - Science Education: Early Research II Credits: 3 hours
SCI 6200 - Topics in Science Education Credits: 1 to 3 hours
(Credits: 3 hours needed)
SCI 6260 - Curriculum Studies in Science Education Credits: 3 hours

2. Research Tools and Design (12 semester hours)
To include a semester each in quantitative and qualitative research methods.

3. Dissertation (15 semester hours)
SCI 7300 - Doctoral Dissertation Credits: 15 hours

Additional Program Requirements
Candidates also must have completed a master's degree in science, science education, or education with a science concentration. They may have completed the master's degree prior to beginning the doctoral program or while simultaneously enrolled in the doctoral program.

Advancement to candidacy for the doctoral degree requires the following:

1. Take the following courses: SCI 6140, 6150, 6160, 6260, and earning an overall GPA with respect to these courses alone of 3.5 or better; each course can be taken one additional time to improve GPA, if needed. Take SCI 6200 each fall for the first three years in the program.

2. Early research requirement culminating in a paper to be:

- Presented at a MISE symposium *and* at a MISE approved conference;
- Reviewed and approved by MISE faculty before or after presentations (can be resubmitted one time with revisions if needed), and
- Submitted to an approved journal for publication review.

3. Comprehensive Review of the Literature

- Upon successful completion of 1 and 2, student prepares a comprehensive literature review in an area pertaining to the student's eventual dissertation research. Supervised and approved by a three-member MISE faculty committee.
- Present Comprehensive Review of the Literature at a MISE symposium.
- Reviewed and approved by MISE faculty before or after presentation (can be resubmitted one time with revisions if needed).

4. Dissertation Proposal

- Upon successful completion of 3, the student's dissertation committee is officially formed.
- Student develops dissertation research proposal, which must be approved by the student's dissertation committee;
- Student presents dissertation research proposal at a MISE symposium. MISE faculty to provide comments and suggest revisions;
- Proposal must be approved by the student's dissertation committee (can be re-submitted one time with revisions).

The research and dissertation are completed under the direction of a major advisor and a Doctoral Advisory Committee. The major advisor and dissertation committee members are chosen by the Institute director in consultation with the student and Institute faculty. The research problem is formulated by the student and must be approved by the Committee. Dissertation Committees and topics are subject to the approval of the deans of the College of Arts and Sciences and the Graduate College.

To be admitted to candidacy for the doctoral degree the student must have satisfactorily completed the above requirements, and a teaching experience in addition to the other candidacy requirements of doctoral programs in the Graduate College.

Doctor of Philosophy in Science Education: Biological Sciences
Advisors:
William W. Cobern, MISE Director
Room 3245, Wood Hall

Silvia Rossbach, Graduate Advisor, Biological Sciences
Room 3923, Wood Hall

The Doctor of Philosophy in Science Education: Biological Sciences is designed for students who wish to obtain a strong background in the biological sciences and to pursue research in biological science education. The program is offered cooperatively by the Mallinson Institute for Science Education and the Department of Biological Sciences.

Admission Requirements
The minimum admission requirements to this degree program are a master's degree in biological sciences or concurrent enrollment in a master's degree program in biological sciences.

Program Requirements
The program consists of 48 semester hours of graduate work beyond course work counted toward a master's degree. Each student's program is planned in consultation with the advisor and consists of the following:

1. Science Education (21 Semester Hours) consisting of:
SCI 6140 - Science: Historical and Philosophical Perspectives Credits: 3 hours
SCI 6150 - Science Education: Historical and Philosophical Foundations Credits: 3 hours
SCI 6160 - Science Education: Models of Learning and Teaching Credits: 3 hours
SCI 6170 - Science Education: Early Research I Credits: 3 hours
SCI 6171 - Science Education: Early Research II Credits: 3 hours
SCI 6180 - Teaching and Learning in the College Science Classroom Credits: 3 hours
SCI 6200 - Topics in Science Education Credits: 1 to 3 hours
(Credits: 3 hours needed)

2. Research Tools and Design (12 semester hours):
To include a semester each in quantitative and qualitative research methods.

3. Dissertation (15 semester hours)
SCI 7300 - Doctoral Dissertation Credits: 1 to 15 hours
(Credits: 15 hours needed)

Additional Program Requirements
Candidates must have completed a master's degree in biological sciences comprised of a program of study comparable to the master's level program at the WMU Department of Biological Sciences which includes a biological sciences research component. Candidates may have completed the master's degree prior to beginning the doctoral program or while concurrently enrolled in the doctoral program. Students entering the doctoral program with a master's degree from another institution will have their transcripts evaluated by the Department of Biological Sciences for deficiencies. All deficiencies must be remediated as a condition for candidacy. The student must submit and defend, in an oral examination administered by the proposed Dissertation Committee, his/her dissertation research proposal. The proposal will be in the format of an NIH or NSF grant application. Student will be given a grade of pass or fail by the Dissertation Committee. In the event of failure, the proposal may be revised and re-defended once, and this must be done within one calendar year of failure.

Advancement to candidacy for the doctoral degree requires the following:

1. Take the following courses: SCI 6140, 6150, 6160, 6180, and earning an overall GPA with respect to these courses alone of 3.5 or better; each course can be taken one additional time to improve GPA, if needed. Take SCI 6200 each fall for the first three years in the program.

2. Early research requirement culminating in a paper to be:
- Presented at a MISE symposium and at a MISE approved conference;
- Reviewed and approved by MISE faculty before or after presentations (can be re-submitted one time with revisions if needed), and
- Submitted to an approved journal for publication review.

3. Comprehensive Review of the Literature
- Upon successful completion of 1 and 2, student prepares a comprehensive literature review in an area pertaining to the student's eventual dissertation research. Supervised and approved by a 3-member MISE faculty committee.
- Present Comprehensive Review of the Literature at a MISE symposium.
- Reviewed and approved by MISE faculty before or after presentation (can be resubmitted on time with revisions if needed).

4. Dissertation Proposal
- Upon successful completion of 3, the student's dissertation committee is officially formed.
- Student develops dissertation research proposal, which must be approved by the student's dissertation committee;

- Student presents dissertation research proposal at a MISE symposium. MISE faculty to provide comments and suggest revisions;
- Proposal must be approved by the student's dissertation committee (can be resubmitted one time with revisions).

The research and dissertation are completed under the direction of a major advisor and a Doctoral Advisory Committee. The major advisor and dissertation committee members are chosen by the Institute director in consultation with the student, Institute faculty and Biological Sciences Department faculty. The research problem is formulated by the student and must be approved by the committee. Dissertation committees and topics are subject to the approval of the deans of the College of Arts and Sciences and The Graduate College.

To be admitted to candidacy for the doctoral degree the student must have satisfactorily completed the above requirements, and a teaching experience in addition to the other candidacy requirements of doctoral programs in The Graduate College.

Doctor of Philosophy in Science Education: Chemistry
Advisors:
William W. Cobern, MISE Director
Room 3245, Wood Hall

Donald Schreiber, Graduate Advisor, Chemistry
Room 3142, Wood Hall

The Doctor of Philosophy in Science Education: Chemistry is designed for students who wish to obtain a strong background in the chemistry and to pursue research in chemistry education. The program is offered cooperatively by the Mallinson Institute for Science Education and the Department of Chemistry.

Admission Requirements
The minimum admission requirements to this degree program are a master's degree in chemistry or concurrent enrollment in a master's degree program in chemistry.

Program Requirements
The program consists of 48 semester hours of graduate work beyond course work counted toward a master's degree. Each student's program is planned in consultation with the advisor and consists of the following:

1. Science Education (21 Semester Hours):
SCI 6140 - Science: Historical and Philosophical Perspectives Credits: 3 hours
SCI 6150 - Science Education: Historical and Philosophical Foundations Credits: 3 hours
SCI 6160 - Science Education: Models of Learning and Teaching Credits: 3 hours
SCI 6170 - Science Education: Early Research I Credits: 3 hours
SCI 6171 - Science Education: Early Research II Credits: 3 hours
SCI 6180 - Teaching and Learning in the College Science Classroom Credits: 3 hours
SCI 6200 - Topics in Science Education Credits: 1 to 3 hours
(Credits: 3 hours needed)

2. Research Tools and Design (12 semester hours)
To include a semester each in quantitative and qualitative research methods.

3. Dissertation (15 semester hours)
SCI 7300 - Doctoral Dissertation Credits: 1 to 15 hours
(Credits: 15 hours needed)

Additional Program Requirements

All candidates for the Doctor of Philosophy in Science Education: Chemistry must have completed a master's degree in chemistry. They may have completed the master's degree prior to beginning the doctoral program or while concurrently enrolled in the doctoral program.

The master's program must include 20 hours in the field of chemistry, including the master's thesis. The chemistry hours may total more than 20 depending on the student's background. The remaining hours up to at least 30 hours may be in a related field or fields.

The course sequence will include (if not previously elected):
CHEM 5070 - Ethical Chemical Practice Credits: 3 hours
CHEM 5200 - Instrumental Methods in Chemistry Credits: 3 hours

One of the following:
CHEM 5150 - Inorganic Chemistry Credits: 3 hours
CHEM 5500 - Biochemistry I Credits: 3 hours
CHEM 5510 - Biochemistry I Laboratory Credits: 2 hours

Two 6000-level courses:
Two 6000-level courses from different divisions (Analytical, Biochemistry, Inorganic, Organic, or Physical), including one course in the division of master's thesis.

At least 3 credit hours of:
CHEM 6900 - Special Investigations in Chemistry Credits: 1 to 6 hours,
(Credits: 3 hours needed)

Master's Thesis:
CHEM 7000 - Master's Thesis Credits: 1 to 6 hours
(Credits: 6 hours needed)

5000-level courses
The requirement for any of the above 5000-level courses may be waived if the student has taken a corresponding course as an undergraduate.

All students are required to present a literature seminar to the department and will be evaluated by faculty members. All students are required to complete the literature seminar requirement no later than the end of the third semester in the program.

The student is required to pass a final oral defense of his or her master's thesis administered by the student's graduate committee. The student is also required, as part of the graduate training in chemistry, to attend departmental seminars, colloquia, and symposia, and to participate in research within the department.

Advancement to candidacy for the doctoral degree requires the following:

1. Take the following courses: SCI 6140, 6150, 6160, 6180, and earning an overall GPA with respect to these courses alone of 3.5 or better; each course can be taken one additional time to improve GPA, if needed. Take SCI 6200 each fall for the first three years in the program.

2. Early research requirement culminating in a paper to be:
- Presented at a MISE symposium and at a MISE approved conference;
- Reviewed and approved by MISE faculty before or after presentations (can be re-submitted one time with revisions if needed), and
- Submitted to an approved journal for publication review.

3. Comprehensive Review of the Literature

- Upon successful completion of 1 and 2, student prepares a comprehensive literature review in an area pertaining to the student's eventual dissertation research. Supervised and approved by a 3-member MISE faculty committee.
- Present Comprehensive Review of the Literature at a MISE symposium.
- Reviewed and approved by MISE faculty before or after presentation (can be resubmitted on time with revisions if needed).

4. Dissertation Proposal
- Upon successful completion of 3, the student's dissertation committee is officially formed.
- Student develops dissertation research proposal, which must be approved by the student's dissertation committee;
- Student presents dissertation research proposal at a MISE symposium. MISE faculty to provide comments and suggest revisions;
- Proposal must be approved by the student's dissertation committee (can be resubmitted one time with revisions).

The research and dissertation are completed under the direction of a major advisor and a Doctoral Advisory Committee. The major advisor and dissertation committee members are chosen by the Institute director in consultation with the student, Institute faculty and Chemistry Department faculty. The research problem is formulated by the student and must be approved by the committee. Dissertation committees and topics are subject to the approval of the deans of the College of Arts and Sciences and The Graduate College.

To be admitted to candidacy for the doctoral degree the student must have satisfactorily completed the above requirements, and a teaching experience in addition to the other candidacy requirements of doctoral programs in The Graduate College.

Doctor of Philosophy in Science Education: Physical Geography
Advisors:
William W. Cobern, MISE Director
Room 3245, Wood Hall

Kathleen Baker, Graduate Advisor, Geography
Room 3238, Wood Hall

The Doctor of Philosophy in Science Education: Physical Geography is designed for students who wish to obtain a strong background in the earth sciences and to pursue research in earth science education. The program is offered cooperatively by the Mallinson Institute for Science Education and the Departments of Geography and Geological Sciences.

Admission Requirements
The minimum admission requirements to this degree program are a master's degree or concurrent enrollment in a master's degree program with a research focus on physical geography.

Program Requirements
The program consists of 48 semester hours of graduate work beyond course work counted toward a master's degree. Each student's program is planned in consultation with the advisor and consists of the following:

1. Science Education (21 Semester Hours) consisting of:
SCI 6140 - Science: Historical and Philosophical Perspectives Credits: 3 hours
SCI 6150 - Science Education: Historical and Philosophical Foundations Credits: 3 hours
SCI 6160 - Science Education: Models of Learning and Teaching Credits: 3 hours
SCI 6170 - Science Education: Early Research I Credits: 3 hours
SCI 6171 - Science Education: Early Research II Credits: 3 hours
SCI 6180 - Teaching and Learning in the College Science Classroom Credits: 3 hours

SCI 6200 - Topics in Science Education Credits: 1 to 3 hours
(Credits: 3 hours needed)

2. Research Tools and Design (12 semester hours)
To include a semester each in quantitative and qualitative research methods.

3. Dissertation (15 semester hours)
SCI 7300 - Doctoral Dissertation Credits: 1 to 15 hours
(Credits: 15 hours needed)

Additional Program Requirements
All candidates for the Doctor of Philosophy in Science Education: Physical Geography (GEOG) must have completed a master's degree in geography with a research concentration on physical geography. They may have completed the master's degree prior to beginning the doctoral program or while concurrently enrolled in the doctoral program.
Proficiency at the master's degree in those aspects of physical geography, such as meteorology, natural resources, biogeography, environmental analysis, and geospatial technology, are expected of prospective doctoral students.

Advancement to candidacy for the doctoral degree requires the following:

1. Take the following courses: SCI 6140, 6150, 6160, 6180, and earning an overall GPA with respect to these courses alone of 3.5 or better; each course can be taken one additional time to improve GPA, if needed. Take SCI 6200 each fall for the first three years in the program.

2. Early research requirement culminating in a paper to be:
- Presented at a MISE symposium and at a MISE approved conference;
- Reviewed and approved by MISE faculty before or after presentations (can be re-submitted one time with revisions if needed), and
- Submitted to an approved journal for publication review.

3. Comprehensive Review of the Literature
- Upon successful completion of 1 and 2, student prepares a comprehensive literature review in an area pertaining to the student's eventual dissertation research. Supervised and approved by a 3-member MISE faculty committee.
- Present Comprehensive Review of the Literature at a MISE symposium.
- Reviewed and approved by MISE faculty before or after presentation (can be resubmitted on time with revisions if needed).

4. Dissertation Proposal
- Upon successful completion of 3, the student's dissertation committee is officially formed.
- Student develops dissertation research proposal, which must be approved by the student's dissertation committee;
- Student presents dissertation research proposal at a MISE symposium. MISE faculty to provide comments and suggest revisions;
- Proposal must be approved by the student's dissertation committee (can be resubmitted one time with revisions).

The research and dissertation are completed under the direction of a major advisor and a Doctoral Advisory Committee. The major advisor and dissertation committee members are chosen by the Institute director in consultation with the student, Institute faculty and Geography Department faculty. The research problem is formulated by the student and must be approved by the committee. Dissertation committees and topics are subject to the approval of the deans of the College of Arts and Sciences and The Graduate College.

To be admitted to candidacy for the doctoral degree the student must have satisfactorily completed the above requirements, and a teaching experience in addition to the other candidacy requirements of doctoral programs in The Graduate College.

Doctor of Philosophy in Science Education: Geosciences
Advisors:
William W. Cobern, MISE Director
Room 3245, Wood Hall

Heather Petcovic, Graduate Advisor, Geosciences
Room 1137, Rood Hall

The Doctor of Philosophy in Science Education: Geosciences is designed for students who wish to obtain a strong background in the geosciences and to pursue research in geosciences education. The program is offered cooperatively by the Mallinson Institute for Science Education and the Departments of Geography and Geosciences.

Admission Requirements
The minimum admission requirements to this degree program are a master's degree or concurrent enrollment in a master's degree program in the earth sciences.

Program Requirements
The program consists of 48 semester hours of graduate work beyond course work counted toward a master's degree. Each student's program is planned in consultation with the advisor and consists of the following:

1. Science Education (21 Semester Hours):
SCI 6140 - Science: Historical and Philosophical Perspectives Credits: 3 hours
SCI 6150 - Science Education: Historical and Philosophical Foundations Credits: 3 hours
SCI 6160 - Science Education: Models of Learning and Teaching Credits: 3 hours
SCI 6170 - Science Education: Early Research I Credits: 3 hours
SCI 6171 - Science Education: Early Research II Credits: 3 hours
SCI 6180 - Teaching and Learning in the College Science Classroom Credits: 3 hours
SCI 6200 - Topics in Science Education Credits: 1 to 3 hours
(Credits: 3 hours needed)

2. Research Tools and Design (12 semester hours)
To include a semester each in quantitative and qualitative research methods.

3. Dissertation (15 semester hours)
SCI 7300 - Doctoral Dissertation Credits: 1 to 15 hours
(Credits: 15 hours needed)

Additional Program Requirements
All candidates for the Doctor of Philosophy in Science Education: Geosciences must have completed a master's degree in the geosciences. They may have completed the master's degree prior to beginning the doctoral program or while concurrently enrolled in the doctoral program.

Students must achieve a grade of "BA" or better in three of four core graduate geology courses. One graduate course in each of the four areas (Hydrogeology, Geochemistry and Petrology, Geophysics and Tectonics, Stratigraphy and Sedimentary Geology) will be designated as a "core" course (see graduate advisor for details). In some cases, students may enter the program with a strong background in one or more of the core areas. Such students may be excused from enrolling in one or more core courses by achieving a grade of "B" or better on the final examination for the course(s). Students who do not achieve a "B" or better in a core area on their first attempt (or an overall average of "BA" or better for the three courses) will be given one additional opportunity to either pass each core course or the final examination with a grade sufficient to achieve an average of "BA" or better for the three courses.

Candidates must attend weekly Geosciences Department seminars. In the second and each subsequent year of candidacy, the student must give a 12-minute seminar presentation. The dissertation proposal presentation, if completed during the academic year, will fulfill this requirement in that year of study. The dissertation defense presentation, if completed during the academic year, will fulfill this requirement in the final year of study.

At least one first-authored paper must be accepted for publication in a peer-reviewed journal prior to graduation.

Students must give at least one scientific presentation in and approved (by student's doctoral committee) external venue prior to graduation.

Advancement to candidacy for the doctoral degree requires the following:

1. Take the following courses: SCI 6140, 6150, 6160, 6180, and earning an overall GPA with respect to these courses alone of 3.5 or better; each course can be taken one additional time to improve GPA, if needed. Take SCI 6200 each fall for the first three years in the program.

2. Early research requirement culminating in a paper to be:
- Presented at a MISE symposium and at a MISE approved conference;
- Reviewed and approved by MISE faculty before or after presentations (can be re-submitted one time with revisions if needed), and
- Submitted to an approved journal for publication review.

3. Comprehensive Review of the Literature
- Upon successful completion of 1 and 2, student prepares a comprehensive literature review in an area pertaining to the student's eventual dissertation research. Supervised and approved by a 3-member MISE faculty committee.
- Present Comprehensive Review of the Literature at a MISE symposium.
- Reviewed and approved by MISE faculty before or after presentation (can be resubmitted on time with revisions if needed).

4. Dissertation Proposal
- Upon successful completion of 3, the student's dissertation committee is officially formed.
- Student develops dissertation research proposal, which must be approved by the student's dissertation committee;
- Student presents dissertation research proposal at a MISE symposium. MISE faculty to provide comments and suggest revisions;
- Proposal must be approved by the student's dissertation committee (can be resubmitted one time with revisions).

The research and dissertation are completed under the direction of a major advisor and a Doctoral Advisory Committee. The major advisor and dissertation committee members are chosen by the Institute director in consultation with the student, Institute faculty and Geosciences Department faculty. The research problem is formulated by the student and must be approved by the committee. Dissertation committees and topics are subject to the approval of the deans of the College of Arts and Sciences and The Graduate College.

To be admitted to candidacy for the doctoral degree the student must have satisfactorily completed the above requirements, and a teaching experience in addition to the other candidacy requirements of doctoral programs in The Graduate College.

Doctor of Philosophy in Science Education: Physics
Advisors:
William W. Cobern, MISE Director
Room 3245, Wood Hall

Alvin Rosenthal, Graduate Advisor, Physics
Room 2217, Everett Tower

The Doctor of Philosophy in Science Education: Physics is designed for students who wish to obtain a strong background in physics and to pursue research in physics education. The program is offered cooperatively by the Mallinson Institute for Science Education and the Department of Physics.

Admission Requirements
The minimum admission requirements to this degree program are a master's degree in physics or concurrent enrollment in a master's degree program in physics.

Program Requirements
The program consists of 48 semester hours of graduate work beyond course work counted toward a master's degree. Each student's program is planned in consultation with the advisor and consists of the following:

1. Science Education (21 Semester Hours) consisting of:
SCI 6140 - Science: Historical and Philosophical Perspectives Credits: 3 hours
SCI 6150 - Science Education: Historical and Philosophical Foundations Credits: 3 hours
SCI 6160 - Science Education: Models of Learning and Teaching Credits: 3 hours
SCI 6170 - Science Education: Early Research I Credits: 3 hours
SCI 6180 - Teaching and Learning in the College Science Classroom Credits: 3 hours

And 6 hours chosen from:
SCI 6170 - Science Education: Early Research I Credits: 3 hours
(3 hours taken for a second time)
SCI 6180 - Teaching and Learning in the College Science Classroom Credits: 3 hours
(3 hours taken for a second time)
SCI 6260 - Curriculum Studies in Science Education Credits: 3 hours

2. Research Tools and Design (12 semester hours)
To include a semester each in quantitative and qualitative research methods.

3. Dissertation (15 semester hours)
SCI 7300 - Doctoral Dissertation Credits: 1 to 15 hours
(Credits: 15 hours needed)

Additional Program Requirements
Candidates must have completed a master's degree in physics. They may have completed the master's degree in physics prior to beginning the doctoral program or while concurrently enrolled in the doctoral program.

Advancement to candidacy for the doctoral degree requires the following:

1. Take the following courses: SCI 6140, 6150, 6160, 6180, and earning an overall GPA with respect to these courses alone of 3.5 or better; each course can be taken one additional time to improve GPA, if needed. Take SCI 6200 each fall for the first three years in the program.

2. Early research requirement culminating in a paper to be:
- Presented at a MISE symposium and at a MISE approved conference;
- Reviewed and approved by MISE faculty before or after presentations (can be re-submitted one time with revisions if needed), and
- Submitted to an approved journal for publication review.

3. Comprehensive Review of the Literature
- Upon successful completion of 1 and 2, student prepares a comprehensive literature review in an area pertaining to the student's eventual dissertation research. Supervised and approved by a 3-member MISE faculty committee.

- Present Comprehensive Review of the Literature at a MISE symposium.
- Reviewed and approved by MISE faculty before or after presentation (can be resubmitted on time with revisions if needed).

4. Dissertation Proposal

- Upon successful completion of 3, the student's dissertation committee is officially formed.
- Student develops dissertation research proposal, which must be approved by the student's dissertation committee;
- Student presents dissertation research proposal at a MISE symposium. MISE faculty to provide comments and suggest revisions;
- Proposal must be approved by the student's dissertation committee (can be resubmitted one time with revisions).

The research and dissertation are completed under the direction of a major advisor and a Doctoral Advisory Committee. The major advisor and dissertation committee members are chosen by the Institute director in consultation with the student, Institute and physics education faculty at the Physics Department. The research problem is formulated by the student and must be approved by the committee. Dissertation committees and topics are subject to the approval of the deans of the College of Arts and Sciences and The Graduate College.

To be admitted to candidacy for the doctoral degree the student must have satisfactorily completed the above requirements, and a teaching experience in addition to the other candidacy requirements of doctoral programs in The Graduate College.

Sociology

David Hartmann, Chair
Main Office: 3233 Sangren Hall
Telephone: (269) 387-5270
Fax: (269) 387-2882

Susan Carlson
Paul Ciccantell
Charles Crawford
Douglas V. Davidson
Whitney DeCamp
Elena Gapova
Barry Goetz
Chien-Juh Gu
Gregory Howard
Vyacheslav Karpov
Ronald Kramer
Ashlyn Kuersten
Elena Lisovskava
Vincent Lyon-Callo
Ann Miles
Angela Moe
Timothy Ready
Jesse Smith
Zoann Snyder

Master of Arts in Sociology

Advisor: Susan Carlson
Room 3219, Sangren Hall

The principal aim of the master's program in sociology is to develop an advanced understanding of the significant features and processes of human society through a focus on both research and teaching. The program prepares competent professionals for careers in research, education, government, and private enterprise. The department's core program of study stresses both theory and methods while elective credits and the theses project develop substantial knowledge in an area of interest.

A minimum of 36 hours beyond the bachelor's degree is required for the master's degree, including six hours of thesis credit. University policy holds that all requirements for the master's degree be completed within a six-year period. However, the Graduate College may allow additional time under extenuating circumstances.

Admission Requirements

1. Twenty-four semester hours in undergraduate social sciences, with at least 15 semester hours in sociology, including courses in theory and research methods (applicants without the requisite hours of undergraduate sociology courses may be permitted to make up deficiencies as a condition of matriculation).
2. Grade-point average of 3.0 or better in undergraduate sociology courses.
3. Applicants must supply a biographical statement, sample of original academic writing, GRE scores, official transcripts from all undergraduate and graduate schools attended, TOEFL scores (international applicants only), and three letters of recommendation from academic and/or professional sources to the Central Graduate Committee, Department of Sociology. Additional information and application forms may be obtained from the department.

Financial Assistance

A number of departmental, University, and governmental assistantships, fellowships, and associateships are available to qualified students. Educational opportunities and part-time employment may be available through the facilities of the Leonard C. Kercher Center for Social Research. Research through the Kercher Center includes

studies of education, mental illness, marital roles, race relations, group dynamics, deviant behavior, comparative institutions, and numerous other topics. Graduate students frequently participate in these studies.

Program Requirements:
1. Complete at least 36 graduate credit hours selected in consultation with the student's master's committee. At least 24 hours, including SOC 7000: Master's Thesis, must be in sociology.

Disciplinary Core:
SOC 6000 - Proseminar in Sociology Credits: 3 hours
SOC 6020 - Sociological Theory I Credits: 3 hours
SOC 6040 - Sociological Theory II Credits: 3 hours
SOC 6060 - Research Design and Data Collection I Credits: 3 hours
SOC 6070 - Logic and Analysis of Social Research I Credits: 3 hours
SOC 6210 - Logic and Analysis of Social Research II Credits: 3 hours
SOC 7000 - Master's Thesis Credits: 6 hours

Research Course:
Select one of the following courses:
SOC 6800 - Studies in Research Methodology: Variable Topics Credits: 3 hours
SOC 6810 - Advanced Multivariate Analysis Credits: 3 hours
SOC 6820 - Qualitative Methods Credits: 3 hours
SOC 6870 - Evaluation Research I Credits: 3 hours
SOC 6880 - Methods of Survey Research Credits: 3 hours

Elective Courses: (9 hours)

Master's Thesis:
Complete an original thesis, using approved methods for investigation of a sociological topic. Six hours of credit are earned for the thesis.

SOC 7000 – Master's Thesis Credits: 6 hours

2. Maintain a grade point average of 3.0 or better in all course work.

3. Pass an oral examination on the thesis.

Doctor of Philosophy in Sociology

Advisor: Susan Carlson
Room 3219, Sangren Hall

The principal aim of the doctoral program in sociology is to develop an advanced understanding of the significant features and processes of human society through a focus on both research and teaching. The program prepares informed scholars and competent professionals for careers in research, education, government, and private enterprise. The department's core program of study stresses both theory and methods while elective credits, cognate courses in another department, comprehensive examinations in two areas of concentration, and the dissertation project develop substantial knowledge in areas of specialization.

A minimum of 60 hours beyond the master's degree is required, including 15 hours of dissertation credit. University policy requires that all requirements for the doctoral degree be completed within a seven-year period. However, the Graduate College may allow additional time under extenuating circumstances.

Admission Requirements
1. Master's degree in sociology or a closely related field (applicants with degrees in fields other than sociology may be required to make up deficiencies as a condition of admission).

2. Grade point average of 3.25 in all graduate work. Grade point average of 3.0 or better in undergraduate sociology courses.
3. Applicants must supply a biographical statement, sample of original academic writing, GRE scores, official transcripts from all undergraduate and graduate schools attended, TOEFL scores (international applicants only), and three letters of recommendation from academic and/or professional sources to the Central Graduate Committee, Department of Sociology. Additional information and application forms may be obtained from the department.

Financial Assistance
A number of departmental, University, and governmental assistantships, fellowships, and associateships are available to qualified students. Educational opportunities and part-time employment may be available through the facilities of the Leonard C. Kercher Center for Social Research. Research through the Kercher Center includes studies of education, mental illness, marital roles, race relations, group dynamics, deviant behavior, comparative institutions, and numerous other topics. Graduate students frequently participate in these studies.

Additional information and application forms may be obtained from the department.

Program Requirements
1. Complete, beyond the master's degree, at least sixty hours of course work and dissertation credits, selected in consultation with the student's doctoral committee.

Prerequisites:
SOC 6000 - Proseminar in Sociology Credits: 3 hours
SOC 6060 - Research Design and Data Collection I Credits: 3 hours
SOC 6070 - Logic and Analysis of Social Research I Credits: 3 hours
SOC 6210 - Logic and Analysis of Social Research II Credits: 3 hours

Disciplinary Core:
SOC 6020 - Sociological Theory I Credits: 3 hours
SOC 6040 - Sociological Theory II Credits: 3 hours
SOC 6200 - Research Design and Data Collection II Credits: 3 hours

Research Course (Select one of the following courses not taken at the master's level):
SOC 6800 - Studies in Research Methodology: Variable Topics Credits: 3 hours
SOC 6810 - Advanced Multivariate Analysis Credits: 3 hours
SOC 6820 - Qualitative Methods Credits: 3 hours
SOC 6870 - Evaluation Research I Credits: 3 hours
SOC 6880 - Methods of Survey Research Credits: 3 hours

Cognate courses outside of Sociology (6 hours)

Demonstrate competence in research by completing:
SOC 6200 – Research Design and Data Collection II Credits: 3 hours
SOC 6210 – Logic and Analysis of Social Research II Credits: 3 hours

Area Examinations (Two area exams are required from department offerings)

Dissertation:
SOC 7300 - Doctoral Dissertation Credits: 15 hours

Criteria and procedures for meeting these requirements are described in detail in the department's Graduate Handbook.

Spanish

Mercedes Tasende, Interim Chair
Main Office: 409 Sprau Tower
Telephone: (269) 387-3003
Fax: (269) 387-3103

Robert Felkel
Natalio Ohanna
Pablo Pastrana-Pérez
Mariola Pérez de la Cruz
Mercedes Tubino Blanco
Kristina Wirtz
German Zárate-Sández

Master of Arts in Spanish

Advisor: Patricia Montilla,
511 Sprau Tower
e-mail: patricia.montilla@wmich.edu
Telephone: (269) 387-3040

The Master of Arts in Spanish enables students to extend and deepen their knowledge of literatures, cultures, and linguistics in the Hispanic world. The program provides advanced study for those who intend to pursue professions in Spanish or related fields as well as for those students who desire to do further graduate work.

Admission Requirements
1. A baccalaureate degree with a major of 30 hours in Spanish, or equivalent.
2. A minimum 3.0 grade point average in the undergraduate Spanish major.
3. Three letters of recommendation from persons able to evaluate the applicant's potential for graduate work in Spanish.
4. A brief statement in Spanish regarding areas of interest and academic/professional goals.
5. An official copy of transcripts for all completed coursework.
6. A recent version of a curriculum vitae or résumé.
7. An interview in Spanish, either in person or by telephone.
8. Applicants who do not meet all of the above requirements may be admitted at the discretion of the Spanish graduate faculty. In such cases, students may be required to complete advisor-approved course work to remove certain deficiencies.

Program Requirements
1. Complete a minimum of 30 hours of work in courses numbered 5000 and above.
SPAN 5400 and SPAN 5600 may be included with permission from the Spanish graduate advisor.

At least 21 hours of these credits must be in courses numbered 6000 and above. A maximum of six (6) hours of the required 30 hours may be taken in appropriate cognate fields, as approved by the Spanish graduate advisor.

2. Complete specified coursework satisfactorily.
SPAN 6000 – *Don Quijote* Credits: 3 hours

And one of the following courses:
SPAN 6050 – Foundation in Spanish Linguistics Credits: 3 hours
SPAN 6070 - Variations and Changes in Spanish Credits: 3 hours
SPAN 6260 – Survey of Spanish Literature to the 18th Century Credits: 3 hours
SPAN 6270 – Survey of Spanish Literature from the 18th Century to the Present Credits: 3 hours
SPAN 6280 – Survey of Spanish American Literature to *Modernismo* Credits: 3 hours
SPAN 6290 – Survey of Spanish American Literature from *Modernismo* to the Present Credits: 3 hours

3. Maintain a minimum grade point average of 3.0 in all graduate courses combined.

4. Pass the M.A. comprehensive examination.
The comprehensive examination consists of two parts, namely, one written examination and one oral examination conducted in Spanish. All coursework must be completed before the comprehensive exam is taken.

There are six areas of study, from which three are chosen for the exam:

- Spanish literature and culture I: Medieval and Golden Age periods
- Spanish literature and culture II: 18th century to present
- Spanish American literature and culture I: Colonial period through *Modernismo*
- Spanish American literature and culture II: 20th and 21st centuries
- Spanish linguistics I: Spanish linguistic systems and their acquisition
- Spanish linguistics II: Linguistic variations, uses, and changes in Spanish

The comprehensive examination consists of a four-hour written section and a two-hour oral section. Both sections are based on the reading list of three of the six areas of study and on coursework completed during M.A. studies.

A single grade will be given for the entire exam. Possible grades are: superior, good, pass, or fail. Students who fail the exam may retake it only once. At the discretion of the exam committee, they may be required to retake the entire examination or portions of it. Failing the exam for a second time will result in dismissal from the program.

Students should take the comprehensive examination as soon as possible after finishing required coursework, but it is recommended that they take the examination within period of four months after having completed required coursework.

Additional Program Information
For additional information about the Master of Arts in Spanish and for forms needed to apply for admission, students may write to WMU's Office of Admissions or to the department's graduate advisor. . Students are encouraged to consult information available at www.wmich.edu/spanish. Assistantships may be available for qualified applicants.

Master of Arts in Spanish (Accelerated)

The Accelerated Graduate Degree Program (AGDP) in Spanish allows students to begin accumulating credits towards completion of a master's degree while still enrolled as undergraduates. Undergraduate students admitted to the Spanish AGDP, with senior standing, may take up to 12 credit hours of designated 5000- or 6000-level courses for graduate credit. These designated courses may be used in completion of both the bachelor's degree and the master's degree.

Degree hours
An undergraduate degree in Spanish requires a total of 122 credit hours. (The non-teaching major requires a total of 33 credit hours of Spanish, while the Education Curriculum requires a total of 36 credits of Spanish). The Master of Arts in Spanish requires a total of 30 credit hours. Students enrolling in the AGDP for the minimum 12 graduate credits would earn 140 total undergraduate and graduate credit hours in contrast to the typical combined 152 undergraduate and graduate credit hours under the progression to degree(s).

Students will pay undergraduate tuition for the AGDP eligible 5000- and 6000-level courses as undergraduates and the courses will be included in the flat tuition rate. On completion of the undergraduate degree, the students will be re-classified as a graduate student and then will pay graduate tuition rates.

Eligibility for application
This program is open to undergraduate students in both Spanish majors (non-teaching and Education Curriculum). A student must have: 1) senior status, 2) a cumulative undergraduate GPA of at least 3.0 based on at least 45 earned hours, 15 of which must be earned at Western Michigan University, and 3) a declared Spanish major. Undergraduate

students enrolled in the AGDP will be expected to meet graduate expectation in their graduate courses. Students who have received their baccalaureate degrees will be ineligible to apply for this program and retroactively claim credits toward the M.A. degree.

Admission criteria

The student must meet the established master's program admission criteria:

1. An undergraduate minimum GPA of 3.5 in Spanish (based on 15 credit hours earned at WMU and on at least 20 credit hours in a declared major in Spanish).
2. Two letters of recommendation from persons familiar with the applicants academic background and Spanish language skills.
3. A brief statement (approximately 250 words in Spanish) of career objectives and academic and professional interests.

Admission procedure

1. As early as possible in the academic junior year, the potential AGDP student should contact the director of graduate studies to discuss this AGDP option and review the requirements, timelines, and application procedures.
2. Students must apply for admission to the graduate program with the Office of Admissions/graduate admissions and must complete the necessary application materials for admission to the master's program in the Department of Spanish.
3. Upon acceptance into the AGDP, the students must meet together with the director of graduate studies and an undergraduate academic advisor to prepare an appropriate program of study that meets the requirements for the undergraduate and graduate degrees.
4. A letter advising which graduate courses will be counted in both degrees will be sent to the student and to the registrar. A copy of this letter will also be included in the student's graduate file.

Requirements for continuing eligibility and graduation

1. It is expected that the baccalaureate degree will be awarded within one calendar year after initial AGDP enrollment. Students not meeting this time constraint must re-apply to be admitted to the graduate program.
2. In order to progress automatically into the graduate program, the student must achieve a grade of "B" or better in each of the graduate courses being counted for the undergraduate degree, as well as maintain a 3.0 GPA overall. Students who do not meet this requirement will have the earned grade applied to their undergraduate degree only and must apply for readmission into the graduate program. Student who complete the undergraduate degree including a "B" or above in the specified graduate courses will be admitted as graduate students (with the relevant graduate credit) in the next semester or session after receiving the bachelor's degree. Once students have earned their bachelor's degree and have been admitted as graduate students, they will be eligible to apply for a teaching assistantship.
3. A student completing the undergraduate degree with a GPA within the Spanish major of less than 3.0 will be automatically declared ineligible for the AGDP.
4. A student in the AGDP must follow the program of study developed with the graduate director and the undergraduate advisor. Failure to follow this program of study may result in ineligibility for the AGDP.
5. Students must complete the requirements for the M.A. degree within 24 months from the completion of the bachelor's degree. Students unable to meet this requirement must apply for an extension with the director of graduate studies in the Department of Spanish.
6. Students who have completed the Accelerated Graduate Degree Program will have it noted on their undergraduate and graduate transcript.
7. Any student who becomes ineligible to continue participation in the AGDP will be notifies in writing by the director of graduate studies.

Withdrawal

A student may at any time withdraw from the AGDP by informing the director of graduate studies in the Department of Spanish in writing. A copy of the request to withdraw must be sent to the Graduate College and the Registrar's Office.

Designated AGDP eligible Spanish courses:
5000-level courses:
SPAN 5400 - Studies in Spanish Linguistics Credits: 3 hours
SPAN 5600 - Studies in Spanish Literatures Credits: 3 hours

6000-level courses:
SPAN 6000 - Don Quijote Credits: 3 hours
SPAN 6050 - The Linguistic Systems of Spanish Credits: 3 hours
SPAN 6070 - Variations and Changes in Spanish Credits: 3 hours
SPAN 6100 - Topics in Hispanic Culture Credits: 3 hours
SPAN 6200 - Topics in Spanish Literature Credits: 3 hours
SPAN 6260 - Graduate Survey of Spanish Literature to 18th Century Credits: 3 hours
SPAN 6270 - Graduate Survey of Spanish Literature from the 18th Century to the Present Credits: 3 hours
SPAN 6280 - Graduate Survey of Latin American Literature to Modernismo Credits: 3 hours
SPAN 6290 - Graduate Survey of Latin American Literature from Modernismo to the Present Credits: 3 hours
SPAN 6300 - Topics in Spanish American Literature Credits: 3 hours
SPAN 6400 - Topics in Spanish Linguistics and Methodology Credits: 3 hours
SPAN 6500 - Methods of Teaching College Spanish Credits: 3 hours
SPAN 6600 - History of the Spanish Language Credits: 3 hours
SPAN 6770 - Foreign Study Credits: 1 to 12 hours
SPAN 6900 - Seminar Credits: 1 to 3 hours

Doctor of Philosophy in Spanish

Advisor: Patricia Montilla,
511 Sprau Tower
e-mail: patricia.montilla@wmich.edu
Telephone: (269) 387-3040

Students who pursue the Ph.D. in Spanish at Western Michigan University will study the cultures of the Hispanic world in depth. The Spanish doctoral program is based upon the belief that advanced students should focus their knowledge of Hispanic cultures from the beginning of their doctoral studies through coursework in their chosen area of specialization, culminating in their doctoral dissertation. Additionally, students should develop the methods and skills necessary to investigate and analyze language and/or literature and be able to express their findings in clear, consistent, and complete terms. The goal of the Ph.D. program is, in sum, twofold: to lead students to comprehend and appreciate the breadth and uniqueness of Hispanic cultures as they have evolved through time and across geography, and to enable students to formulate and express their own findings and conclusions regarding the enduring values and manifestations of those cultures.

Admission Requirements
1. The M.A. in Spanish at Western Michigan University or an equivalent degree from another university.
2. Satisfaction of the general requirements of the Graduate College.
3. Three letters of recommendation from persons qualified to assess applicant's academic potential for Ph.D. study in Spanish.
4. A 500-word statement written by the applicant in which s/he describes principal academic and career interests and goals, as well as reasons for desiring to study in the Spanish program at Western Michigan University.
5. A writing sample in Spanish. This would ordinarily be a paper written in a course taken during the M.A. program.
6. An official copy of transcripts for all completed coursework.
7. A recent version of a curriculum vitae or résumé.
8. An interview in Spanish, either in person or by telephone.

Program Requirements
1. Complete a minimum of 36 hours of coursework at the 6000-level or above, and beyond the M.A. level. With written prior approval from the Spanish graduate advisor, a maximum of 12 of the 36 hours may be taken in supporting coursework outside the department.

2. Complete successfully SPAN 6000 and SPAN 6600. All courses count toward the required 36 hours.
SPAN 6000 - *Don Quijote* Credits: 3 hours
SPAN 6600 - History of the Spanish Language Credits: 3 hours

3. Maintain a minimum grade point average of 3.0 in all doctoral-level courses combined.

4. Demonstrate reading knowledge of a third language beyond Spanish and English that is relevant to one of the student's major research interests.
Competency will be measured by either:

- passing a reading or translation examination, the exact format of which will be determined in consultation with the Spanish graduate advisor, or
- passing a Language for Graduate Study course (e.g. FREN 5020, GER 5020, ITAL 5020), whose level will be determined in consultation with the Spanish graduate advisor.

5. Pass the Ph.D. comprehensive examination.
The comprehensive examination consists of three parts, namely, two written examinations and one oral examination conducted in Spanish. All coursework and the reading knowledge examination (see 1 through 4 above) must be completed before the comprehensive exam is taken.

There are six areas of study, from which two are chosen for the exam:

- Spanish literature and culture I: Medieval and Golden Age periods
- Spanish literature and culture II: 18th century to present
- Spanish American literature and culture I: Colonial period through *Modernismo*
- Spanish American literature and culture II: 20th and 21st centuries
- Spanish linguistics I: Spanish linguistic systems and their acquisition
- Spanish linguistics II: Linguistic variations, uses, and changes in Spanish

The comprehensive examination consists of two four-hour written sections and a two-hour oral section. All sections cover coursework completed during doctoral studies. The first written section is based on:

1) a specialized reading list of works corresponding to a primary area of study, and
2) an additional reading list developed in consultation with the future dissertation director.

The second written section is based on a non-specialized reading list of works corresponding to a secondary area of study. The oral section is comprehensive.

A single grade will be given for the entire exam. Possible grades are: superior, good, pass, or fail. Students who fail the exam may retake it once. At the discretion of the exam committee, they may be required to retake the entire examination or portions of it.

Students should take the comprehensive examination as soon as possible after finishing required coursework and passing the reading knowledge exam, but it is recommended that they take the examination within a period of four months after having completed those requirements.

6. Prepare and defend a dissertation.
The topic of the dissertation is chosen by the students in consultation with the director. At least 15 hours of dissertation credits (SPAN 7300) are required.

The dissertation is the capstone of the Ph.D. experience. It ought to be an original, high-quality contribution to scholarship in an area of particular interest to the student. As in the case of coursework, the dissertation is a learning experience to be guided by faculty. To be sure, the research and writing of this book-length manuscript requires considerable independent work and discipline on the part of the student. Nonetheless, we give great importance to

the role of the faculty in this process, particularly to the duties of the dissertation director. The goal is that the entire process be realistic, fair, collegial, and expeditious. We believe that this student-centered approach to research will be significant for the achievement of our overall objective, i.e., the formation of first-rate teacher/scholars in a reasonable period of time.

7. Fulfill all general and specific requirements of the Graduate College.

Recommendations in Addition to Requirements

1. Teaching – It is expected that most Ph.D. students in Spanish will have an interest in teaching. Thus, at some time during their graduate career at Western Michigan University, all Spanish Ph.D. students will be given the opportunity to gain teaching experience, usually through a teaching assistantship. Opportunities for teaching exist in a variety of courses at the undergraduate level. This experience will be guided by faculty supervision. Renewal or continuation of assistantships depends on satisfactory performance in teaching and in graduate studies, as well as on availability of university resources.

2. Study abroad – It is recommended that before graduation, all Ph.D. students in Spanish will have spent at least six months in residence or study in a Spanish-speaking country. Many students will have fulfilled that expectation as undergraduates, but they are urged to seek additional opportunities to study abroad. Students in our program are eligible for teaching assistantships offered by the Universidad Autónoma de Querétaro in Mexico with which we have an exchange agreement. Six hours of graduate credit from this institution may be counted toward the 36-hour Ph.D. course requirement. Study at other universities in Mexico, Spain, Ecuador or other countries is also possible with the approval of the graduate advisor. Research and writing for the dissertation may be carried out during residence abroad, provided that arrangements are approved by the dissertation director. Since the faculty places a high priority on mastery of the Spanish language and the acquisition of cultural insights gained during residence in Spanish-speaking countries, the department will be very supportive of students' efforts to study abroad. Graduate students are eligible for the President's Grants for study abroad awarded by the University, as well as for some departmental scholarships.

Additional Program Information

For additional information about the Ph.D. in Spanish and for forms needed to apply for admission, students may write to WMU's Office of Admissions or to the department's graduate advisor. Students are encouraged to consult information available at www.wmich.edu/spanish.

Statistics

Magdalena Niewiadomska-Bugaj, Chair
Main Office: 3304 Everett Tower
Telephone: (269) 387-1420
Fax: (269) 387-1419

Hyunkeun Cho
Joseph McKean
Joshua Naranjo
Georgiana Onicescu
Rajib Paul
Jeffrey Terpstra

The Department of Statistics offers graduate programs leading to the Master of Science in Statistics and the Doctor of Philosophy in Statistics. It also offers a graduate certificate in Applied Statistics and a graduate certificate in Biostatistics.

Financial Assistance
The Department of Statistics offers opportunities for financial support of graduate students through Graduate Assistantships and Fellowships. Individuals desiring further information about such opportunities, or about the graduate program as a whole, should contact the Statistics Department Office, 3304 Everett Tower.

Dr. Joshua Naranjo, Graduate Committee Chair, 5507 Everett Tower, 387-4548. E-mail: joshua.naranjo@wmich.edu

Master of Science in Statistics
Advisor: Dr. Joshua Naranjo

This program will give students a combination of knowledge of statistical techniques, experience with using these techniques in applied situations, and understanding of the theoretical principles behind these techniques. Students receive excellent training for professional employment in industry or government, and at the same time obtain sufficient theoretical background to qualify them to teach elementary statistics or to continue into more advanced degree programs. The student is encouraged to apply for an internship experience (STAT 7120) where it is expected that students will collaborate with professional statisticians in an actual work environment with real problems. A minimum of thirty-two hours is required, and the resulting degree is a Master of Science in Statistics.

Admission Requirements
For admission to this program, candidates must have completed an undergraduate program containing a substantial amount of mathematics, including a complete calculus sequence, a course in probability, a course in statistical methods, and a course in linear algebra. A complete undergraduate mathematics major is not required.

Program Requirements
The program requires at least 32 hours of approved courses from the following groups:

1. Statistics Courses
STAT 6600 - Statistical Theory II Credits: 4 hours
STAT 6620 - Applied Linear Models Credits: 3 hours
STAT 6640 - Design of Experiments I Credits: 3 hours
STAT 6800 - SAS Programming Credits: 3 hours

2. Five of the following:
STAT 5610 - Applied Multivariate Statistical Methods Credits: 3 hours
STAT 5630 - Sample Survey Methods Credits: 3 hours

STAT 5660 - Nonparametric Statistical Methods Credits: 3 hours
STAT 5820 - Time Series Analysis Credits: 3 hours
STAT 6040 - Statistics for Epidemiology Credits: 3 hours
STAT 6050 - Fundamentals of Clinical Trials Credits: 3 hours
STAT 6350 - Spatial Statistics Credits: 3 hours
STAT 6450 - Applied Bayesian Statistics Credits: 3 hours
STAT 6460 - Large Sample Theory Credits: 3 hours
STAT 6610 - Multivariate Statistical Analysis Credits: 3 hours
STAT 6630 - Linear Models Credits: 3 hours
STAT 6650 - Advanced Statistical Inference Credits: 3 hours
STAT 6660 - Advanced Nonparametric Statistical Methods Credits: 3 hours
STAT 6670 - Introduction to Random Processes Credits: 3 hours
STAT 6680 - Categorical Data Analysis Credits: 3 hours
STAT 6690 - Studies in Probability and Statistics Credits: 3 hours
STAT 6810 - Survival Data Analysis Credits: 3 hours
STAT 6830 - Robust Statistical Analysis Credits: 3 hours
STAT 6880 - Statistical Research Tools Credits: 3 hours
STAT 7120 - Professional Field Experience Credits: 2 to 12 hours

3. Pass the Department Graduate Exams in Statistics which cover material in:
STAT 6600 - Statistical Theory II Credits: 4 hours
STAT 6620 - Applied Linear Models Credits: 3 hours
STAT 6640 - Design of Experiments I Credits: 3 hours

Master of Science in Statistics (Accelerated)
Advisor: Dr. Joshua Naranjo

The Accelerated Degree Program (AGDP) allows undergraduate students in statistics an opportunity to complete the requirements for both the bachelor's and master's degrees at an accelerated pace. These undergraduate students may count up to 12 (but not fewer than 6) credit hours of 5000 or 6000 level courses taken during their undergraduate studies toward a master's degree in statistics within 24 months after completion of their bachelor's degree in statistics. This program will then allow an undergraduate student majoring in statistics to complete an accelerated master's in statistics by completing 152 combined graduate/undergraduate credit hours.

Application to the AGDP Program
A prospective student who meets the eligibility requirements (see Criteria for Admission) must set up a meeting with the statistics undergraduate advisor and the graduate advisor to develop Plans of Work for the bachelor's and master's degree programs.

The prospective student must be given a copy of these guidelines.

Before admission to an AGDP program can be finalized, students must submit the standard application for admission to the Office of Admissions/graduate admissions including:

- an application
- application fee
- a copy of all transcripts
- a Plan of Graduate Work, signed by the prospective student, the undergraduate advisor and the graduate advisor

The Plan of Graduate Work for the master's degree must clearly indicate:

- the 5000 or 6000 level courses (a maximum of 12 graduate credit hours) that will be counted for both bachelor's and master's degrees,
- the graduation date for the master's degree that meets the time limit for the AGDP (i.e. obtaining a masters degree in statistics within 24 months of completing the bachelor's degree). Any changes to the AGDP Plan

of Graduate Work must be submitted in writing and approved by the graduate advisor and the graduate dean.

Criteria for Admission to the AGDP Program

Permission to pursue an AGDP does not guarantee admission to the Graduate College. Admission is contingent on meeting the following eligibility requirements at the time of entering the graduate program:

1. Transfer students must have completed a minimum of 30 credit hours as a full-time student at WMU.
2. Students must have a minimum cumulative grade point average (GPA) of 3.5 at WMU.

Requirements for Participation and Graduation

Students must complete the bachelor's degree prior to entering the master's program. Students in the AGDP may not elect to by-pass the bachelor's degree.

Students will be allowed to count up to a maximum of 12 credit hours of 5000 or 6000 level courses taken during their undergraduate studies toward their master's degree. These credits will be waived toward their master's degree.

No more that 12 credit hours of graduate work may be counted towards the requirements of the student's bachelors degree.

Students must complete the master's degree within 24 months from the completion of the bachelor's degree. If the master's program is not completed within these time limits, none of the 5000 or 6000 level courses specified in the Plan of Graduate Work can be counted toward the master's degree. Extension to this time-line may be granted by the graduate advisor only in special circumstances.

Continuing Eligibility

It is the responsibility of the student to recognize his/her eligibility status.

A student completing the bachelor's degree requirements with an accumulated GPA of less than 3.25 is automatically terminated from the AGDP.

A student who does not follow the approved Plan of Graduate Work may become ineligible to participate in the AGDP program.

A student who is ineligible to participate in (or withdraws from) the AGDP can no longer qualify for waiving any of the courses specified in the Plan of Graduate Work toward a master's degree. These courses, however, may be counted toward the student's bachelor's degree upon the discretion of the undergraduate advisor.

A student who becomes ineligible to participate in the AGDP, shall be informed by the graduate advisor in writing of the ineligibility. A copy of this letter to the student shall be sent to the Graduate College.

Withdrawal

A student may at any time withdraw from an approved AGDP by informing the director of undergraduate programs and the graduate advisor in writing. A copy of this request to withdraw must be sent to the Graduate College for approval.

A typical Plan of Study

For a student planning an undergraduate major in statistics, it is recommended that the student selects additional electives from the list of STAT 5000 level courses that are approved for both, the undergraduate major and the master's program, such as STAT 5610, STAT 5630, STAT 5650, and STAT 5660. Other courses that could be selected are STAT 5620, STAT 6600, STAT 6620, STAT 6640, and STAT 6800. These classes would count in both programs. Up to six remaining courses could be completed in two semesters.

An Alternate Undergraduate Major
Students with an undergraduate major which requires a substantial amount of mathematics courses (MATH 1220, MATH 1230, MATH 2300, MATH 2720, STAT 3620, and STAT 3640) might also be eligible to enroll in this accelerated program. They would first need to obtain permission from their major department that the identified 5000 level courses are available to use as electives or to complete the 122 required hours. They would follow the same admission procedure to the accelerated program and would then work with the statistics advisor to get the required paperwork, outlining the accelerated degree courses, filed with the registrar's office. In this way, for example, a student could obtain an undergraduate degree in mathematics and a master's degree in statistics.

Doctor of Philosophy in Statistics

Advisors:
Dr. Rajib Paul

The Doctor of Philosophy in Statistics is designed to prepare students for careers in teaching and research universities, in industry, or in government. It is expected that students, through courses and other experiences, will develop facility in theoretical statistics and in several applied statistics areas. Choices available in the electives area allow the program to be designed to suit a variety of career interests.

Admission Requirements
A student must possess a master's degree in Statistics or a directly comparable degree with a substantial number of statistics credits in order to be admitted to the program. In addition to satisfying the general admission requirements of the Graduate College, the student must have acquired a sufficient level of mathematical training with satisfactory grades as determined by the Statistics Doctoral Committee. Mathematics coursework includes, but is not necessarily limited to, a complete calculus sequence and a linear algebra course. Upon entrance to the program the students are expected to meet with an advisor who will assist him/her in planning his/her program until he/she reaches the stage of *candidate*.

Program Requirements
1. Departmental Graduate Examination in Statistics
Prior to admission or during the first year, students must pass the Departmental Graduate Examination (DGE) in Statistics at the doctoral level. This consists of two, three-hour exams in the areas of theoretical statistics (calculus-based mathematical statistics and probability) and applied statistics (regression and design of experiments). At WMU, this exam material corresponds to the following courses: STAT 5620, 6600, 6620, and 6640. The DGE is given once a year, usually in May during the first week of the Summer I session.

2. Acquire at Least 60 Hours of Course Work

Note: Students admitted to the program with a Masters Degree in Statistics or a closely related field may possibly receive credit for as many as 30 of the 60 hours required.

Note: Up to six credit hours in approved areas related to statistical applications (e.g. computer science, computational or applied mathematics, engineering, biological science, management, or economics) may be substituted as electives upon approval of the Statistics Doctoral Committee.

Core Courses
STAT 6600 - Statistical Theory II Credits: 4 hours
STAT 6620 - Applied Linear Models Credits: 3 hours
STAT 6640 - Design of Experiments I Credits: 3 hours
STAT 6800 - SAS Programming Credits: 3 hours

Doctoral Preliminary Examination Courses
STAT 6610 - Multivariate Statistical Analysis Credits: 3 hours
STAT 6630 - Linear Models Credits: 3 hours
STAT 6650 - Advanced Statistical Inference Credits: 3 hours
STAT 6660 - Advanced Nonparametric Statistical Methods Credits: 3 hours

Course Electives at the 6000 Level
At least seven 6000 level electives are required.
STAT 6670 - Introduction to Random Processes Credits: 3 hours
STAT 6680 - Categorical Data Analysis Credits: 3 hours
STAT 6690 - Studies in Probability and Statistics Credits: 3 hours
STAT 6810 - Survival Data Analysis Credits: 3 hours
STAT 6830 - Robust Statistical Analysis Credits: 3 hours

Course Electives at the 5000 Level
No more than three 5000 level electives can be applied to the program of study.
STAT 5610 - Applied Multivariate Statistical Methods Credits: 3 hours
STAT 5630 - Sample Survey Methods Credits: 3 hours
STAT 5650 - Design of Experiments for Quality Improvement Credits: 3 hours
STAT 5660 - Nonparametric Statistical Methods Credits: 3 hours
STAT 5820 - Time Series Analysis Credits: 3 hours

Note:
The following courses may be substituted as electives upon approval of the Statistics Doctoral Committee.
STAT 6700 – Statistical Consulting Practicum Credits: 3 hours
STAT 6910 - Practicum in Statistical Consulting Credits: 1 hour

3. Three Preliminary Examinations
A student must pass preliminary examinations in Multivariate/Linear Models (STAT 6610 and 6630) and in Statistical Inference (STAT 6650 and 6660). The third exam is satisfied by completion of project reports in an area to be chosen, with the approval of the Statistics Doctoral Committee, from two 6000 level statistics courses. Two failures on the same examination will result in dismissal from the program. Students are expected to take the preliminary examinations as soon as they become eligible. Failure to do so will result in a failed attempt.

4. Demonstrate competency in two research tools.
In accordance with the requirements of the Graduate College, each student is required to attain competence in two approved research tools. Normally for students in Statistics these will consist of demonstrated competence in computer usage and/or a foreign language. Competence in computer usage can be demonstrated by obtaining a satisfactory grade in STAT 6800, STAT 6880 and/or equivalent statistics courses. Competence in a foreign language can be demonstrated by passing a reading course at the 4000-level in that language or by translating from a language other than English a statistical paper to the satisfaction of the Statistics Doctoral Committee. A third option for a research tool is a cross-disciplinary research experience involving concepts and language of a discipline other than Statistics (e.g., Biology, Chemistry, or Engineering) and resulting in documentation of the student's competence in the other discipline in a form of written reports and/or published papers. The Statistics Doctoral Committee shall determine the acceptability of the cross-disciplinary research experience.

5. Dissertation
Complete and defend the dissertation before the student's dissertation committee. This requires at least 12 hours of the following course:
STAT 7300 - Doctoral Dissertation Credits: 1 to 15 hours

<u>Administration and Procedures</u>
This program will be administered by the Statistics Department Doctoral Committee. This committee will be responsible for the scheduling, preparation, and grading of preliminary examinations in statistics and for arranging a Thesis Proposal Defense.

Furthermore, each year the Statistics Doctoral Committee will review the progress of all doctoral students in the Statistics program. Any student not making satisfactory progress may be dropped from the program. Grades, performance on preliminary exams, the schedule of completed classes and exams, general progress towards

completion of degree, as well as possible other criteria will be considered in this decision. As an example, course grades below a "B" are undesirable and could be grounds for dismissal.

A chronological progression of the program is as follows:

1. Upon entrance to the doctoral program in Statistics, students are expected to meet with a Ph.D. advisor for help in planning the student's program until he/she reaches the status of candidate (i.e. when all three preliminary examinations are passed).
2. During the first semester of study, the student must complete a plan of study and have it approved by the Statistics Doctoral Committee. The selection of preliminary exams and research tools shall also be included.
3. Students are expected to take preliminary exams at the first opportunity after the necessary course work is completed. Failure to do so can result in a failed attempt. Normally, these exams will be given at most once a year. Two failures on the same examination will result in dismissal from the program.
4. During the semester in which the student attains the status of candidate he/she will select a dissertation advisor and corresponding committee with the approval of the Statistics Doctoral Committee. The candidate and the dissertation advisor will select, with the approval of the Dissertation Committee, a research topic for the candidate. In each of the above situations final appointment is subject to the approval of the Department Chairperson and the Graduate College.
5. A student must also pass a Dissertation Proposal Defense, which is an oral presentation of a thesis proposal to his/her Dissertation Committee. This normally takes place at the end of the first year after passing all three preliminary examinations.

Certificate Program in Applied Statistics, Interdisciplinary
Advisor: Dr. Joshua Naranjo

Program prerequisite:
Undergraduate course in elementary statistics (3 credit hours) - does not need to be a course taken from the Statistics Department.

The program will consist of six courses (minimum of 18 hours):
STAT 6020 - Quantitative Research Methods with Statistical Software Credits: 3 hours

And five courses selected from:
STAT 5610 - Applied Multivariate Statistical Methods Credits: 3 hours
STAT 5630 - Sample Survey Methods Credits: 3 hours
STAT 5650 - Design of Experiments for Quality Improvement Credits: 3 hours
STAT 5660 - Nonparametric Statistical Methods Credits: 3 hours
STAT 5670 - Statistical Design and Analysis of Experiments Credits: 4 hours
STAT 5680 - Regression Analysis Credits: 3 hours
STAT 6620 - Applied Linear Models Credits: 3 hour.
STAT 6640 - Design of Experiments I Credits: 3 hour.
STAT 6800 - SAS Programming Credits: 3 hours

For graduate students at WMU -
Up to nine credit hours of approved quantitative research courses taken by the students from their own departments can be substituted in place of courses on this list.

Certificate Program in Biostatistics
Advisor: Dr. Georgiana Onicescu

Graduate Certificate in Biostatistics is designed for the graduate students in statistics but also for qualifying graduate students that are not statistics majors as well as working professionals who want to enhance their background in health-related data analysis: Physicians, nurses, clinical researchers, health educators and administrators.

Applicants are expected to have completed an introductory course in statistics, and be enrolled as graduate students at WMU.

The program requires 18 credit hours (six courses).

Required Courses
STAT 6030 - Fundamentals of Biostatistics Credits: 3 hours
STAT 6040 - Statistics for Epidemiology Credits: 3 hours
STAT 6050 - Fundamentals of Clinical Trials Credits: 3 hours

Electives
Three elective course are to be selected from:
STAT 6620 - Applied Linear Models Credits: 3 hours
STAT 6640 - Design of Experiments I Credits: 3 hours
STAT 6680 - Categorical Data Analysis Credits: 3 hours
STAT 6800 - SAS Programming Credits: 3 hours
STAT 6810 - Survival Data Analysis Credits: 3 hours

Note:
For graduate students in other programs at WMU, up to nine hours of approved quantitative graduate research courses taken from the student's own department can substitute courses listed as electives. These courses would count, as appropriate, for their graduate degree.

World Languages and Literatures

Molly Lynde-Recchia, Chair
411 Sprau Tower
Telephone: (269) 387-3001
Fax: (269) 387-6333
http://www.wmich.edu/languages

Jeffrey Angles
Peter Blickle
Rand Johnson
David Kutzko
Cynthia Running-Johnson

Interdisciplinary Programs – College of Arts and Sciences

Certificate Program in Ethnohistory

Ethnohistory is the study of cultures, combining research techniques and theoretical approaches from the fields of history and anthropology. The core of ethnohistory lies in the realization shared by practitioners of the benefits obtained through the use of multiple lines of evidence to study history and culture. Ethnohistorians recognize that documents, archaeological findings, oral histories, and ethnographies can be profitably compared, contrasted, and integrated to elucidate the histories and cultural contexts of groups that have been ignored in conventional historical accounts. By juxtaposing multiple lines of evidence in an interdisciplinary manner, ethnohistorians can at once examine the distant and the local, the general and the particular, bringing human experience into better focus.

Western Michigan University is a center for ethnohistorical research on a global level, including the United States, Canada, Mexico, the Caribbean, Central and South America, East Africa, South Asia, and Europe. Particular areas of expertise include culture contact, colonialism, material analysis, historiography, oral history, gender, historical archaeology, ethnography, tribalization, globalization, and modernization. These topics are not restricted to any particular geographic area nor any particular societal structure.

Admission Requirements

This certificate program is open to any student admitted to a graduate degree program at Western Michigan University.

Program Requirements

Each student will complete satisfactorily five courses (fifteen credit hours). Students will be required to take three courses from the list of recommended courses below, at least one of which will be outside of their home department; and take the Ethnohistory Seminar (HIST/ANTH 6090) two times, which will be alternately taught each year by faculty from history and anthropology.

Recommended Courses

The courses below count for the Ethnohistory program only when taught by an affiliate faculty of the Ethnohistory program. Please see an advisor for more complete information.

ANTH 5000 - Topics in Archaeology Credits: 3 hours
ANTH 5060 - The Archaeology of Gender Credits: 3 hours
ANTH 6020 - Seminar in Archaeology Credits: 3 to 4 hours
ANTH 6900 - Archaeological Field School Credits: 3 to 6 hours
HIST 6010 - Historiography Credits: 3 hours
HIST 6250 - Topics in Cultural Resource Management Credits: 1 to 3 hours
HIST 6440 - Material Culture Credits: 3 hours

College of Aviation

Captain David Powell
Dean

Raymond Thompson
Associate Dean

Captain Stephen K. Jones
Executive Director of Flight Operations

Gil Sinclair
Faculty Chair

Kelly Bates
Business Manager

Sharon VanDyken
Director, Academic Advising

Tom Thinnes
Manager, Recruitment and Outreach

Blair Balden
Willem Homan
William Rantz
Vladimir Risukhin
Geoffrey Whitehurst

Haworth College of Business

Satish Deshpande
Interim Dean

Devrim Yaman
Associate Dean

Stephen Newell
Interim Associate Dean

Academic Units:
Accountancy
Business Information Systems
Finance and Commercial Law
Management
Marketing
Military Science and Leadership

The Haworth College of Business provides student-centered business education through teaching, research and service activities that deliver exceptional intellectual and economic value to regional and international communities.

College Graduate Degree Programs:
The degree programs leading to the Master of Business Administration and the Master of Science in Accountancy are offered within the framework of the graduate education goal of the Haworth College of Business.

The undergraduate and master's business programs offered by the Haworth College of Business, Western Michigan University are accredited by AASCB: The Association to Advance Collegiate Schools of Business.

Enrollment in any graduate business course requires active admission to the MBA or MSA program. Students admitted to the University on Non-degree status are not eligible for enrollment in graduate business courses. Requests for exception to these enrollment policies must be submitted in writing to the MBA advisor, Haworth College of Business, 2320 Schneider Hall.

Application Procedures
U.S. residents may apply throughout the year. International applicants need to apply by April 1 for fall semester, August 1 for spring semester, or January 1 for summer semester. Please submit the following items:
1. The application (accessed at www.wmich.edu/admissions) and fee
2. An official transcript from each academic institution except WMU
3. One of the following items:
   a) Official GMAT/GRE scores, or
   b) Evidence of a prior graduate or professional degree from an accredited U.S. University, or
   c) GMAT WAIVER FORM based on seven years of executive experience.

4.Official TOEFL scores (for international students)
5. Updated resume

Continuation Requirements
To continue enrollment in graduate programs in the Haworth College of Business students must meet published University standards for graduate education. These standards require active admission status and an overall grade point average of at least 3.00 in all graduate business course work with alternative enrollment conditions possible as defined in the "Academic Standards" section of this Graduate Catalog.

Accountancy

Ola Smith, Chair
Main Office: 3190 Schneider Hall
Telephone: (269) 387-5210
Fax: (269) 387-5710

Mingming Feng
Donald W. Gribbin
Jerry G. Kreuze
Sheldon A. Langsam
James Penner
Jack M. Ruhl
Jagjit S. Saini
Thomas Schultz

Master of Science in Accountancy

Advisors:
Jerry G. Kreuze, 3162 Schneider Hall
Sheldon Langsam, 3160 Schneider Hall
Jagjit Saini, 3186 Schneider Hall
Thomas Schultz, 3122 Schneider Hall

The Master of Science in Accountancy prepares students for professional careers in public accounting, industry, commerce, finance, and government. A graduate of the Haworth College of Business with a Master of Science in Accountancy will be qualified to take many of the professional certification examinations.

The MSA program is designed to provide greater breadth and depth in accounting and business than that delivered in the undergraduate accountancy program. The curriculum helps students further develop their technical expertise, communication skills, and understanding of the role of accountants in organizations. Course work will be selected from the areas of financial accounting, cost and managerial accounting, auditing, taxation, not-for-profit accounting, accounting fraud, and accounting systems.

Admission Requirements
To be eligible for admission to the Master of Science in Accountancy (MSA) program, an applicant must have earned:

- A total score of at least 1100, which is the sum of the GMAT score and (200 x the GPA for the last 60 hours in an accredited undergraduate degree program)
- a minimum GMAT score of 480
- a minimum GPA of 2.75 for the last 60 hours in an accredited undergraduate degree program.

Recent scores of the Graduate Record Examination (GRE) are acceptable. Equivalent GRE test scores can be used to meet minimum GMAT score requirements and can be used in formula calculations for admission purposes. See www.ets.org for information on conversion of a GRE score to a predicted GMAT score.

International Students Admission Requirements
An applicant whose native language is not English must meet the following:

1. Applicants to the MSA program will be required to show TOEFL results of 90 Internet Based Total (IBT) or 577 Paper Based Total (PBT) for unrestricted admission.
2. Applicants with 61-89 Internet Based Total (IBT) or 500-576 Paper Based Total (PBT) will be admitted with the restricted policy. Students in this test range will be required to enroll in ENGL 3600 or ENGL 3610. The English class appropriate for the student will be determined by the IAS.
3. Enrollment of new international students will be limited to fall semester except for students with above 90-577 IBT/PBT scores who may begin their enrollment in fall, spring of summer I terms.

4. Students admitted with the restricted policy will be required to start summer I semester in order to fulfill the English class before fall semester. They will be allowed to enroll in academic courses their first semester as determined by the MSA faculty.

A Western Michigan University accountancy major with an average grade point of 3.3 or higher in the following eight courses (or equivalents) is not required to take the GMAT or GRE: ACTY 3100, 3110, 3130, 3220, 3240, 4160, and two of the electives (4110, 4130, 4140, 4220, and 4240).

Prerequisites to Graduate Study

The required preparation is an undergraduate degree in accounting, or its equivalent, and a 3.0 grade point average in accounting and business courses. Basic Skills: Quantitative Analysis, Computer Literacy, Academic Communications. Graduate students whose native language in not English and who do not have a degree from a U.S. institution must take the Academic Communication Placement Test at the beginning of their first semester of enrollment. This test is administered by the Center for English Language and Culture for International Students. It must be taken in addition to TOEFL (Test of English as a Foreign Language), which is taken as part of the admission process. A student who does not pass this examination is assigned to the Academic Communication for Business Purposes course. This course must be completed during the first semester of study. Graduate students whose native language is not English but have an undergraduate degree from a U.S. institution will not be required to take the placement test or the course. Basic Core: Corporate Finance; Legal, Regulatory, and Political Aspects of Business; Basic Economic Analysis. Accountancy Course Prerequisites: ACTY 2100, Principles of Accounting I; ACTY 2110, Principles of Accounting II; ACTY 3100, Financial Accounting I; ACTY 3110, Financial Accounting II; ACTY 3130, Accounting Information Systems; ACTY 3220, Managerial Accounting Concepts and Practices; ACTY 3240, Introductory Tax Accounting; ACTY 4160, Auditing.

Program Requirements

A minimum of 30 semester hours of graduate work is required. A minimum of 15 hours of accounting must be selected from the following courses:
ACTY 6100 - Financial Accounting and Reporting Credits: 3 hours
ACTY 6170 - Attestation and Assurance Services Credits: 3 hours
ACTY 6210 - International Accounting Credits: 3 hours
ACTY 6220 - Seminar in Management Accounting Credits: 3 hours
ACTY 6240 - Business Tax Planning Credits: 3 hours
ACTY 6270 - Accounting Fraud Credits: 3 hours
ACTY 6280 - Financial Statement Analysis Credits: 3 hours
ACTY 6430 - Selected Topics in Accountancy II Credits: 3 hours
ACTY 6440 - Selected Topics in Accountancy III Credits: 3 hours
Note: ACTY 6010 and ACTY 6110 do NOT qualify as part of the 30 credit hour MSA program.

Additional Requirements

In addition to the accountancy course requirements, the student must elect a minimum of nine hours of 6000-level courses outside the Department of Accountancy. Each individual program must include at least twenty-four hours of 6000- or 7000-level courses and must have prior approval of a department advisor.

Nine Hours of 6000-level Non-Accounting Courses

The nine hours of 6000-level courses outside the Department of Accountancy should be selected from the following courses:
BUS 6150 - Global Business Credits: 3 hours
BUS 6160 - Law, Ethics and Corporate Social Responsibility Credits: 3 hours
CIS 6300 - ERP Data Management Credits: 3 hours
CIS 6400 - Business Analytics Credits: 3 hours
CIS 6640 - Predictive Analytics and Data Mining Credits: 3 hours
COM 6430 - Communication, Strategic Planning and Innovation Credits: 3 hours
COM 6730 - Conflict Management Credits: 3 hours
COM 6810 - Group Communication Processes Credits: 3 hours
COM 6830 - Power and Leadership Credits: 3 hours
ECON 6030 - Advanced Price Theory Credits: 3 hours

ECON 6070 - Uncertainty and Health Credits: 3 hours
FCL 6000 - Seminar in Business Credits: 3 hours
FIN 6120 - Financial Management Credits: 3 hours
FIN 6190 - Financial Markets and Institutions Credits: 3 hours
FIN 6220 - Financial Restructuring Credits: 3 hours
FIN 6250 - Financial Strategy Credits: 3 hours
FIN 6420 - International Finance Credits: 3 hours
FIN 6450 - Computer Applications in Finance Credits: 3 hours
MGMT 6100 - International Management Credits: 3 hours
MGMT 6140 - Supply Chain and Process Management Credits: 3 hours
MGMT 6170 - Leading People and Organizations Credits: 3 hours
MGMT 6200 - ERP System Configuration Credits: 3 hours
MGMT 6500 - Managing Change Credits: 3 hours
MGMT 6800 - Management of Innovation and Technology (MOIT) Credits: 3 hours
MKTG 6130 - Customer-Driven Marketing Management Credits: 3 hours
MKTG 6140 - Supply Chain and Process Management Credits: 3 hours
MKTG 6760 - Multinational Marketing Management Credits: 3 hours

To summarize the requirements:
1. Minimum of 30 hours of graduate course work.
2. Minimum of 15 hours of graduate course work in accountancy.
3. Minimum of 9 hours of non-accounting graduate courses.
4. Minimum of 24 hours at the 6000-level or above.
5. Minimum of 39 semester hours of accounting in graduate and undergraduate course work.

Professional Certification Examinations
A graduate of the Haworth College of Business with a Master of Science in Accountancy will be qualified to take many of the professional certification examinations. Since the qualifying rules differ by state and are subject to change, the student is responsible for determining if additional criteria need to be met for a specific exam or state. The program is designed to meet the AICPA's 150-hour requirement. A student without a degree in business must complete 24 credit hours of business courses to meet the 150-hour requirement.

The current requirements to sit for the CPA exam in Michigan include 24 hours of accounting, including auditing. The course work also must include a study in systems and governmental accounting.

Business Information Systems

Mike Tarn, Chair
Main Office: 3310 Schneider Hall
Telephone: (269) 387-5409
Fax: (269) 387-5710

Beth Ernst
Bernard Han
Pairin Katerattanakul
Alan Rea

Certificate Program in Information Security: Computer Information Systems
The Information Security: Computer Information Systems Graduate Certificate is an interdisciplinary online practitioner-based offering concentrating in the growing field of information security. This certificate in comprised of five courses offered by the Business Information Systems and Computer Science departments. Two core courses are required and then students must select one of the specialized tracks to complete the certificate.

Students working towards the graduate certificate must be admitted into the graduate college as a non-degree seeking student. Students must have a bachelor degree in either a technical discipline or an appropriate discipline related to their chosen track. Students with other bachelor degrees and professional experience will also be considered.

The graduate certificate is offered completely online. Students do not need to attend classes at the main or any regional campuses in order to earn the certificate. Graduate credit is earned for all passing classes.

Required Courses (15 credit hours)

Core Courses (6 credit hours)
The following two courses must be completed by all students.
CIS 5710 - Information Security Fundamentals Credits: 3 hours
CS 5710 - Network Security Fundamentals Credits: 3 hours

Tracks (9 credit hours)
Students must choose a track and successfully complete all courses from either the Information Security Management Track or the Secure Software and Engineering Track to earn the certificate.

Information Security Management
CIS 6710 - Information Assurance and Security Credits: 3 hours
CIS 6720 - IT Governance and Service Management Credits: 3 hours
CIS 6730 - Cyberwarfare, Cybercrime, and Digital Forensics Credits: 3 hours

Secure Software and Engineering
CS 5730 - Secure System Administration Credits: 3 hours
CS 5740 - Web Application Security Credits: 3 hours
CS 5750 - Secure Software Development Credits: 3 hours

Finance and Commercial Law

Jim DeMello, Chair
Main Office: 3290 Schneider Hall
Telephone: (269) 387-5720
Fax: (269) 387-5839

Finance Area
David Burnie
C. R. Krishna-Swamy
Ali Metwalli
Craig Peterson
Judith Swisher
Devrim Yaman

Law Area
Thomas Edmonds
Norman Hawker

Management

Robert Landeros, Chair
Main Office: 3390 Schneider Hall
Telephone: (269) 387-5860
Fax: (269) 387-5710

Kyle Brink
Satish Deshponde
David Flanagan
Melissa Intindola
Douglas Lepisto
Derrick McIver
Laurel Ofstein
Timothy Palmer
Jennifer Palthe
Thomas Scannell
Christina Stamper
Bret Wagner
Xiaodan Wang

Marketing

Mushtaq Luqmani, Chair
Main Office: 3210 Schneider Hall
Telephone: (269) 387-6133
Fax: (269) 387-6225

Karen Lancendorfer
Steven Newell
Ann Veeck

Interdisciplinary Programs – Haworth College of Business

Master of Business Administration

MBA Program Office
Room 2320, Schneider Hall

The Master of Business Administration (MBA) is an evening program designed to broaden the functional business knowledge and strengthen the leadership skills of working professionals as well as international students seeking to study business in the United States. It is also suitable for individuals with limited work experience who plan to use the MBA as a foundation from which to begin or resume their careers. The program seeks highly motivated college graduates who will bring their personal values, experiences, and interests to the classroom.

The MBA program consists of nine required core courses in the functional areas of business plus three elective courses that suit the interests of the student. The program of study may be completed in two years although students with full-time employment may take up to six years to complete the program.

Admission Requirements
Admission to the MBA Program is based on a combination of undergraduate grade point average, score on the Graduate Management Admission Test (GMAT), references, and work experience. To be admitted, applicants must have at least 1,050 points based on this formula: 200 times the last 60 hour undergraduate GPA plus GMAT score. The GPA must be a minimum of 2.5 for the last 60 hours in an undergraduate program, and the GMAT score must be a minimum of 450 or an equivalent GRE score. Information on the GMAT may be found at www.mba.com.

Recent scores of the Graduate Records Examination (GRE) are acceptable. Equivalent GRE test scores can be used to meet minimum GMAT score requirements and can be used in formula calculations for admission purposes. See www.ets.org for information on conversion of a GRE score to a predicted GMAT score.

International students must have a bachelor's degree with an acceptable grade point average from an educational institution approved by the Haenicke Institute for Global Education.

In addition, international students whose native language is not English must demonstrate proficiency in the English language by taking the TOEFL examination. Those scoring less than 213 on the computer form of the TOEFL examination may be required to participate in English language programs offered by the Center for English Language and Culture for International Students (CELCIS) prior to beginning the MBA program. Information on CELCIS may be found at www.wmich.edu/celcis.

Waiver of GMAT
The GMAT requirement may be waived for:

1. Applicants who hold a graduate professional degree from an educational institution approved by Western Michigan University.
2. Applicants admitted to WMU's School of Medicine MD program.
3. Applicants with substantial professional work experience who meet both of the following criteria:

- Minimum undergraduate GPA requirements (2.5 or higher in the last two years of an accredited undergraduate degree program); and
- seven or more years of substantial, full-time, managerial work experience which has occurred within ten years prior to the date of program application (including military and entrepreneurial experience). See GMAT Waiver Application for additional information regarding managerial work experience requirements.

Requests for a GMAT WAIVER based on substantial managerial work experience must be approved by the Haworth College of Business Graduate Programs Council. Completion of the petition to waive the GMAT Exam is required, and satisfaction of the above criteria does not constitute an automatic waiver.

Proficiency in Basic Skills
All applicants must provide evidence of proficiency in the following four basic skills: computer literacy, quantitative analysis, statistics, and writing in Academic communication.

1. The computer literacy requirement is usually met by undergraduate course work or work experience requiring computer usage.
2. The quantitative analysis requirement is considered met if the student has earned an undergraduate business degree (BBA) from a university or college with an AACSB accredited program or has satisfactorily completed a college level undergraduate mathematics course in finite mathematics, precalculus, or calculus.
3. The statistics requirement is considered met if the applicant has satisfactorily completed an undergraduate level statistics course at the sophomore level or higher.
4. The Academic Communication requirement may be met by appropriate junior or senior level undergraduate course work. Graduate students whose native language in not English and who do not have a degree from a U.S. institution must take the Academic Communication Placement Test at the beginning of their first semester of enrollment. This test is administered by the Center for English Language and Culture for International Students. It must be taken in addition to TOEFL (Test of English as a Foreign Language), which is taken as part of the admission process. A student who does not pass this examination is assigned to the Academic Communication for Business Purposes course – BCM 6050. This course must be completed during the first semester of study. Graduate students whose native language is not English but have an undergraduate degree from a U.S. institution will not be required to take the placement test or the course.

Appeals and Requests for Exceptions
Appeals and requests for exceptions to the admission standards must be made in writing to the MBA advisor, Room 2320 Schneider Hall, Haworth College of Business, Western Michigan University, Kalamazoo, MI 49008. All appeals and requests for exceptions will be reviewed by the Haworth College of Business Graduate Programs Council.

Program Requirements
The MBA program includes five components: Prerequisites/Basic Core, Business Context, Functional Core, Concentration Electives, and Integrative Business Solutions.

1. Prerequisites/Basic Core (12 hours)
In order to provide students with the background of the common body of knowledge in business and administration, study in the areas of Accountancy, Economics, Finance, and Law is required. These requirements are fulfilled if the applicant completed an undergraduate business degree and if the applicant completed the BBA prerequisite equivalents with a "B" average in the appropriate class(es). These waivers are on a course-by-course basis for the regular MBA program.
ACTY 6010 – Accountancy Credits: 3 hours
ECON 6010 - Basic Economic Analysis Credits: 3 hours
FIN 6020 - Corporate Finance Credits: 3 hours
LAW 6040 - Legal, Regulatory, and Political Aspects of Business Credits: 3 hours

2. Business Context (9 hours)
BUS 6150 - Global Business Credits: 3 hours
BUS 6160 - Law, Ethics and Corporate Social Responsibility Credits: 3 hours
BUS 6180 - Information Technology Management Credits: 3 hours

3. Functional Core (15 hours)
ACTY 6110 - Managerial Accounting Credits: 3 hours
FIN 6120 - Financial Management Credits: 3 hours
MGMT 6170 - Leading People and Organizations Credits: 3 hours
MKTG 6130 - Customer-Driven Marketing Management Credits: 3 hours
And Either:
MGMT 6140 - Supply Chain and Process Management Credits: 3 hours OR
MKTG 6140 - Supply Chain and Process Management Credits: 3 hours

4. Integrative Business Solutions (3 hours)
BUS 6990 – Strategic Management Credits: 3 hours

5. Electives/Concentration (9 hours)

Nine credits of elective courses are required. Students may select any 6000+ level courses offered by the Haworth College of Business to meet the elective requirement as long as it is not a course listed in the Admission requirements (BCM 6050) in sections 1 through 4 above. Students may take one course at the 5000 level from the Haworth College of Business to meet this elective/concentration requirement. Students who select courses from more than one discipline will receive a General Business MBA. Students may choose courses in a specific discipline to receive an MBA with a concentration. Concentrations are available in Aviation, Computer Information Systems, Finance, Health Care, International Business, Management, or Marketing. Students pursuing a concentration in Marketing must take MKTG 6710 as one of the three electives. **Students are considered to be pursuing a General Business MBA until they notify the MBA advisor of a selected concentration. This is an important step to ensure the area of concentration is indicated on transcripts.**

Students are encouraged to complete at least four of the eight required Business Context and Functional Core courses before taking electives.

The following courses may be used as elective/concentration courses:

Accountancy
ACTY 6100 - Financial Accounting and Reporting Credits: 3 hours
ACTY 6170 - Attestation and Assurance Services Credits: 3 hours
ACTY 6210 - International Accounting Credits: 3 hours
ACTY 6220 - Seminar in Management Accounting Credits: 3 hours
ACTY 6240 - Business Tax Planning Credits: 3 hours
ACTY 6270 - Accounting Fraud Credits: 3 hours
ACTY 6280 - Financial Statement Analysis Credits: 3 hours
ACTY 6430 - Selected Topics in Accountancy II Credits: 3 hours

Aviation
AVS 6290 - Global Aviation Management and Policies Credits: 3 hours
AVS 5100 - Safety Management Systems in Aviation Credits: 3 hours
AVS 6270 - Airline Supply Chain Management Credits: 3 hours

Business
BUS 6960 - Study Abroad Seminar Credits: 1 to 6 hours

Computer Information Systems
CIS 5550 - Topics in Computer Information Systems Credits: 3 hours
CIS 6000 - Seminar in Computer Information Systems Credits: 3 to 4 hours
CIS 6300 - ERP Data Management Credits: 3 hours
CIS 6400 - Business Analytics Credits: 3 hours
CIS 6620 - ERP Project Management Credits: 3 hours
CIS 6640 - Predictive Analytics and Data Mining Credits: 3 hours
CIS 6660 - Enterprise Information Security Management Credits: 3 hours

Finance and Commercial Law
FCL 6000 - Seminar in Business Credits: 3 hours

Finance
FIN 5530 - Student Managed Investment Fund Credits: 3 hours
FIN 6190 - Financial Markets and Institutions Credits: 3 hours
FIN 6219 - Essentials of Health Care Financial Management Credits: 3 hours
FIN 6220 - Financial Restructuring Credits: 3 hours
FIN 6250 - Financial Strategy Credits: 3 hours
FIN 6420 - International Finance Credits: 3 hours
FIN 6450 - Computer Applications in Finance Credits: 3 hours
FIN 6540 - Investment Analysis and Management Credits: 3 hours
FIN 6910 - Seminar in Finance Credits: 3 hours

FIN 6980 - Readings and Research in Finance Credits: 1 to 3 hours

Law
LAW 6980 - Readings and Research in Law Credits: 1 to 3 hours

Management
MGMT 6000 - Seminar in Management (Topic) Credits: 3 hours
MGMT 6100 - International Management Credits: 3 hours
MGMT 6200 - ERP System Configuration Credits: 3 hours
MGMT 6410 - Business Venturing Credits: 3 hours
MGMT 6500 - Managing Change Credits: 3 hours
MGMT 6580 - International Human Resource Management Credits: 3 hours
MGMT 6800 - Management of Innovation and Technology (MOIT) Credits: 3 hours

Marketing
MKTG 6610 - Healthcare Marketing Credits: 3 hours
MKTG 6630 - Electronic Marketing Credits: 3 hours
MKTG 6650 - Global Negotiation Credits: 3 hours
MKTG 6700 - Sales Leadership Credits: 3 hours
MKTG 6710 - Applied Marketing Research Credits: 3 hours
MKTG 6730 - New Product Management Credits: 3 hours
MKTG 6740 - Integrated Marketing Communications Strategy Credits: 3 hours
MKTG 6760 - Multinational Marketing Management Credits: 3 hours
MKTG 6770 - Buyer Behavior Credits: 3 hours
MKTG 6780 - Special Topics in Marketing Credits: 3 hours
MKTG 6800 - Global Sourcing and Logistics Credits: 3 hours
MKTG 6970 - Special Problems in Marketing Credits: 3 hours

6. Students with an undergraduate major or minor in a business discipline may be allowed to substitute a fourth concentration elective for the MBA core course offered by their undergraduate area of study. Students must consult with the MBA advisor to approve the substitute course. The undergraduate majors and the core courses which could be replaced with a higher level elective are:
ACTY 6110 - Managerial Accounting Credits: 3 hours
BUS 6180 - Information Technology Management Credits: 3 hours
FIN 6120 - Financial Management Credits: 3 hours
MGMT 6170 - Leading People and Organizations Credits: 3 hours
And select either:
MGMT 6140 - Supply Chain and Process Management Credits: 3 hour OR
MKTG 6140 - Supply Chain and Process Management Credits: 3 hours

Degree Partnership Program: Doctor of Medicine and Master of Business Administration (Healthcare concentration)
Western Michigan University School of Medicine and Haworth College of Business.

Western Michigan University School of Medicine (WMed) and the Haworth College of Business of Western Michigan University (HCoB) cooperate in the delivery of a Doctor of Medicine and a Master of Business Administration (Healthcare concentration) degree in Kalamazoo, Michigan. Both WMed and HCoB offer their existing MD and MBA degrees independently and cooperate in a manner that will permit eligible students in HCoB's MBA program to incorporate coursework from WMed's MD program.

General Provisions

All degree requirements of WMed and HCoB are unaffected by the degree partnership program. Each program admits students, conducts graduation audits, and exercises control over its respective academic programs

independently. Admission to either the MBA degree or the MD degree does not guarantee admission to the other program.

Academic Credit

Applicants for the dual-degree program must meet all admission requirements and standards of WMed for the MD degree, and all admission requirements and standards of the Haworth College of Business for the MBA degree. Applicants for the dual-degree program may apply at the time of their initial application to WMed, or may apply after acceptance to the School of Medicine by the end of year 2 of the MD program. Applicants may apply to the dual-degree program through the Early Decision Program of the School of Medicine, and will be notified of the school's admission decision by October 1.

HCoB will accept up to six semester hours of Credit earned by a student in good standing at WMed from the following courses:

MEDU 5422 Profession of Medicine 4 Credits: 2 hours
MEDU 5440 Profession of Medicine 6 Credits: 1 hour
MEDU 7850 Medical Research Credits: 3 hours

Students need a minimum of nine credits of healthcare related graduate courses approved by the MBA office to get a concentration in healthcare. The foundation of medicine (year one and two) and research project (year five) component of the MD program will enable Medical School students to meet partial (6 of 9 credits) requirements for a concentration in healthcare. Students in the dual program may choose to take additional healthcare related courses or courses from the HCoB departments of Accounting, Computer Information Systems, Finance, Management, and Marketing. Students may also take approved healthcare courses from other departments.

Degree Partnership Program: Juris Doctor and Master of Business Administration
Thomas M. Cooley Law School and Western Michigan University

The Haworth College of Business of Western Michigan University (HCoB) and the Thomas M. Cooley Law School (TMCLS) will cooperate in the delivery of a Master of Business Administration and a Juris Doctor degree. Both schools will offer their existing JD and MBA degrees independently and will cooperate in a manner that will permit eligible students in one institution's degree program to incorporate course work from the other institution's program.

General Provisions

All degree requirements of TMCLS and HCoB are unaffected by the degree partnership program. Each institution will admit students, will conduct graduation audits, and will exercise control over its respective academic programs independently. Admission to either the MBA degree or the JD degree does not guarantee admission to the other program.

HCoB students are eligible for course waiver or transfer of courses taken at the partner institution if the students are in good standing at their respective institution. TMCLS may transfer credit and HCoB may waive individual courses (of their respective programs) subject to the approved list of courses below with written advisor approval for each student. Grades for waived courses are not computed as part of the GPA, but a reduction in total program hours will occur.

Academic Credit

Individuals who plan to participate in the degree partnership program may apply for admission to both programs simultaneously or while an active student of either college. They are encouraged to do so in a manner which permits timely completion of both programs and which meet other requirements. Credit may be transferred or waived between the schools, specifically waived in the case of HCoB only if a student has matriculated in both schools. TMCLS may grant transfer credit from HCoB for purposes of the degree participation program only if a student begins and completes an eligible HCoB-WMU transfer course after matriculation at TMCLS.

Students who have matriculated in the degree participation program will sign a declaration of intent to participate and submit it to their academic advisors at both schools before registering for the first elective course in either program.

Students who have matriculated in the degree participation program may begin taking courses in the second program according to the following provisions: A TMCLS JD student may begin taking MBA courses at HCoB-WMU after satisfactorily completing 27 credit hours at TMCLS. An HCoB MBA student may begin taking JD courses after satisfactorily completing 9 credit hours in the MBA program at the Haworth College of Business of WMU.

Neither school can confer its degree upon students participating in the degree partnership program until six acceptable credits are transferred from or waived by the other institution. In general, completion of the second degree should not extend beyond twelve months of conferral of the first degree, subject to the WMU Graduate College requirement of a six-year maximum time period for master degree completion.

TMCLS will accept six semester hours of credit earned by a student in good standing at WMU in any combination of the following HCoB courses:

ACTY 6240 – Business Tax Planning Credits: 3 hours
BUS 6150 – Global Business Credits: 3 hours
BUS 6160 – Law, Ethics and Corporate Social Responsibility Credits: 3 hours
FIN 6420 – International Finance Credits: 3 hours
MGMT 6410 – Business Venturing Credit: 3 hours
MKTG 6130 – Customer-Driven Marketing Management Credit: 3 hours
MKTG 6770 – Buyer Behavior Credits: 3 hours

or other courses deemed appropriate for transfer by the department or program advisor for other 6000-level courses.

In addition, if LAW 6040 is required in the program of an MBA student, HCoB-WMU will accept three semester hours of credit earned by a student in good standing at TMCLS in any of the following TMCLS courses:

Civil Procedure II Credits: 3 hours
Constitutional Law I Credits: 3 hours
Contracts I Credits: 3 hours
Contracts II Credits: 3 hours

as a waiver for LAW 6040 at HCoB-WMU

HCoB will accept six semester hours of credit earned by a student in good standing at TMCLS in any combination of the following TMCLS courses:

Secured Transactions Credits: 3 hours
Taxation Credits: 3 hours
Bankruptcy Credits: 3 hours
Business Planning Credits: 3 hours
Federal Administrative Law Credits: 3 hours
Sales Credits: 3 hours
Alternative Dispute Resolution Credits: 2 hours
Collective Bargaining Credits: 2 hours
Comparative Law Credits: 2 hours
Computer Law Credits: 2 hours
Consumer Law Credits: 2 hours
Deferred Compensation and Pension Planning Credits: 2 hours
International Business Law Credits: 2 hours
International Financial Regulation Credits: 2 hours
International Human Rights Law Credits: 2 hours
International Trade Law Credits: 2 hours
Labor Law Credits: 2 hours
NAFTA Credits: 2 hours
Patent Law Credits: 2 hours
Products Liability Credits: 2 hours

Securities Regulation Credits: 2 hours

Specifically, as part of the six credit hours of elective courses waived, HCoB will accept the successful completion, jointly, of (1) Business Organizations and (2) Professional Responsibility at TMCLS as equivalent to BUS 6160 at WMU.

Certificate in Supply Chain Management

The mission of the Graduate Certificate Program in Supply Chain Management is to develop an individual who understands the significance of the supply chain to the overall success of an organization and has the technical and analytical skills necessary to excel in any supply chain position.

The program consists of six courses, two of which are required and four of which are elective choices to match the career interests of the student.

Admission Requirements

To be admitted to the program, students must have an undergraduate baccalaureate degree from an accredited institution and two years of work experience. Based on the student's background, they may be required to take MGMT/MKTG 6050 - Business and Supply Chain Basics to develop the required skills and knowledge necessary to begin coursework in the program. Students will admitted to the program based on a review of their academic transcripts and professional work experience.

Program Requirements

The Graduate Certification Program in Supply Chain Management consists of the following coursework:

1. Required courses (6 hours)
MGMT 6305 - Supply Chain Management I Credits: 3 hours
or
MKTG 6305 - Supply Chain Management I Credits: 3 hours
AND
MGMT 6315 - Supply Chain Management II Credits: 3 hours
or
MKTG 6315 - Supply Chain Management II Credits: 3 hours

Elective courses (12 hours)

Select four of the following courses:
MGMT 6325 - Process Management and Problem Solving Credits: 3 hours
or
MKTG 6325 - Process Management and Problem Solving Credits: 3 hours
MGMT 6330 - Managing Risk in the Supply Chain Credits: 3 hours
or
MKTG 6330 - Managing Risk in the Supply Chain Credits: 3 hours
ACTY 6340 - Supply Chain Cost Analysis Credits: 3 hours
CIS 6640 - Predictive Analytics and Data Mining Credits: 3 hours
MKTG 6650 - Global Negotiation Credits: 3 hours
MGMT 6200 - ERP System Configuration Credits: 3 hours
AVS 6270 - Airline Supply Chain Management Credits: 3 hours
AVS 6290 - Global Aviation Management and Policies Credits: 3 hours
MKTG 6780 - Special Topics in Marketing Credits: 3 hours
MGMT 6000 - Seminar in Management (Topic) Credits: 3 hours
CIS 6000 - Seminar in Computer Information Systems Credits: 3 to 4 hours

College of Education and Human Development

Ming Li,
Dean

Christopher Cheatham
Associate Dean for Academic Services

Marcia Fetters
Associate Dean and Director of Teacher Education

Academic Departments:
Counselor Education and Counseling Psychology
Educational Leadership, Research and Technology
Family and Consumer Sciences
Human Performance and Health Education
Special Education and Literacy Studies
Teaching, Learning, and Educational Studies

Centers and Offices:
Office of Admissions and Advising
Office of Field Placements
Office of Teacher and Administrator Certification
Center for Counseling and Psychological Services
Merze Tate Grant and Innovation Center
Dorothy J. McGinnis Reading Center and Clinic

Mission
Embracing WMU's goals to be learner centered, discovery driven, and globally engaged, the College of Education and Human Development is committed to:

- Developing exceptional education and human development professionals who positively impact our global society
- Advancing knowledge through teaching, scholarship, creative works, and service
- Enhancing the university and its stakeholders through transformative field experiences and collaborations

Vision
Be the premier choice for a diverse community of education and human development learners by offering a portfolio of regionally, nationally and internationally recognized programs.

Professional Certification (CER, Education)
The Professional Certification program is a non-degree seeking program. The program is intended for certified teachers or school administrators seeking to take graduate-level courses to maintain the professional teaching certificate or seeking an additional teaching endorsement in the State of Michigan.

The Professional Certification is administered by the Office of Teacher and Administrator Certification. Any questions about the program should be directed to that office.

Counselor Education and Counseling Psychology

Patrick Munley, Chair
Main Office: 3521 Sangren Hall
Telephone: (269) 387-5100
Fax: (269) 387-5090

Carla R. Adkison-Johnson
Mary L. Anderson
Mary Z. Anderson
Samuel T. Beasley
Stephanie Burns
Stephen E. Craig
Jennifer Foster
Alan J. Hovestadt
Phillip D. Johnson
Kelly A. McDonnell
Jerry E. McLaughlin
Joseph R. Morris
Glinda Rawls
Eric M. Sauer
Beverly J. Vandiver

Master's Programs

Two master's programs are offered by the Department of Counselor Education and Counseling Psychology: The Master of Arts in Counseling Psychology prepares graduates to be eligible for a limited license as a psychologist in the state of Michigan, the Master of Arts in Counselor Education, with five program options, prepares graduates to be eligible for a license as a professional counselor.

Doctoral Programs

Two doctoral programs are offered by the Department of Counselor Education and Counseling Psychology. The doctoral program in Counseling Psychology leads to a Doctor of Philosophy (Ph.D.) and holds accreditation by the American Psychological Association (APA). The doctoral program in Counselor Education leads to a Doctor of Philosophy (Ph.D.) and is accredited by the Council for Accreditation of Counseling and Related Educational Programs (CACREP).

Admission Requirements

Admission to a specific doctoral program is considered by the appropriate departmental training committee. Applicants should request current admission information from the Office of Admissions and from the department.

A student admitted to a specific doctoral program is expected to follow the policies, procedures, code of ethics, and course requirements for that program. Each student, upon admission to a doctoral program, is assigned a temporary doctoral advisor. Later, as outlined in The Doctoral Handbook, a student selects and requests the appointment of a permanent Doctoral Committee.

The department recognizes the importance of increasing the educational opportunities of racial minority students, as well as the importance of ensuring an increased diversity of role models in the fields represented by its training programs. Therefore, the department strives to create an atmosphere conducive to the concerns of racial minorities and diverse populations, to integrate these concerns into programs and course offerings, and to fulfill its commitment to recruit, admit, support, and graduate a diverse population of students prepared for their chosen careers.

Master of Arts in Counseling Psychology

Advisors: Carla Adkison-Johnson, Mary L. Anderson, Mary Z. Anderson, Samuel Beasley, Stephanie T. Burns, Stephen Craig, Jennifer M. Foster, Kelley Holladay, Alan Hovestadt, Phillip Johnson, Kelly McDonnell, Jerry E. McLaughlin, Joseph Morris, Patrick Munley, Glinda J. Rawls, Eric Sauer, Beverly J. Vandiver, Jennipher Wiebold
Department Office, Room 3521, Sangren Hall.

The Master of Arts in Counseling Psychology provides, beyond the departmental required core course work, a focus on psychopathology, psychological assessment, counseling and psychotherapy theories and practices, and advanced practicum experiences. This program is selected by students seeking limited licensure as a psychologist in the state of Michigan.

Admission Requirements

Admission to the Master of Arts in Counseling Psychology is based upon grade point average, educational background, counseling and/or related experiences, as well as other factors. Prior to consideration by the M.A. Admissions Committee, applicants are required to complete and return a questionnaire prepared by the department. Interviews, letters of recommendation, test scores, and other materials may also be required.

The Department has three different application deadlines for M.A. program admissions during the year: January 15, for ensuing Summer and Fall semesters, May 15, also for the ensuing Fall semester, and September 15 for the following Spring semester. Applicants interested in beginning their graduate master's degree studies in the Fall semester are encouraged to meet the January 15 application deadline. This allows applicants to receive admission offers well in advance of the fall semester. Also, applicants who plan to seek assistantships or campus employment beginning in the fall semester should apply by January 15 to be competitive for such assistance or positions. Applicants must complete a WMU graduate application through Apply Now, the online application system.

Applications materials are available on-line through links on the WMU Office of Admissions and department web pages. Upon admission, each student is assigned an advisor who will assist in preparing a program of study. It is recommended that the program of study, be completed during the first semester or session of enrollment.

The department recognizes the importance of increasing the educational opportunities of racial minority students, as well as the importance of ensuring an increased diversity of role models in the fields represented by its training programs. Therefore, the department strives to create an atmosphere conducive to the concerns of racial minorities and diverse populations, to integrate these concerns into programs and course offerings, and to fulfill its commitment to recruit, admit, support, and graduate a diverse population of students prepared for their chosen careers.

Program Requirements

The counseling psychology program requires a minimum of 48 semester hours of course work, including seven, three-semester-hour, core courses. A curriculum guide for the program is available from the department office or on-line.

Students are expected to work with advisors in order to be informed of policies, course offerings, prerequisites, and applications required for designated courses. A student's performance and progress will be evaluated throughout the program. This process includes "check points," such as the program of study, assignment of a grade below "B" in any course, and final evaluation prior to graduation. The student is referred to the Department's Policy on Retention.

Master of Arts in Counselor Education

Advisors: Carla Adkison-Johnson, Mary L. Anderson, Mary Z. Anderson, Samuel Beasley, Stephanie T. Burns, Stephen Craig, Jennifer M. Foster, Kelley Holladay, Alan Hovestadt, Phillip Johnson, Kelly McDonnell, Jerry E. McLaughlin, Joseph Morris, Patrick Munley, Glinda J. Rawls, Eric Sauer, Beverly J. Vandiver, Jennipher Wiebold
Department Office, Room 3521, Sangren Hall.

The program options leading to a Master of Arts in Counselor Education are designed to prepare individuals for entry level positions in counseling, rehabilitation, and student affairs practice in a variety of educational and non-educational settings. The program options are:

1. Clinical Mental Health Counseling [a, d, f]
2. School Counseling: Elementary [a, b, d]; Secondary [a, b, d]; or School Counselor License, K-12 [a, c, d]
3. College Counseling [a, d]
4. Marriage, Couple, and Family Counseling [a]
5. Rehabilitation Counseling [a, e, g] is offered as a stand alone degree and as part of the Rehabilitation Counseling/Teaching program (RCTM) which is jointly administered by the Department of Counselor Education and Counseling Psychology and the Department of Blindness and Low Vision Studies.

Superscript ([a, b, c, d, e, f]) Definitions

[a] Leads to Michigan license as a professional counselor.
[b] Leads to endorsement as a counselor on a current, valid Michigan teaching certificate.
[c] Prepares students who do not hold a valid Michigan Teaching Certificate for school counselor license recommendation in Michigan.
[d] Accredited by the Council for the Accreditation of Counseling and Related Educational Programs (CACREP)
[e] Accredited by the Council on Rehabilitation Education (CORE)
[f] This option is accredited by the Council for Accreditation of Counseling and Related Educational Programs as a Community Counseling program.
[g] Leads to eligibility for certification by the Commission on Rehabilitation Counselor Certification (CRCC) as a Certified Rehabilitation Counselor (CRC).

Admission Requirements

Admission to one of the options above is based upon grade point average, educational background, counseling and/or related experiences and/or rehabilitation related experiences, as well as other factors. Prior to consideration by the M.A. Admissions Committee, applicants are required to complete and return a questionnaire indicating, among other things, the program option desired. Interviews, letters of recommendation, test scores, and other material may be required.

The Department has three different application deadlines for M.A. program admissions during the year: January 15, for ensuing Summer and Fall semesters, May 15, also for the ensuing Fall semester, and September 15 for the following Spring semester. Applicants interested in beginning their graduate master's degree studies in the Fall semester are encouraged to meet the January 15 application deadline. This allows applicants to receive admission offers well in advance of the fall semester. Also, applicants who plan to seek assistantships or campus employment beginning in the fall semester should apply by January 15 to be competitive for such assistance or positions. Applicants must complete a WMU graduate application through Apply Now, the online application system.

Application materials are available on-line through links on the WMU Office of Admissions and department webpages. Upon admission, each student is assigned an advisor who will assist in preparing a program of study. It is recommended that the program of study be completed during the first semester or session of enrollment.

The department recognizes the importance of increasing the educational opportunities of racial minority students, as well as the importance of ensuring an increased diversity of role models in the fields represented by its training programs. Therefore, the department strives to create an atmosphere conducive to the concerns of racial minorities and diverse populations, to integrate these concerns into programs and course offerings, and to fulfill its commitment to recruit, admit, support, and graduate a diverse population of students prepared for their chosen careers.

Program Requirements

Program options in Clinical Mental Health Counseling, and Marriage, Couple and Family Counseling require a minimum of 60 semester hours of course work. Program options in School Counseling and College Counseling require a minimum of 48 semester hours of course work. The program option in Rehabilitation

Counseling requires a minimum of 53 semester hours of course work. Curriculum guides for the program options are available from the department office or online at wmich.edu/cecp/student-resources.

Students are expected to work with advisors in order to be informed of policies, course offerings, prerequisites, and applications required for designated courses. A student's performance and progress will be evaluated throughout the program. This process includes "check points," such as the program of study, assignment of a grade below "B" in any course, and final evaluation prior to graduation. The student is referred to the Department's Policy on Retention.

The Clinical Mental Health Counseling program incorporates coursework in research methods, group dynamics, tests and measurement, counseling theory, counseling techniques, professional issues and ethics, multicultural counseling, lifespan development, career development, psychopathology, causes of substance abuse, recovery oriented systems of care and foundations of clinical mental health counseling. The program includes a 600-hour internship at a clinical mental health setting which offers opportunities to interact with professionals from multiple disciplines. Graduates of this program are prepared to work in a variety of professional counseling settings. This option leads to license as a professional counselor.

Programs in School Counseling (Elementary, Secondary, or School Counselor License) incorporate courses emphasizing counseling theory and practice, ethics, testing/appraisal, career development, and psychoeducational consultation. In addition, students desiring school counselor certification will elect courses related to the administration of pupil personnel services in elementary and/or secondary schools. A license as a professional counselor may be earned through this option.

The College Counseling program is designed to prepare counselors to work in post-secondary educational settings (universities, four-year colleges, community colleges and technical institutes/colleges). The College Counseling option accents college student development, individual and group counseling, ethics, and foundations of college counseling. The program includes a 600 hour supervised counseling internship experience in a college setting. This option leads to licensure as a professional counselor.

The Marriage, Couple and Family Counseling option is offered in collaboration with the Department of Family and Consumer Sciences. In addition to the core counseling courses, this 60-hour program emphasizes an understanding of the issues faced by contemporary couples and families and a family systems approach to the conceptualization and treatment of couples and families. The program includes a 600-hour internship at a community setting in which students have adequate exposure to couple and family cases. Graduates of this program are prepared to work with individuals, couples and families in a variety of professional counseling settings. This option leads to licensure as a professional counselor. Working with an advisor, the option can also lead to licensure as a marriage and family therapist.

The Rehabilitation Counseling option is a 53 credit hour program designed to prepare generalist rehabilitation counselors for employment in vocational rehabilitation settings serving persons with disabilities. The rehabilitation counseling program incorporates coursework in small'n'research design and analysis, services for persons with disabilities, computer technology in rehabilitation, job development and placement, psychosocial aspects of disability, medical and functional aspects of disability, and foundations of rehabilitation counseling. The program includes a 600 hour supervised rehabilitation counseling internship in a vocational rehabilitation employment setting. This options leads to licensure as a professional counselor and eligibility for national rehabilitation counselor certification. The rehabilitation counseling program is also offered in conjunction with the Master of Arts in Vision Rehabilitation Therapy as a dual Master of Arts degree program in rehabilitation counseling specializing in blindness and low vision. The Rehabilitation Counseling/Teaching (RCTM) dual degree program is a 76 credit hour program. Upon completion of the RCTM program, the individual earns a Master of Arts in Counselor Education Rehabilitation Counseling (CERM) and a Master of Arts in Vision Rehabilitation Therapy. In the Apply Now application system, please apply for the Masters of Arts in rehabilitation counseling (CERM), by selecting Counselor Education: Rehabilitation Counseling. To apply for the dual Master of Arts degrees in rehabilitation counseling/teaching (RCTM) select Counselor Education: Rehabilitation Teaching.

Doctor of Philosophy in Counseling Psychology

The doctoral program in counseling psychology is based on a philosophy that theory, research, and practice are interdependent and complementary dimensions of professional education in a scientist-practitioner training model. The educational curriculum and practical experiences of the program are designed to ensure competency in all three dimensions and to facilitate their integration in the development of a professional identity. Consistent with these goals, the curriculum in counseling psychology consists of course work and related experiences in four broad areas: 1) the science of psychology, 2) specialization in counseling psychology, 3) counseling and psychotherapy, and 4) research. The program recognizes that counseling psychologists may be employed in a variety of professional settings such as academic departments, college and university counseling centers, mental health agencies, private practices, and business and industry. Consequently, the program provides broad-based training appropriate to accommodate the potentially diverse career interests of its graduates.

Training typically fulfills expectations for psychologist licensure/certification eligibility. The program is accredited by the American Psychological Association and is designated as a doctoral program in psychology by the Council for the National Register of Health Service Providers in Psychology.

Program Requirements

The credit hour requirements and the course work for the Counseling Psychology Program include:

1. Basic scientific core (30 hours)
    a. Research methods (6 hours)
    b. Statistics (6 hours)
    c. Biological basis of behavior (3 hours)
    d. Cognitive-affective basis of behavior (3 hours)
    e. Social basis of behavior (3 hours)
    f. Individual behavior and human development (6 hours)
    g. History and systems of psychology (3 hours)
2. Specialization in Counseling Psychology (42 hours)
    a. Counseling Psychology (24 hours)
    b. Human Assessment (6 hours)
    c. Supervised Practica (12 hours)
3. Recommended Electives (3 hours)
4. Doctoral Dissertation (12 hours)
5. Pre-doctoral Internship (4 hours)

Total Hours 91

Counseling Psychology students are expected to demonstrate competencies in psychological theory, practice, and research by passing a series of doctoral comprehensive examinations in the following areas: 1) counseling psychology information and knowledge and 2) professional work sample. Students must also meet the general residency requirement for doctoral students of one academic year (two consecutive semesters) of full-time study on campus.

Doctor of Philosophy in Counselor Education

The doctoral program in Counselor Education is designed to provide advanced –level preparation for counselors in various mental health and school settings as well as preparing counselors for the counselor education professorate in colleges and universities. Preparing counselors to work as counselor educators and supervisors is the program's highest priority. Doctoral students pursuing this degree are expected to demonstrate 1) a wide range of individual and group counseling skills; 2) a sound theoretical foundation in counseling; 3) teaching and supervision competencies; 4) advanced multicultural counseling skills; 5) research skills; 6) competencies associated with being an educational leader, and 7) an understanding of academic program development, curriculum and administration. Students are expected to involve themselves in appropriate activities of the Department, College, University, and of relevant professional associations. The doctoral program in Counselor Education is not intended to meet the educational requirements of those who seek to be licensed psychologists. It assumes that applicants have or are about to complete their master's degree in counseling or a closely related field. Persons with a master's degree in a related field may be asked to complete an additional masters degree in counseling.

Program Requirements

All students enrolled in this doctoral program must complete the following set of requirements in addition to course work related to a particular specialty:

1. Doctoral Core (30 hours)
    a. Professional Seminar Counselor Education (3 hours)
    b. Advanced Counseling Theory and Practices (3 hours)
    c. Supervision in Counseling & Psychotherapy (3 hours)
    d. Doctoral Practicum: Clinical Supervision (4 hours)
    e. Doctoral Practicum in Counselor Education (4 hours)
    f. College Teaching in Counseling (3 hours)
    g. Vocational Development Theory (3 hours)
    h. Advanced Multicultural Counseling (3 hours)
    i. Internship in Counselor Education (4 hours)
2. Scientific Inquiry Core (27 hours)
    a. Research Design and Analysis (6 hours)
    b. Qualitative Research (3 hours)
    c. Elective in Research Design or Data Analysis (3 hours)
    d. Communication Skills Research Tool Competency
    e. Dissertation Seminar (3 hours)
    f. Doctoral Dissertation (12 hours)
3. Emphasis (12 hours)

Courses focused around a theme or particular interest approved by the student's doctoral committee. These emphases may include, but are not limited to: School Counseling; Clinical Mental Health Counseling; College Counseling; Marriage, Couple and Family Counseling.

Counselor Education doctoral students are required to demonstrate professional competencies through supervised experiences. These experiences include research, teaching and counseling. All doctoral candidates must pass a comprehensive examination over doctoral course work before admission to candidacy. The doctoral committee is responsible for the development and evaluation of the doctoral comprehensive examination. Students must also meet the general residency requirement for doctoral students of one academic year (two consecutive semesters) of full-time study on campus.

Educational Leadership, Research and Technology

Donna Talbot, Chair
Main Office: 3571 Sangren
Telephone: (269) 387-3896

Brooks Applegate
Eric Archer
Andrea Beach
Louann Bierlein-Palmer
Walter Burt
Dae Seok Chai
Regina Garza Mitchell
Brett Geier
Wanda Hadley
Brian Horvitz
Joseph Kretovics
Dennis McCrumb
Gary Miron
Sharon Peterson
Sue Poppink
Patricia Reeves
Jianping Shen
Jessaca Spybrook

The Educational Leadership, Research and Technology Department offers a number of graduate degrees focused on preparing leaders and researchers for a variety of public and private organizations. A primary focus of all degrees is to produce a diverse academic and professional community of ethically engaged and intellectually active scholars and scholar-practitioners.

Within the Educational Leadership area, three graduate degrees and one certificate are offered. The Masters of Arts in Educational Leadership prepares students for entry and mid-level leadership positions in K-12, higher education, and organizational settings via five areas: (1) K-12 School Principal Leadership; (2) K-12 Teacher Leadership; (3) K-12 School Principal Leadership and Interscholastic Athletic Administration; (4) Educational and Global Leadership; and (5) Higher Education and Student Affairs Leadership. The Educational Specialist in Educational Leadership focuses on preparation for central office K-12 leadership positions, while the Doctor of Philosophy in Educational Leadership is targeted toward upper leadership positions within the areas of K-12, Higher Education, Career Technical Education, or other environments engaged in education or adult learning. The Certificate Program in Higher Education and Student Affairs is designed to enhance the work or current professionals in student affairs or related positions.

Within the Evaluation, Measurement, and Research area, two graduate degrees are offered. Graduates from the Master of Arts in Evaluation, Measurement, and Research are qualified to serve in a staff position in evaluation, testing, or research units in school or non-school settings, or in local, state, or federal government agencies. Those receiving the Doctor of Philosophy in Evaluation, Measurement, and Research are prepared to serve as leaders in such organizations, and/or to obtain faculty positions within evaluation, measurement, and research programs at institutions of higher education.

Within the Educational Technology area, an advanced certificate program is offered, as well as one graduate degree. Both the Certificate Program in Educational and Instructional Technology and the Master of Arts in Educational and Instructional Technology prepare students to serve as technology leaders within various organizations.

The Master of Arts in Organizational Change Leadership is a graduate program designed to help develop leading-edge practitioners who can demonstrate worthwhile organizational and individual performance results. It is designed

for persons seeking entry into, or advancement in, a career in staff development, organizational learning and performance, and/or employees training in business, government, education, and healthcare settings.

Master of Arts in Educational Leadership

Advisors: D. Eric Archer, Andrea Beach, Louann Bierlein Palmer, Walter Burt, Brett Geier, Regina Garza Mitchell, Wanda Hadley, Joseph Kretovics, Ramona Lewis, Nancy Mansberger, Dennis McCrumb, Sue Poppink, Patricia Reeves, Jianping Shen, and Donna Talbot
Room 3571 Sangren Hall.

The Department of Educational Leadership, Research and Technology offers a Master of Arts in Educational Leadership with concentrations in five areas: (1) K-12 School Principal Leadership; (2) K-12 Teacher Leadership; (3) K-12 School Principal Leadership and Interscholastic Athletic Administration; (4) Educational and Global Leadership; and (5) Higher Education and Student Affairs Leadership.

The master's program prepares leaders for a variety of roles in private and public settings. Each concentration includes a leadership core, a specialty core, and a capstone experience. A Performance-Driven Leadership model is used within this program that emphasizes the transfer of theory into practice. Students actively engage in a number of activities while exploring effective leadership constructs.

Persons who wish to apply to the Educational Leadership master's are urged to review the application requirements found at www.wmich.edu/leadership/academics/ed-leadership/master/admissions through this website, applicants will find a link to the online application system, Apply Now. Satisfactory completion of courses prior to admission to a Department program does not guarantee admission.

K-12 School Principal Leadership, 30 hours

This concentration is designed to prepare students for leadership roles as building principals. Students who complete this concentration will be recommended to receive, from the state, the Administrator Certificate, with the Elementary/Secondary Administrator K-12 Building Endorsement.

1. Leadership Core
The required courses in the leadership core include:
EDLD 6020 - Educational Leadership, Systems and Change Credits: 3 hours
EDLD 6300 - Data-Informed Decision-Making, Research and Evaluation Credits: 3 hours
EDLD 6791 - Educational Leadership Masters Seminar Credits: 1 hour
EDLD 6793 - Principal Internship I Credits: 3 hours
EDLD 6794 - Principal Internship II Credits: 2 hours

2. Specialty Core
Courses required within the specialty core include:
EDLD 6610 - School Law & Ethics Credits: 3 hours
EDLD 6620 - School Business Management Credits: 3 hours
EDLD 6640 - Curriculum, Instruction and Assessment Leadership Credits: 3 hours
EDLD 6670 - The Principalship Credits: 3 hours
EDLD 6730 - Instructional Leadership and Supervision Credits: 3 hours
EDLD 6740 - School Community Relations and Cultural Competence Credits: 3 hours

K-12 School Principal Leadership and Interscholastic Athletic Administration

This concentration is designed to prepare a student for the leadership role of being a building principal, as well as an athletic director. Pending approval from MDE, students who complete this concentration will be recommended to receive, from the state of Michigan, the Administrator Certificate, with the Elementary/Secondary Administrator K-12 Building Endorsement. Program graduates may be endorsed to receive the administration certification outside of Michigan as well (depending on the certification process in state of residence).

1. Leadership Core

The required courses in the leadership core include:
EDLD 6020 - Educational Leadership, Systems and Change Credits: 3 hours
OR
HPHE 6600 - Governance and Administration of Sport Credits: 3 hours
EDLD 6300 - Data-Informed Decision-Making, Research and Evaluation Credits: 3 hours
EDLD 6791 - Educational Leadership Masters Seminar Credits: 1 hour
EDLD 6793 - Principal Internship I Credits: 3 hours
OR
HPHE 7120 - Professional Field Experience Credits: 1 to 12 hours
(Credits needed: 3 hours)
EDLD 6794 - Principal Internship II Credits: 2 hours
OR
HPHE 7120 - Professional Field Experience Credits: 1 to 12 hours
(Credits needed: 2 hours)

2. Principal Specialty Core
Courses required within the specialty core include:
EDLD 6610 - School Law & Ethics Credits: 3 hours
EDLD 6620 - School Business Management Credits: 3 hours
EDLD 6640 - Curriculum, Instruction and Assessment Leadership Credits: 3 hours
EDLD 6670 - The Principalship Credits: 3 hours
EDLD 6730 - Instructional Leadership and Supervision Credits: 3 hours
EDLD 6740 - School Community Relations and Cultural Competence Credits: 3 hours

3. Interscholastic Athletic Administration Core
Courses required within the Interscholastic Athletic Administration Core include:
HPHE 6640 - Marketing and Sales in Sport Credits: 3 hours
HPHE 6690 - Event and Facility Planning and Management Credits: 3 hours
HPHE 6630 - Ethics in Sport Credits: 3 hours

K-12 Teacher Leadership, 30 hours
This concentration is designed to prepare graduate students for teacher leadership roles in K-12 schools, following national standards for teacher leadership. This may include teachers who do not wish to become administrators, but desire to take on leadership roles that contribute to the improvement and success of K-12 schools through improved student outcomes.

1. Leadership Core
The required courses in the leadership core include:
EDLD 6020 - Educational Leadership, Systems and Change Credits: 3 hours
EDLD 6300 - Data-Informed Decision-Making, Research and Evaluation Credits: 3 hours
EDLD 6791 - Educational Leadership Masters Seminar Credits: 1 hour
EDLD 6792 - Capstone Seminar Credits: 2 hours

2. Specialty Core
Courses required in the specialty core are:
EDLD 6640 - Curriculum, Instruction and Assessment Leadership Credits: 3 hours
EDLD 6730 - Instructional Leadership and Supervision Credits: 3 hours
EDLD 6740 - School Community Relations and Cultural Competence Credits: 3 hours
EDLD 6750 - The Work of Teacher Leaders Credits: 3 hours
EDLD 6760 - How Schools Work: Organization, Finance and Legal Systems Credits: 3 hours
EDT 6410 - Instructional Technology for School Leaders Credits: 3 hours

3. Elective (3 hours) approved by advisor

Educational and Global Leadership, 30 hours
This concentration is designed for graduate students who wish to develop and enhance their educational leadership knowledge and skills for use within organizations that may fall outside of traditional U.S. K-12 or post-secondary educational institutions. It is created for students who would like to make an impact within non-profit, government agencies, foundations, or other organizations that have an educational component. It is also designed for students who desire a more global perspective on educational leadership issues.

1. Leadership Core
The required courses in the leadership core include
EDLD 6020 - Educational Leadership, Systems and Change Credits: 3 hours
EDLD 6791 - Educational Leadership Masters Seminar Credits: 1 hour
EDLD 6792 - Capstone Seminar Credits: 2 hours

2. Specialty Core
Courses within the specialty core are:
EDLD 6650 - Principles and Practices of Adult Learning Credits: 3 hours
EDLD 6890 - Special Topics in Higher Education Seminar Credits: 1 to 4 hours
(Topic: Global Perspectives in Higher Education Credits: 3 hours)
OCL 6410 - Organizational Culture and Globalization Credits: 3 hours
OCL 6430 - Group Dynamics and Team Development in an Age of Globalization Credits: 3 hours
EMR 5400 - Fundamentals of Evaluation, Measurement, and Research Credits: 3 hours
EMR 6420 - Evaluation I: Theory, Methods, and Program Evaluation Credits: 3 hours
EDT 6490 - Instructional Technology Leadership Credits: 3 hours
OLP 6400 - Principles of Human Resources Development Credits: 3 hours

3. Electives (3 hours) approved by advisor

Higher Education and Student Affairs (HESA) Leadership, 39 hours
This concentration is designed to prepare students to be reflective practitioners for entry and mid-level positions in student affairs and other related administrative positions in higher education. This can include positions in admissions, academic advising, residence life, student activities, financial aid, career services, and offices designed to support and retain historically under-served student populations. The concentration emphasizes a scholar-practitioner model to combine a broad-based student development and leadership theory core with required individualized field experiences. Distinctive to HESA is an emphasis on the centrality of diversity and inclusiveness in higher education: one of the ways this is actualized is through a required and individually designed Diversity Cognate.

1. Leadership Core
The required courses in the leadership core are:
EDLD 6020 - Educational Leadership, Systems and Change Credits: 3 hours
EDLD 6791 - Educational Leadership Masters Seminar Credits: 1 hour
EDLD 6792 - Capstone Seminar Credits: 2 hours
EMR 5400 - Fundamentals of Evaluation, Measurement, and Research Credits: 3 hours

2. Specialty Core
Courses within the specialty core are:
EDLD 6510 - Foundation of Student Affairs in Higher Education Credits: 3 hours
EDLD 6530 - The College Student Credits: 3 hours
EDLD 6545 - Higher Education Environments and Administration Credits: 3 hours
EDLD 6548 - Assessment and Accountability in Higher Education and Student Affairs Credits: 3 hours
EDLD 6550 - Intervention Skills for Higher Education Professionals Credits: 3 hours
EDLD 6570 - Equity and Diversity in Higher Education Credits: 2 hours
EDLD 6580 - Field Experience in Higher Education Credits: 3 hours
EDLD 6590 - Higher Education Law and Ethics Credits: 3 hours
Six credits within a required diversity cognate approved by faculty advisor.

Note:
HESA Specialty Core courses are open to the following students: Educational Leadership Higher Education and Student Affairs Masters; Student Affairs in Higher Education Graduate Certificate program; Educational Leadership Higher Education PhD. Others may register with instructor approval.

Master of Arts in Organizational Change Leadership
Advisor: David Szabla and Dr. Dae Seok Chai

The Master of Arts in Organizational Change Leadership is housed in the Department of Educational Leadership, Research and Technology (ELRT). It designed to address one of the most critical and sought after competencies needed in today's organizations- the ability to lead effective change in an age of globalization. Designed for a diverse assemblage of individuals working in a variety of industry sectors (e.g., education, government, health care, military, not-for-profit, for-profit, and management consulting organizations), this competency-grounded program combines research, theory and practice to build the capacity to effectively lead and develop individuals, groups, and organizations in an age of globalization. Substantiated in project-based, experiential and peer-to-peer learning, evidence-based practice, and immediate applicability of concepts, theories, and models to the workplace, this interdisciplinary curriculum offers a strong foundation in organizational change, leadership, culture, learning, group dynamics, and organization diagnosis and consulting. The overarching goal of the program is the development of scholar-practitioners who have the ability to apply scholarly knowledge to lead change in diverse contexts, including domestic and cross-cultural settings. The global emphasis on developing ethical professionals who lead effective change at multiple organizational levels to increase the capacities of their employees and organizations make this a unique and desirable master's program.

The program requires a minimum of 33 credit hours, including 6 credits of elective courses and one individually designed Capstone experience and seminar. Individuals who wish to apply for this program are encouraged to review the application requirements listed on the web page.

Required OCL Courses (15 hours)
OCL 6400 - Foundations in Organizational Change Leadership Credits: 3 hours
OCL 6410 - Organizational Culture and Globalization Credits: 3 hours
OCL 6430 - Group Dynamics and Team Development in an Age of Globalization Credits: 3 hours
OCL 6440 - Large Scale Change and Organizational Design Credits: 3 hours
OCL 6792 - Capstone Seminar in Organizational Change Leadership Credits: 3 hours

Required ELRT Inter Program Courses (12 hours)
EDLD 6020 - Educational Leadership, Systems and Change Credits: 3 hours
EDLD 6650 - Principles and Practices of Adult Learning Credits: 3 hours
EDT 6420 - Instructional Design Credits: 3 hours
EMR 5400 - Fundamentals of Evaluation, Measurement, and Research Credits: 3 hours

OCL Elective Courses (6 hours)
Choose two courses from the list below:
OCL 6890 - Special Topics in Organizational Change and Leadership Credits: 3 hours
EDT 6430 - Fundamentals of Online Learning Credits: 3 hours
EDT 6440 - Instructional Technology Tools and Development Credits: 3 hours
EMR 6420 - Evaluation I: Theory, Methods, and Program Evaluation Credits: 3 hours
EMR 6430 - Evaluation II: Evaluating Products, Personnel and Policy Credits: 3 hours

Certificate Program in Higher Education and Student Affairs (HESA) (minimum of 15 graduate credits)
Advisors: D. Eric Archer, Ramona Lewis, Donna Talbot
Room 3571 Sangren Hall

This Certificate is designed to enhance the work of current professionals in Student Affairs and related positions by providing the theoretical and academic knowledge associated with the field. Applicants to this certificate program must be employed full-time in higher education, or be enrolled in another graduate program and demonstrate commitment to, and experiences, within higher education.

Admissions criteria (see ELRT Department web page for application):

1. A completed Bachelor's Degree with a 3.0 GPA or higher.
2. Rationale and fit for pursuing the certificate (through a two page written statement).
3. Hold a full-time professional position in higher education that is relevant to the certificate being pursued; be enrolled in another graduate program and demonstrate a commitment to, and experiences, within higher education; or have advisor approval.

Courses required to complete the Certificate (minimum of 15 credits):
EDLD 6510 - Foundations of Student Affairs in Higher Education Credits: 3 hours
EDLD 6530 - The College Student Credits: 3 hours
EDLD 6580 - Field Experience in Higher Education and Student Affairs Credits: 3 hours

AND choose two of the following courses in consultation with and approval of Faculty Advisor.
EDLD 6545 - Higher Education Environments and Administration Credits: 3 hours
EDLD 6548 - Assessment and Accountability in Higher Education and Student Affairs Credits: 3 hours
EDLD 6550 - Intervention Skills for Higher Education Professionals Credits: 3 hours
EDLD 6570 - Equity and Diversity in Higher Education Credits: 3 hours
EDLD 6590 - Higher Education Law and Ethics Credits: 3 hours

Note:
Following University and Graduate College policies, individuals who earn the Certificate in HESA may apply to the master's program in HESA Leadership and use the courses completed toward their degree. Additionally, students pursuing the Ph.D. in Higher Education Leadership may complete the certificate as part of their doctoral program.

Specialist in Education in Educational Leadership

Advisors: Walter Burt, Brett Geier, Joseph Kretovics, Nancy Mansberger, Dennis McCrumb, Sue Poppink, Patricia Reeves, Jianping Shen
Room 3571 Sangren Hall.

The Specialist in Education (Ed.S.) prepares individuals for leadership roles in K-12 educational administrative positions. The Ed.S. is a degree appropriate for students wishing to initially earn a post-master's, but not doctoral, degree. Persons seeking admission to the Ed.S. program should be clear about academic and professional goals and aspirations. Students are cautioned that satisfactory completion of courses prior to admission to the Department program does not guarantee admission to the program.

Admission Requirements
Applicants to the Ed.S. program should review the application requirements found at http://www.wmich.edu/leadership/academics/ed-leadership/specialist. Admission deadlines, criteria for admission, and application materials can be found on the department website.

Program Requirements
A program of study consists of a minimum of 60 credit hours beyond the baccalaureate degree and leads to an Ed.S. degree. In addition to the Ed.S. degree, a student can be recommended to receive endorsement from the state as a central office administrator if the appropriate courses are completed as follows (or equivalents as determined by the student's advisor):

EDLD 6020 - Educational Leadership, System and Change Credits: 3 hours
EDLD 6060 - Advanced Systems Thinking Credits: 3 hours

EDLD 6300 - Data-Informed Decision-Making, Research and Evaluation Credits: 3 hours
EDLD 6610 - School Law & Ethics Credits: 3 hours
EDLD 6620 - School Business Management Credits: 3 hours
EDLD 6630 - Personnel Administration Credits: 3 hours
EDLD 6640 - Curriculum, Instruction and Assessment Leadership Credits: 3 hours
EDLD 6670 - The Principalship Credits: 3 hours
EDLD 6720 - School Finance Credits: 3 hours
EDLD 6730 - Instructional Leadership and Supervision Credits: 3 hours
EDLD 6740 - School Community Relations and Cultural Competence Credits: 3 hours
EDLD 6800 - The Superintendency Credits: 3 hours
EDLD 6810 - Policy Development Credits: 3 hours
EDLD 7120 - Professional Field Experience Credits: 2 to 12 hours Credits: 3 hours.
EDLD 7200 - Specialist Project Credits: 1 to 6 hours Credits: 6 hours needed
EMR 5400 - Fundamentals of Evaluation, Measurement, and Research Credits: 3 hours

Select Either:
EDLD 6850 - Facilities and Technology Systems for Learning Credits: 3 hours
OR
EDT 6490 - Instructional Technology Leadership Credits: 3 hours

Electives (6 hours) (from the master's degree or other courses as approved by advisor to meet student program needs).

Depending on a student's goals, an Ed.S. program of study (equaling at least 60 credits) other than the list of courses noted above may be developed by that student's advisor. This may lead to receipt of an Ed.S. degree and a recommendation to receive, from the state, the K-12 Administrator Certificate and the basic principal endorsements.

Upon completion of an Ed.S. degree in Educational Leadership from WMU, any such student admitted to the Ph.D. in Educational Leadership will be able to count up to 60 graduate credit hours towards the 90 credit hour (post bachelors) required within that Ph.D. degree. This means that for such students, not withstanding any other policy, the minimum credit hours required to be taken at WMU after admission to such a doctoral program is 30 credit hours (including dissertation credits). There is also no specific number of courses prescribed in order to meet the residency requirement for students within the Ed.S. in Educational Leadership program.

Doctor of Philosophy in Educational Leadership

Advisors: D. Eric Archer, Andrea Beach, Louann Bierlein Palmer, Walter Burt, Regina Garza Mitchell, Brett Geier, Wanda Hadley, Joe Kretovics, Nancy Mansberger, Sue Poppink, Patricia Reeves, Jianping Shen, Donna Talbot, Rick Zinser/Adam Manley (CTE)
Room 3571 Sangren Hall

The Doctor of Philosophy (Ph.D.) in Educational Leadership is targeted toward professionals working in the areas of K-12, Higher Education, Workforce Education and Development, or other environments engaged in education or adult learning. Four concentrations exist: (1) Higher Education Leadership, (2) K-12 Leadership, (3) Organizational Analysis, and (4) Workforce Education and Development with program requirements specific to each concentration listed below.

Key program goals include preparing individuals to become transformational leaders, ready to help educational or other institutions to address current challenges, including the need to better educate students who have historically not been well served by traditional learning institutions. In addition, graduates will expand their inquiry and research skills, enabling them to add to the knowledge base concerning education, especially as it relates to the growing challenges facing all educational institutions.

Admission Requirements

Admission to the Doctor of Philosophy in Educational Leadership requires that students meet the Graduate College criteria for admission to a doctoral program, and submit and meet criteria set by the department, including:

1. Bachelor's degree from an accredited institution, indicated on an official transcript.
2. For students who have completed at least 20 hours of graduate work, an overall grade point average of at least 3.0 for all graduate work undertaken beyond the bachelor's degree.
3. Submission of scores on the GRE General Test Graduate Application
4. One official transcript from each institution attended since high school
5. Career and Professional Goals Statement in which an applicant clearly describes his/her professional goals, and how this doctoral program fits with those goals. (Note: this statement should be no more than four double-spaced pages, and will also be used as a writing sample from the applicant.)
6. Departmental Graduate Reference Forms completed by three different individuals to address an applicant's ability to successfully complete doctoral-level work.
7. Professional Vitae or Resume

All required forms are available from the Department of Educational Leadership, Research and Technology's website http://www.wmich.edu/leadership/academics/ed-leadership/doctor/doctor-app-reqs.

Each eligible applicant will be interviewed by a minimum of two members of the faculty, and each application will be reviewed for acceptance by the entire faculty of the Educational Leadership program. After admission, a doctoral chair will be appointed from among the faculty advisors, and the student will work with this advisor to assemble an appropriate doctoral advisory committee to guide the student through the program.

The total number of students accepted in any given year will depend upon the quality of individual applicants, as well as available resources to support the program.

Program Requirements

Higher Education Leadership Concentration

The Higher Education Leadership concentration within the Ph.D. in Educational Leadership is designed to serve individuals working in student services or other administrative areas within universities, community colleges, or other institutions focused on adult learning. The program may also be appropriate for individuals serving as faculty, but who do not currently have a doctoral degree and, whose academic discipline may not have the doctorate as a terminal degree, as well as those who aspire to move into administrative leadership roles. The overall focus will be on leadership knowledge and development, applicable to both instructional and management aspects of higher education institutions.

Students must complete a minimum of 42 graduate credits at Western Michigan University (30 credit hours of course work plus 12 credit hours of dissertation) once admitted to a doctoral program in Educational Leadership. In total, a minimum of 90 hours of graduate credit (including credits accepted from a master's degree program) must be completed as follows.

1. Leadership Core (9 hours)
EDLD 6060 - Advanced Systems Thinking Credits: 3 hours
EDLD 6090 - Theories of Leadership Credits: 3 hours
EDLD 6710 - History and Foundation of Higher Education Leadership Credits: 3 hours

2. Professional Inquiry, Research, and Dissertation Core (33 hours)

(a) Professional Inquiry
EDLD 6861 - Doctoral Studies Seminar I Credits: 3 hours
EDLD 6862 - Doctoral Studies Seminar II Credits: 3 hours
EDLD 7120 - Professional Field Experience Credits: 3 hours, Credits needed: 3 hours minimum

(b) Research Methods
EMR 6450 - Data Analytics I: Designed Studies Credits: 3 hours
EMR 6480 - Qualitative Research Methods Credits: 3 hours
EMR 6650 - Data Analytics II: Correlation Studies Credits: 3 hours

(c) Dissertation
EDLD 6950 - Dissertation Seminar Credits: 3 hours.
EDLD 7300 - Doctoral Dissertation Credits: 1 to 15 hours, Credits needed: 12 hours minimum

3. Higher Education Core (24 hours)

Required Courses (15 credits as follows)
EDLD 6570 - Equity and Diversity in Higher Education Credits: 3 hours
EDLD 6590 - Higher Education Law and Ethics Credits: 3 hours
EDLD 6872 - Governance and Organization in Higher Education Credits: 3 hours
EDLD 6875 - Higher Education Finance Credits: 3 hours
EDLD 6890 - Special Topics in Higher Education Seminar Credits: 1 to 4 hours

Elective Courses (with approval of doctoral advisor)
Choose 9 hours from the following list, or equivalents approved by advisor.
EDLD 6510 - Foundations of Student Affairs in Higher Education Credits: 3 hours
EDLD 6530 - The College Student Credits: 3 hours
EDLD 6550 - Intervention Skills for Higher Education Professionals Credits: 3 hours
EDLD 6650 - Principles and Practices of Adult Learning Credits: 3 hours
EDLD 6880 - Higher Education and the New Technological Frontier Credits: 3 hours
EDLD 6890 - Special Topics in Higher Education Seminar Credits: 1 to 4 hours
EDLD 6980 - Readings in Educational Leadership Credits: 1 to 4 hours

4. Special Interest Cognate and Electives (24 hours)
In conjunction with their advisor, students will identify courses to help strengthen their primary area of interest and/or their research knowledge and tools. Many credits for this component may come from the student's master's degree program. Other courses from the master's degree may, as appropriate, be used to fulfill some required or elective courses for the other components.

K-12 Leadership Concentration
The K-12 Leadership concentration is designed for persons who wish to develop leadership skills and serve as a superintendent or other central office administrator within a school district serving elementary and secondary students.

Students must complete a minimum of 42 graduate credits at Western Michigan University (30 credit hours of course work plus 12 credit hours of dissertation) once admitted to a doctoral program in Educational Leadership, or a total of 30 credits including 12 credits of dissertation if a student has previously completed an Ed.S. in Educational Leadership at WMU. In total, 90 hours of graduate credit (including credits accepted from a master's degree program and/or Ed.S.) must be completed as follows.

1. Leadership Core (9 hours)
EDLD 6020 - Educational Leadership, Systems and Change Credits: 3 hours
EDLD 6060 - Advanced Systems Thinking Credits: 3 hours
EDLD 6090 - Theories of Leadership Credits: 3 hours

2. Professional Inquiry, Research, and Dissertation Core (33 hours)

(a) Professional Inquiry
EDLD 6861 - Doctoral Studies Seminar I Credits: 3 hours
EDLD 6862 - Doctoral Studies Seminar II Credits: 3 hours
EDLD 7120 - Professional Field Experience Credits: 3 hours

(b) Research Methods
EMR 6450 - Data Analytics I: Designed Studies Credits: 3 hours
EMR 6480 - Qualitative Research Methods Credits: 3 hours
EMR 6650 - Data Analytics II: Correlation Studies Credits: 3 hours

(c) Dissertation
EDLD 6950 - Dissertation Seminar Credits: 3 hours
EDLD 7300 - Doctoral Dissertation Credits: at least 12 hours required

3. K-12 Education Core (24 hours)
EDLD 6610 - School Law & Ethics Credits: 3 hours
EDLD 6620 - School Business Management Credits: 3 hours
EDLD 6640 - Curriculum, Instruction and Assessment Leadership Credits: 3 hours
EDLD 6670 - The Principalship Credits: 3 hours
EDLD 6720 - School Finance Credits: 3 hours
EDLD 6730 - Instructional Leadership and Supervision Credits: 3 hours
EDLD 6740 - School Community Relations and Cultural Competence Credits: 3 hours
EDLD 6810 - Policy Development Credits: 3 hours

4. Special Interest Cognate and Electives (24 hours)
Students could fulfill the requirements for this section by taking any combination of the following three approaches depending on their interests and career goals, such as (A) and (C), or (A) and (B), or just (C).

(a) Additional Requirements for Central Office Endorsement
EDLD 6300 - Data-Informed Decision-Making, Research and Evaluation Credits: 3 hours
EDLD 6630 - Personnel Administration Credits: 3 hours
EDLD 6800 - The Superintendency Credits: 3 hours
EDT 6490 - Instructional Technology Leadership Credits: 3 hours OR
EDLD 6850 - Facilities and Technology Systems for Learning Credits: 3 hours

(b) Research Methods
Students could take additional methods courses in qualitative and/or quantitative research, such as the following or other methods courses.
EMR 6410 - Fundamentals of Measurement in the Behavioral Sciences Credits: 3 hours
EMR 6420 - Evaluation I: Theory, Methods, and Program Evaluation Credits: 3 hours
EMR 6500 - Survey Research Credits: 3 hours
EMR 6520 - Evaluation Practicum Credits: 3 hours
EMR 6580 - Qualitative Research Practicum Credits: 3 hours
EMR 6650 - Data Analytics II: Correlation Studies Credits: 3 hours

(c) Cognate Outside Leadership Specialization
Students could take courses in an area that has a course prefix other than EDLD.

Organizational Analysis Concentration
The Organizational Analysis concentration is designed to develop and enhance leadership skills for those who find an institutional specialization unnecessary (i.e., not focused on K-12 or higher education institutions), with a special focus on organizational analysis skills.

Students must complete a minimum of 42 graduate credits at Western Michigan University (30 credit hours of course work plus 12 credit hours of dissertation) once admitted to a doctoral program in Educational Leadership. In total, 90 hours of graduate credit (including credits accepted from a master's degree program) must be completed as follows.

1. Leadership Core (9 hours)

EDLD 6020 - Educational Leadership, Systems and Change Credits: 3 hours
EDLD 6060 - Advanced Systems Thinking Credits: 3 hours
EDLD 6090 - Theories of Leadership Credits: 3 hours

2. Professional Inquiry, Research, and Dissertation Core (33 hours)

(a) Professional Inquiry
EDLD 6861 - Doctoral Studies Seminar I Credits: 3 hours
EDLD 6862 - Doctoral Studies Seminar II Credits: 3 hours
EDLD 7120 - Professional Field Experience Credits: 3 hours

(b) Research Methods
EMR 6450 - Data Analytics I: Designed Studies Credits: 3 hours
EMR 6480 - Qualitative Research Methods Credits: 3 hours
EMR 6650 - Data Analytics II: Correlation Studies Credits: 3 hours

(c) Dissertation
EDLD 6950 - Dissertation Seminar Credits: 3 hours
EDLD 7300 - Doctoral Dissertation Credits: at least 12 hours required.

2. Organizational Analysis Core (24 hours)

(a) Required Courses
EDLD 6810 - Policy Development Credits: 3 hours
EMR 6420 - Evaluation I: Theory, Methods, and Program Evaluation Credits: 3 hours
EMR 6430 - Evaluation II: Evaluating Products, Personnel and Policy Credits: 3 hours
EMR 6500 - Survey Research Credits: 3 hours

(b)Elective Courses
Choose 12 hours from following list, or equivalents approved by advisor
EDLD 6630 - Personnel Administration Credits: 3 hours.
EDLD 6730 - Instructional Leadership and Supervision Credits: 3 hours
EDLD 6980 - Readings in Educational Leadership Credits: 1 to 4 hours
EMR 6410 - Fundamentals of Measurement in the Behavioral Sciences Credits: 3 hours
EMR 6580 - Qualitative Research Practicum Credits: 3 hours
EMR 6650 - Data Analytics II: Correlation Studies Credits: 3 hours
GRAD 7110 - Readings in Doctoral Specialization Credits: 3 hours
MGMT 6500 - Managing Change Credits: 3 hours
PADM 6080 - Organization Theory and Behavior Credits: 3 hours

3. Special Interest Cognate and Electives (24 hours)
In conjunction with their advisor, students will identify courses to help strengthen their primary area of interest and/or their research knowledge and tools. Many credits for this component may come from the student's master's degree program. Other courses from the master's degree may, as appropriate, be used to fulfill some required or elective courses for the other components.

Workforce Education and Development Concentration
The Workforce Education and Development concentration is designed to enhance the skills in administrative leadership, curriculum, or instruction for individuals involved in career technical education or related areas within adult, secondary, post-secondary, and four-year institutions.

Students must complete a minimum of 42 graduate credits at Western Michigan University (30 credit hours of course work plus 12 credit hours of dissertation) once admitted to a doctoral program in Educational Leadership. In total, 90 hours of graduate credit (including credits accepted from a master's degree program) must be completed as follows.

1. Leadership Core (9 hours.)
EDLD 6020 - Educational Leadership, Systems and Change Credits: 3 hours
EDLD 6060 - Advanced Systems Thinking Credits: 3 hours
EDLD 6090 - Theories of Leadership Credits: 3 hours

2. Professional Inquiry, Research, and Dissertation Core (33 hours)

(a) Professional Inquiry
EDLD 6861 - Doctoral Studies Seminar I Credits: 3 hours
EDLD 7120 - Professional Field Experience Credits: 6 hours.

(b)Research Methods
EMR 6450 - Data Analytics I: Designed Studies Credits: 3 hours
EMR 6480 - Qualitative Research Methods Credits: 3 hours
EMR 6650 - Data Analytics II: Correlation Studies Credits: 3 hours

(c) Dissertation
EDLD 6950 - Dissertation Seminar Credits: 3 hours
EDLD 7300 - Doctoral Dissertation Credits: at least 12 hours required

3. Workforce Education and Development Core (24 hours.)
WFED 6140 - Administration and Supervision of Workforce Education Credits: 3 hours
WFED 6160 - Occupational Selection and Training Credits: 3 hours
WFED 6430 - Measurement and Evaluation in Workforce Education Credits: 3 hours
WFED 6450 - Organization of Employment and Training Systems Credits: 3 hours
WFED 6460 - Leadership Development in Workforce Education Credits: 3 to 6 hours
WFED 6480 - Leadership Development in Workforce Education Credits: 3 hours
WFED 6500 - Advanced Studies in Work-based Learning Credits: 3 hours

4. Specialty Cognates (minimum of 12 hours)
Students may choose one of the following four cognate areas based upon career goals in CTE.

(a) Curriculum
ED 6020 - School Curriculum and Assessment Credits: 3 hours
ED 6280 - Curriculum Theory Credits: 3 hours
EDLD 6640 - Curriculum, Instruction and Assessment Leadership Credits: 3 hours
EMR 6420 - Evaluation I: Theory, Methods, and Program Evaluation Credits: 3 hours

(b) Educational Leadership
EDLD 6630 - Personnel Administration Credits: 3 hours
EDLD 6670 - The Principalship Credits: 3 hours
EDLD 6720 - School Finance Credits: 3 hours
EMR 6420 - Evaluation I: Theory, Methods, and Program Evaluation Credits: 3 hours

(c) Instruction
Focused on further technical knowledge in a particular WFED discipline, (e.g., Business or Marketing Education, Family and Consumer Sciences, Industrial Technology, Information Technology). May include graduate courses within or outside College of Education and Human Development intended to enhance technical content needed as a WFED instructor, in an adult, secondary, or post-secondary institution.

(d) Total Quality Management in Education
This cognate is offered by Ferris State University (FSU) and leads to a certificate in TQM awarded by FSU.
ECTE 6500 Implementing TQM in Education Credits: 3 hours
ECTE 6550 Quality Improvement Practices Credits: 3 hours
ECTE 6600 Quality Management in Education Credits: 3 hours
ECTE 6650 Quality Metrics and Data Management Credits: 3 hours

5. Elective Courses (minimum of 12 hours)
Other elective courses can be substituted with advisor approval addressing educational leadership, evaluation, measurement, or research design.
WFED 5100 - Special Populations in Workforce Education and Development Credits: 3 hours
WFED 5120 - Principles of Workforce Education and Development Credits: 3 hours
WFED 5130 - Teaching Methods in Workforce Education and Development Credits: 3 hours
WFED 5140 - Workshop in Workforce Education and Development Credits: 1 to 3 hours
WFED 5150 - Grant Writing for Workforce Education and Development Credits: 3 hours
WFED 5420 - Curriculum Development in Workforce Education and Development Credits: 3
WFED 5430 - Work-site Based Education Programs Credits: 3 hours
WFED 6120 - Studies in Workforce Education and Development Credits: 1 to 4 hours
CTE 6150 - Trends and Developments in Career and Technical Education Credits: 3 hours
WFED 6170 - Seminar in Workforce Education and Development Credits: 2 to 6 hours

Master of Arts in Evaluation, Measurement, and Research

Advisors: Brooks Applegate, Gary Miron, Jianping Shen, Jessaca Spybrook, Ya Zhang, Pat Reeves
Room 3571 Sangren Hall

The Department of Educational Leadership, Research and Technology offers the Master of Arts in Evaluation, Measurement, and Research. Students completing this degree program will be qualified to serve in a staff position in evaluation, testing, or research units in school or non-school settings, or in local, state, or federal government agencies.

Admission Procedures
Students seeking admission to this degree program should be able to access and complete the application electronically; see the program web site for directions and links to appropriate forms: www.wmich.edu/leadership/academics/emr/master.

Program Requirements
This 36 credit hour master's program requires the satisfactory completion of the following courses.
EMR 5400 - Fundamentals of Evaluation, Measurement, and Research Credits: 3 hours
EMR 5410 - Introduction to Educational Measurement and Assessment Credits: 3 hours
OR
EMR 6410 - Fundamentals of Measurement in the Behavioral Sciences Credits: 3 hours
EMR 6420 - Evaluation I: Theory, Methods, and Program Evaluation Credits: 3 hours
EMR 6430 - Evaluation II: Evaluating Products, Personnel and Policy Credits: 3 hours
EMR 6450 - Data Analytics I: Designed Studies Credits: 3 hours
EMR 6480 - Qualitative Research Methods Credits: 3 hours
EMR 6500 - Survey Research Credits: 3 hours
EMR 6590 - Contemporary Trends in Research Credits: 3 hours
EMR 6790 - Capstone Portfolio Project Credits: 3 hours

Additional Requirements
In addition, nine credit hours are chosen from courses outside the EMR program such as sociology, psychology, or other area approved by the advisor.

Doctor of Philosophy in Evaluation, Measurement, and Research

Advisors: Brooks Applegate, Chris Coryn, Gary Miron, Patricia Reeves, Jianping Shen, Jessaca Spybrook, Ya Zhang
Room 3571 Sangren Hall.

This program prepares graduates to serve in leadership roles in evaluation, measurement, or research units in school or non-school settings, as well as in local, state, or federal government agencies and to serve in faculty positions in evaluation, measurement, and research at institutions of higher education.

Admission Procedures
Students seeking admission to this degree program should be able to access and complete the application electronically; see the department program site for directions and links to appropriate forms: www.wmich.edu/leadership/academics/emr/doctor/doctor-app-reqs.

Program Requirements
The following requirements and courses will lead to a Doctor of Philosophy in Evaluation, Measurement, and Research (93 hours minimum):
EMR Comprehensive Examination
EMR 5400 - Fundamentals of Evaluation, Measurement, and Research Credits: 3 hours
EMR 6410 - Fundamentals of Measurement in the Behavioral Sciences Credits: 3 hours
EMR 6420 - Evaluation I: Theory, Methods, and Program Evaluation Credits: 3 hours
EMR 6430 - Evaluation II: Evaluating Products, Personnel and Policy Credits: 3 hours
EMR 6450 - Data Analytics I: Designed Studies Credits: 3 hours
EMR 6480 - Qualitative Research Methods Credits: 3 hours
EMR 6490 - The Nature of Science and Scientific Inquiry Credits: 3 hours
EMR 6500 - Survey Research Credits: 3 hours
EMR 6510 - Advanced Applications of Measurement Methods Credits: 3 hours
EMR 6520 - Evaluation Practicum Credits: 3 hours
EMR 6550 - Experimental and Quasi-experimental Design for Applied Research and Evaluation Credits: 3 hours
EMR 6580 - Qualitative Research Practicum Credits: 3 hours
EMR 6650 - Data Analytics II: Correlation Studies Credits: 3 hours
EMR 7120 - Professional Field Experience Credits: 9 hours
EMR 7300 - Doctoral Dissertation Credits: 15 hours

One of the following:
EMR 6600 - Advanced Seminar in Research Credits: 3 hours
EMR 6610 - Advanced Seminar in Measurement Credits: 3 hours
EMR 6620 - Advanced Seminar in Evaluation Credits: 3 hours

Additional Requirements
In addition, 9 credit hours of advisor-approved electives and 18 hours chosen from a cognate area with advisor approval are required.

Master of Arts in Educational and Instructional Technology

Advisors: Brian Horvitz, Sharon Peterson
Room 3571 Sangren Hall

The Master of Arts in Educational and Instructional Technology is designed for individuals seeking to become technology leaders and trainers in corporations, K-12 education, higher education, nonprofits and other organizations. The degree will prepare you for leadership roles in the support and training of others in learning organizations.

As **both a totally online degree program and campus based program**, the Master of Arts in Educational and Instructional Technology allows students the flexibility to participate in and complete most or all of your coursework without having to commute to campus or to take most of the courses of your degree program on campus. While many students are able to complete their EDT Graduate studies online without ever stepping on campus, others prefer or are required by funding sources and government requirement to take their EDT Masters degree course work in our state of the art instructional classrooms and computer labs on campus. Students should be prepared to handle distance education instruction that often requires more independent work, self-direction, and the meeting of course deadlines outside of regular classroom meetings. Students will also need to have mastered basic

computer communications systems, including e-mail, web browsing, and submission of assignments via file transfer procedures.An online application and additional information can be found at www.wmich.edu/leadership/academics/edtech/master/admissions.

Admission Requirements
In addition to meeting the requirements of the Graduate College, all applicants must possess a baccalaureate degree, provide a statement outlining technology skills and background, career goals, and educational philosophy (1,000 words). Admission decisions will be made by program faculty after review of admission materials.

Program Requirements
Students will complete a planned program of study consisting of 30 credit hours of course work with an overall grade point average of 3.0 or better. The degree course work requires a twelve credit hour Major Core. The degree also requires a six hour Minor Core that is approved by an academic advisor. Additionally, the degree requires six hours of electives that are related to the career goals of the student and approved by an academic advisor.

I. Major Core (12 hours)
EDT 5410 - Foundations of Instructional Technology Credits: 3 hours
EDT 6420 - Instructional Design Credits: 3 hours
EDLD 6650 - Principles and Practices of Adult Learning Credits: 3 hours
EDT 6440 - Instructional Technology Tools and Development Credits: 3 hours

II. Minor Core (6 hours)
EDT 6430 - Fundamentals of Online Learning Credits: 3 hours
EDT 6450 - Technical and Operational Issues Credits: 3 hours
EDT 6490 - Instructional Technology Leadership Credits: 3 hours
EDLD 6020 - Educational Leadership, Systems and Change Credits: 3 hours
OCL 6430 - Group Dynamics and Team Development in an Age of Globalization Credits: 3 hours
OCL 6440 - Large Scale Change and Organizational Design Credits: 3 hours

III. Electives (6 hours)
- Select six hours of elective courses related to the career goals of the student and approved by an academic advisor. Elective may be at the 5000 or 6000 level.
- Students may choose online or traditional courses, or a combination of both, to fulfill your technology minor elective core.
- Students may choose EDT or OCL courses or courses from outside these programs with permission from your advisor.

IV. Research Course (3 hours)
Select one of the following courses or an equivalent course with permission from your advisor. There are both online and traditional courses available to fulfill this requirement.
EDLD 6300 - Data-Informed Decision-Making, Research and Evaluation Credits: 3 hours
EMR 5400 - Fundamentals of Evaluation, Measurement, and Research Credits: 3 hours

V. Culminating Learning Activity (1 course)
EDT 7100 - Independent Research Credits: 2 to 6 hours
(Credits: 3 hours needed, with approval from advisor)

Certificate Program in Educational and Instructional Technology

Advisors: Brian Horvitz, Sharon Peterson
Room 3571 Sangren Hall

This graduate certificate program provides a strong framework for the development of technology competencies for individuals to assist them with technology in corporations, K-12 education, higher education, nonprofits and other organizations.

Admission Requirements

In addition to meeting the requirements of the Graduate College, all applicants must possess a baccalaureate degree, provide a statement outlining technology skills and background, career goals, and educational philosophy (1,000 words). Admission decisions will be made by the department's faculty, following a review of the applicant's admission materials.

Program Requirements

Students will complete a planned program of study consisting of 18 hours of course work with an overall grade point average of 3.0 or better, with no course grade below a "C." The courses include:

Required (12 hours)

EDT 5410 - Foundations of Instructional Technology Credits: 3 hours
EDT 6420 - Instructional Design Credits: 3 hours
EDT 6440 - Instructional Technology Tools and Development Credits: 3 hours
EDLD 6650 - Principles and Practices of Adult Learning Credits: 3 hours

Electives (6 hours)

EDT 6430 - Fundamentals of Online Learning Credits: 3 hours
EDT 6450 - Technical and Operational Issues Credits: 3 hours
EDT 6490 - Instructional Technology Leadership Credits: 3 hours
EDLD 6020 - Educational Leadership, Systems and Change Credits: 3 hours
OCL 6430 - Group Dynamics and Team Development in an Age of Globalization Credits: 3 hours
OCL 6440 - Large Scale Change and Organizational Design Credits: 3 hours

Family and Consumer Sciences

Richard W. Zinser, Chair
Main Office: 3326 Kohrman Hall
Telephone: (269) 387-3704
Fax: (269) 387-3353

Karen R. Blaisure
Jou-Chen Chen
Kimberly Doudna
Crystal Duncan Lane
Barbara J. Frazier
Angel Gullon-Rivera
R. Adam Manley
Marcy Peake
Caroline Webber
Zee-Sun Yun

The Department of Family and Consumer Sciences offers the Master of Arts in Career and Technical Education and the Master of Arts in Family and Consumer Sciences. The Department also offers a concentration in Career and Technical Education within the Doctor of Education in Educational Leadership. For more information on this doctoral program, see the catalog listing under the Department of Educational Leadership, Research and Technology.

Master of Arts in Workforce Education, Development, and Leadership

Advisor: R. Adam Manley

Room 3603, Kohrman Hall

This 30-hour degree program includes course work that will strengthen students' abilities to teach workforce education and development and to assist in developing and implementing new programs or curricula. The program is flexible to provide advanced techniques for teachers and career preparation for administrators, supervisors, counselors, coordinators, and for any other specialized positions in the workforce education areas of marketing education, business education, family and consumer sciences, and technology education.

The Master of Arts in Workforce Education, Development, and Leadership is designed for bachelor's graduates in marketing education, business education, family and consumer sciences, industrial arts, industrial education, or workforce education, plus professional preparation in teacher education, including directed or supervised student teaching.

Program Requirements
Complete at least 30 graduate credit hours, selected in consultation with a program advisor. The program of study will consist of 3-6 hours of professional education courses, 15-18 hours of core courses, and 3-12 hours of electives.

M.A. in Workforce Education and Development, Post-Baccalaureate Certification
The department also maintains a post-baccalaureate certification program within the Master of Arts in Workforce Education, Development, and Leadership that leads to a State secondary provisional certificate with an endorsement in marketing, business, family and consumer sciences, or industrial technology education and a vocational endorsement (36 hours). Please see the program advisor for more information about the specific admission and program requirements that apply to this certification.

Master of Arts in Family and Consumer Sciences

Advisors: Karen Blaisure (September - June),

Richard Zinser (July and August),
Room 3326, Kohrman Hall

The graduate program in Family and Consumer Sciences provides an advanced program of study with a concentration in child life, dietetics, family life education, or textile and apparel studies.

The student will work closely with graduate faculty to develop a plan of study and individual research agenda that fits with personal career and academic goals. The program is appropriate for students interested in pursuing professional positions or as a foundation for continued graduate work leading to a doctoral degree in another department or at another institution.

Dietetics, Family Life Education, and Textile and Apparel Studies Concentrations

Admission Requirements
For admission to the master's program in Family and Consumer Sciences, students must satisfy all the requirements identified in the Graduate Catalog as well as specific departmental requirements. No one requirement is sufficient to guarantee admission or dictate denial of admission.

1. Possess a Bachelor of Science from an approved accredited school and a major closely related to the selected concentration.
2. Have a minimum undergraduate grade point average of 3.0 on a 4.0 scale in the last two years of undergraduate work. Non-degree, probationary status may be granted to students with a GPA between 2.5 and 2.99 in the last two years of undergraduate work. Students with that GPA range may establish eligibility for regular admission to WMU by completing nine credit hours of approved graduate-level courses toward their M.A. with a grade of "B" or better in each course.
3. Include a resume indicating previous education experiences and listing positions held over the past 10 years. Indicate the exact title of each position, the agency, school, or firm where employed, and the duration of each employment. Also note particular awards or accomplishments.
4. Submit a two-page, word-processed essay that provides the following information:
    a. Describe experience(s) that influenced your career choice and your desire to return to graduate school.
    b. Explain how having a Master of Arts in Family and Consumer Sciences degree will advance your career.

Program Requirements
1. All master's programs include a minimum of 30 semester hours, 15 of which must be in courses at the 6000-level or higher, and at least two hours of FCS 7100, Independent Research.
2. A total of 20 hours in Family and Consumer Sciences must be completed in graduate level courses, planned in consultation with a program advisor.

Assistantships may be available to those wishing to pursue full-time graduate study.

Child Life Concentration

The Master of Arts in Family and Consumer Sciences (concentration in Child Life) prepares students to pursue a career in the child life profession. This 41 hour concentration involves course work aligned with recommendations of the Child Life Council, the primary professional organization of child life specialists. The curriculum provides classroom and field experiences enabling students to build on skills and knowledge key to working as a child life professional. See the department website for information on admission requirements and the admissions application process.

Child Life Admission Requirements
- An undergraduate GPA of 3.0 on a 4.0 scale.
- A bachelor's degree in family studies, child and family development, or a related field
- An undergraduate practicum/internship with direct experience working with children, youth, and families.

- Undergraduate course work in medical terminology, anatomy and physiology with a grade of "B" or better. Applicants who have not had this course work may be considered for admission; however, if admitted, the student must successfully complete the course work before attending or while in the graduate program. Transcripts documenting successful completion of course work will be necessary. This course work will not be counted as part of the graduate degree.

Child Life Program Requirements

1. The concentration in Child Life includes a minimum of 41 semester hours, 15 of which must be in courses at the 6000-level or higher, and at least two hours of FCS 7100, Independent Research.
2. A total of 20 hours in Family and Consumer Sciences must be completed in graduate level courses, planned in consultation with a program advisor.

Assistantships may be available to those wishing to pursue full-time graduate study.

Master of Arts in Family and Consumer Sciences (emphasis areas in Child Life or Family Life Education) (Accelerated)

The Accelerated Graduate Degree Program (AGDP) in Family and Consumer Sciences applies to the emphasis areas in Child Life or in Family Life Education. The AGDP allows qualifying students to begin accumulating credits toward completion of a Master of Arts degree in Family and Consumer Sciences while still enrolled as undergraduates in the Family Studies major, the Child and Family Development major, or the Youth and Community Development major. Undergraduate students admitted to the MA in Family and Consumer Sciences (emphasis Child Life or Family Life Education) AGDP, with senior standing, may take up to 12 credit hours of designated 5000- and 6000-level courses for graduate credit. These designated courses may be used in completion of both the bachelor's degree and the master's degree.

Degree hours

The Master of Arts in Family and Consumer Sciences with an emphasis in **Family Life Education** requires a total of 30 credit hours. An undergraduate degree in a Family Studies major or a Child and Family Development major requires a total of 122 credit hours. Students enrolling in the AGDP for the maximum 12 graduate credits would earn 140 total undergraduate and graduate credits in contrast to the typical combined 152 undergraduate and graduate credit hours under the usual progression to degree(s).

The Master of Arts in Family and Consumer Sciences with an emphasis in **Child Life** requires a total of 41 credit hours. An undergraduate degree in a Family Studies major or a Child and Family Development major requires a total of 122 credit hours. Students enrolling in the AGDP for the maximum 12 graduate credits would earn 151 total undergraduate and graduate credits in contrast to the typical combined 163 undergraduate and graduate credit hours under the usual progression to degree(s).

Students will pay undergraduate tuition for the designated AGDP 5000- and 6000-level courses as undergraduates, and the courses will be included in the flat tuition rate. On completion of the undergraduate degree, the student will be re-classified as a graduate student and then will pay graduate tuition rates.

Students who have received their baccalaureate degrees will be ineligible to apply for this program and retroactively claim credits toward the M.A. degree.

Admission criteria

1. Students must have a declared major in Family Studies or in Child and Family Development, and have a minimum accumulated grade point average (GPA) of 3.0 (based on at least 45 earned credit hours, 15 of which shall be earned at Western Michigan University) and 3.5 GPA in the major (based on at least 12 earned credit hours).

2. The student completes the online graduation application (http://www.wmich.edu/apply) and within the application selects the application type "Accelerated degree seeking - only available to current WMU undergraduate student."

3. International students must clarify their visa status with the Office of International Students and Scholar Services before submitting an application for the AGDP.

Admission procedure

1. As early as possible in the academic junior year, the student contacts the graduate program advisor to discuss this AGDP option and review the requirements, timelines, and application procedures.

2. The student completes the online graduate application.

3. Upon acceptance into the AGDP, the student meets together with the graduate advisor and an undergraduate academic advisor to prepare an appropriate program of study that meets the requirements for the undergraduate and graduate degrees.

4. The AGDP Course Approval Form that lists the graduate courses to be counted in both degrees will be sent to the student and to the registrar. A copy of this form will also be included in the student's graduate file.

Requirements for continuing eligibility and graduation

1. Students must complete the requirements for the M.A. degree within 24 months from the completion of the bachelor's degree. Students unable to meet this requirement must apply for an extension with the director of graduate studies in the Department of Family and Consumer Sciences.

2. In order to progress automatically into the graduate program, students must achieve a grade of "B" or better in each of the graduate courses being counted for the undergraduate degree, as well as maintain a 3.0 GPA overall and a 3.5 GPA in their major. Students will be admitted as graduate students (with the relevant graduate credit) in the next semester or session after receiving the bachelor's degree. Students who do not meet these requirements will have the earned grade applied to their undergraduate degree only and must apply for readmission into the graduate program.

3. Students in the AGDP must follow the program of study developed with the graduate director and the undergraduate advisor. Failure to follow this program of study may result in ineligibility for the AGDP.

4. Both undergraduate and graduate transcripts will show that the student completed the Accelerated Graduate Degree Program.

Withdrawal

A student may withdraw from an approved AGDP at any time by informing the director of the undergraduate program and the graduate advisor in writing. A copy of this withdrawal statement will be forwarded to the Graduate College and the Registrar's Office.

<u>Designated Accelerated Degree Program Family and Consumer Sciences Courses</u>

5000-level courses
WFED 5150 - Grant Writing for Workforce Education and Development Credits: 3 hours
ED 5950 - Experiential Education and Place-Based Learning Credits: 3 hours
ES 5850 - Social Justice and Community Organizing Credits: 3 hours
FCS 5100 - Teaching Sexuality Education Credits: 3 hours
FCS 5110 - Kinship Care Family Members: Strengths and Challenges Credits: 3 hours
FCS 5120 - Educational Systems and Kinship Care Families Credits: 1 hour
FCS 5130 - Health Care and Kinship Care Families Credits: 1 hour
FCS 5140 - Economic Realities and Kinship Care Families Credits: 1 hour
FCS 5220 - Topics in Family and Consumer Sciences Credits: 1- to 3 hours

FCS 5250 - The Adolescent in Development Credits: 3 hours
FCS 5350 - Communication Skills for Working with Families across the Lifespan Credits: 3 hours
FCS 5500 - Raising Children in Contemporary Society Credits: 3 hours
FCS 5510 - Families and Hospitalization I Credits: 3 hours
FCS 5520 - Families and Hospitalization II Credits: 3 hours
FCS 5680 - Gender, Culture, and Families Credits: 3 hours
FCS 5750 - Administration of Child Development Centers Credits: 3 hours

6000-level courses
FCS 6010 - Basic Research Methods and Design Credits: 3 hours
FCS 6160 - Consumer Education Credits: 3 hours
FCS 6220 - Practicum in Family and Consumer Sciences Credits: 2 to 6 hours
FCS 6510 - Child Development Theories and Practice Credits: 3 hours
FCS 6520 - Family Life Education Credits: 3 hours
FCS 6530 - Families, Loss and Bereavement Credits: 3 hours
FCS 6550 - Adult-Child Relationships Credits: 3 hours
FCS 6560 - Family Law, Ethics, and Professional Issues Credits: 3 hours
FCS 6600 - Studies in Family Relationships Credits: 3 hours

Certificate Program in Kinship Care Families

Advisors: Gary H. Bischof, Karen Blaisure, Andrea Smith (TLES)
Room 3326 Kohrman Hall

This graduate certificate program provides a strong framework for working with kinship care families, which involve the care of children by family members other than the child's biological parent(s). This care is often provided by grandparents, aunts, uncles, siblings or other family members due to a variety of circumstances. The program prepares human services professionals with the understanding and skills to work effectively with these families. The program emphasizes strengths and challenges of kinship care families, intersections between these families and educational and human care systems, economic realities, and developing effective programming.

Admission Requirements
In addition to meeting the requirements of the Graduate college, all applicants must possess a baccalaureate degree, provide a statement outlining one's background, human service experiences with families, interest in kinship care families, and career goals (1-2 pages). Admission decisions will be made by the department's faculty, following a review of the applicant's admission materials.

Program Requirements
Students will complete a planned program of study consisting of 9 hours of course work with an overall grade point average of 3.0 or better, with no course grade below a "C". The courses include:
FCS 5110 - Kinship Care Family Members: Strengths and Challenges Credits: 3 hours
FCS 5120 - Educational Systems and Kinship Care Families Credits: 1 hour
FCS 5130 - Health Care and Kinship Care Families Credits: 1 hour
FCS 5140 - Economic Realities and Kinship Care Families Credits: 1 hour
FCS 6570 - Developing Effective Programming for Kinship Care Family Members Credits: 3 hours

Certificate Program in Professional Workforce Educator

Advisor: Adam Manley
Room 3602 Kohrman Hall

This graduate certificate program provides knowledge related to contextual-based learning in the field of workforce education. The two required courses provide the student with a background related to the foundation of workforce

education, as well as advanced instructional and laboratory teaching strategies. The options for the third course provide the student with a curriculum that fits their workforce education needs.

Additionally, this certificate program meets the academic course requirement for Michigan's Interim Occupational Certificate (IOC). To earn the IOC, a student must complete the courses within this certificate, and document related work experience and pass the necessary teacher certification tests. Please see advisor for more information regarding this certificate or earning your IOC.

Admission Requirements

In addition to meeting the requirements of the Graduate College, all applicants must possess a baccalaureate degree. Admission decisions will be made by the department's faculty, following a review of the applicant's admission materials.

Program Requirements

Students will complete a planned program of study consisting of 9 hours of course work with an overall grade point average of 3.0 or better, with no course grade below a "C".

The nine-credit Professional Workforce Certificate requires the following courses:
WFED 5120 - Principles of Workforce Education and Development Credits: 3 hours
WFED 5130 - Teaching Methods in Workforce Education and Development Credits: 3 hours

One of the following WFED course options:
WFED 5100 - Special Populations in Workforce Education and Development Credits: 3 hours
WFED 5420 - Curriculum Development in Workforce Education and Development Credits: 3 hours
WFED 5430 - Work-site Based Education Programs Credits: 3 hours
WFED 6430 - Measurement and Evaluation in Workforce Education Credits: 3 hours

Human Performance and Health Education

YuanLong Liu , Chair
Main Office: 4024 Student Recreation Center
Telephone: (269) 387-2710
Fax: (269) 387-2704

Robert Bensley
Debra Berkey
Christopher Cheatham
Nicholas Hanson
Sangwoo Lee
Ming Li
Timothy Michael
Michael G. Miller
Zelkja Vidic
Carol Weideman

The graduate studies in the Human Performance and Health Education Department offers five academic programs intended to develop highly trained professionals in a variety of fields.

The Master of Arts in Coaching Sports Performance prepares students for successful careers in a coaching profession. The program's engaging curriculum enables students to acquire a well-rounded knowledge base and relevant practical experiences necessary to become successful coaches at all levels of sporting competition.

The Master of Science in Exercise and Sports Medicine (Exercise Physiology concentration) is designed to provide the student with an advanced understanding of the physical and functional adaptations to movement. The program integrates traditional lecture-based courses with hands-on laboratory experiences.

The **Master of Science in Athletic Training** concentration is an CAATE accredited post-professional athletic training education program designed to provide the student with advanced athletic training didactic and laboratory experiences, clinical internship opportunities and research experiences to become better clinicians and educators.

The Master of Arts in Physical Education allows students to matriculate **online** while permitting students to obtain practical experience close to home. Students can select a concentration in **Pedagogy** or **Adapted Physical Education.**

The **Pedagogy** concentration is designed to provide teachers with the knowledge, skills and experience that will facilitate effective instruction in private and public schools.

The **Special Physical Education** concentration prepares teachers to provide quality special (adapted) physical education for K-12 children with disabilities in the least restrictive, most appropriate and inclusive environments.

The **Master of Arts in Sport Management** is designed to prepare students to blend general management skills with the specific demands of managing sports organizations.

Admission Requirements
Students must meet Graduate College admission standards, successful completion of an undergraduate major or minor or equivalent appropriate for intended emphasis area, submission of GRE scores, submission of a letter of intent to include education, career and/or research goals and philosophy. In some programs, admissions requirements may vary slightly. Please contact the program advisor for details.

Program Requirements
Each graduate student is expected to show competence in four professional areas: research, socio-cultural issues, curriculum or psychological foundations, and a professional area of emphasis. HPHE 6900 and HPHE 6920 are required in all programs. Graduate degree programs also require the successful completion of a minimum of thirty-six graduate credit hours beyond the bachelor's degree in one of the following: Athletic Training, Special Physical Education, Coaching Sports Performance, Exercise Physiology, Physical Education Pedagogy or Sport Management. For information about additional specific course requirements for each degree or concentration, contact the graduate advisor.

Master's degree candidates are required to complete a comprehensive, integrated capstone experience which can be met through the following:
HPHE 7000 - Master's Thesis Credits: 6 hours
HPHE 7100 - Independent Research Credits: 2 to 6 hours and/or
HPHE 7120 - Professional Field Experience Credits: 2 to 12 hours

Master of Arts in Coaching Sports Performance (36 credit hours)

Advisor: Zeljka Vidic
Room 4024-8 Student Recreation Center

The Department of Human Performance and Health Education offers an online Master of Arts in Coaching Sport Performance which is designed to provide 36 graduate credit hours enabling students to develop skills and knowledge that coaches and related sport clinicians should possess. The M.A. in Coaching Sport Performance clearly supports an athlete-centered philosophy of sport and encourages each student to create a program of study that will enhance their preparation in becoming a high performance coach, maximizing the benefits of sport for all participants. The established curriculum is aligned with the National Standards for Sport Coaches and NCACE Accreditation Level 5. Graduate students find positions as coaches in school and community-based sport, as well as instructional staff for coaching education programs.

Admission Requirements
Meet Graduate College admission standards, successful completion of an undergraduate major or minor, or related coaching experience. Students are to submit a letter of intent to include educational and career goals. In some cases an interview or additional qualifications may be required.

Planned Program of Study
Each graduate student is expected to show master level competence in the comprehension and behavioral skills associated with the eight domains of the National Standards for Sport Coaches. In addition, each student is expected to demonstrate the capacity to function effectively in applied settings among diverse populations as well as demonstrate a commitment to fostering a safe and effective sport environment for all participants.

Coaching Courses
HPHE 6300 - Professional Development Seminar for Coaches Credits: 1 hour
HPHE 6310 - Skill Acquisition and Human Performance Credits: 3 hours
HPHE 6320 - Theories of Strength and Conditioning Credits: 3 hours
HPHE 6340 - Sports Safety and Injury Management for Coaches Credits: 3 hours
HPHE 6350 - Principles and Practices of Effective Coaching Credits: 3 hours
HPHE 6360 - Sport Nutrition and Energy Systems Credits: 3 hours
HPHE 6440 - Program Evaluation in Sport and Physical Education Credits: 3 hours
HPHE 6600 - Governance and Administration of Sport Credits: 3 hours
HPHE 6910 - Psychological Preparation and Mental Training for Sport and Physical Activity Credits: 3 hours
HPHE 6930 - Sociology of Sport and Physical Activity Credits: 3 hours

Department Research Courses

HPHE 6900 - Research Procedures in HPHE Credits: 3 hours
HPHE 6920 - Analytical Techniques in HPHE Credits: 3 hours

Required Capstone Experience
HPHE 7120 - Professional Field Experience Credits: 2 hours

Master of Science in Athletic Training

Advisor:
Michael G. Miller
1037 Student Recreation Center

The Athletic Training concentration is an CAATE accredited post-professional athletic training education program designed to provide the student with advanced athletic training, didactic and laboratory experiences, clinical internship opportunities in which the students will solidify their skills, and research experiences to become better clinicians and educators. Students wishing to pursue this degree program must be either BOC certified or eligible for BOC certification.

Admission Requirements
Meet Graduate College admission standards, successful completion of an undergraduate major or minor or equivalent appropriate for intended emphasis area, submission of GRE scores, submission of a letter of intent to include education, career and/or research goals and philosophy, and three letters of recommendation.

Research Cognate (6 hours)
HPHE 6900 - Research Procedures in Human Performance and Health Education Credits: 3 hours
HPHE 6920 - Analytical Techniques in Human Performance and Health Education Credits: 3 hours

Required Courses (24 hours)
HPHE 6320 - Theories of Strength and Conditioning Credits: 3 hours
HPHE 6810 - Sports Medicine: Applied Anatomy and Physiology Credits: 2 hours
HPHE 6821 - Manual Therapy Techniques in Sports Medicine Credits: 3 hours
HPHE 6830 - Aquatic Therapy Techniques and Rehabilitation Credits: 3 hours
HPHE 6850 - Advanced Techniques in Therapeutic Modalities Credits: 3 hours
HPHE 6880 - Orthopedic Fabrication and Diagnostics in Sports Medicine Credits: 3 hours
HPHE 6890 - Emergency Management in Athletic Training Credits: 3 hours
HPHE 7120 - Professional Field Experience Credits: 1 to 12 hours (Credits: 4 hours needed)

Capstone Experience (6 hours)
Chose one of the following options:

Thesis Option
HPHE 7000 - Master's Thesis Credits: 1 to 6 hours

Independent Research Option
HPHE 7100 - Independent Research Credits: 2 to 6 hours (Credits: 3 hours needed)

Master of Science in Exercise and Sports Medicine (36 credit hours)

Advisor:
Christopher C. Cheatham – Exercise Physiology
Room 4021 Student Recreation Center

The Exercise Physiology program is designed to provide the student with an advanced understanding of the physical and functional adaptations to movement. The program integrates traditional lecture-based courses with hands-on

laboratory experiences. One of the major strengths of the program is the combining of the practical application of exercise physiology with current research findings. Students may also individualize their program of study by choosing from a variety of elective courses offered within many departments across the university. Graduates pursue careers in fitness, athletic, and clinically bases settings. Graduates also pursue advanced degrees in exercise physiology or other professional programs such as physical therapy, medicine, etc.

Admission Requirements
Meet Graduate College admission standards, successful completion of an undergraduate major or minor or equivalent appropriate for intended emphasis area, submission of GRE scores, submission of a letter of intent to include education, career and/or research goals and philosophy, a current resume, and three letters of recommendation.

Research Cognate (6 hours)
HPEH 6900 - Research Procedures Credits: 3 hours
HPHE 6920 - Analytical Techniques Credits: 3 hours

Required courses (18 hours):
HPHE 6700 - Exercise Physiology I Credits: 3 hours
HPHE 6710 - Exercise Physiology II Credits: 3 hours
HPHE 6720 - Lab Techniques in Exercise Science Credits: 3 hours
HPHE 6730 - Biomechanics Credits: 3 hours
HPHE 6740 - Clinical Exercise Physiology Credits: 3 hours
HPHE 6760 - Exercise Science Seminar Credits: 3 hours

Capstone Experience (12 hours)
Choose one of the following:

Thesis Option
HPHE 7000 - Thesis Credits: 6 hours
Electives with advisor approval Credits: 6 hours

Non-Thesis Option
HPHE 7100 - Independent Research Credits: 2 to 6 hours (Credits: 3 hours needed)
Electives with advisor approval Credits: 9 hours
OR
HPHE 7120 - Professional Field Experience Credits: 1 to 12 hours (Credits: 3 hours needed)
Electives with advisor approval Credits: 9 hours

Master of Arts in Physical Education
The Master of Arts in Physical Education prepares teachers, coaches, administrators and supervisors to assume leadership roles. Students can complete all but six of the 36 hours required online. Please take note that this program will not lead to the physical education endorsement. Students who complete the program will not be eligible to add the physical education endorsement to an initial or existing teaching certificate.

Pedagogy
Advisor: Christopher C. Cheatham
2301 Sangren Hall

Master of Arts in Physical Education: Adapted Physical Education

Advisor: Jiabei Zhang
Room 1043 Student Recreation Center

The Master of Arts in Adapted Physical Education is an exciting program structured in a way that allows students to develop a sound professional philosophy, acquire research skills, and increase professional competencies through the completion of a program fully online. The program prepares teachers to provide quality adapted physical education for K-12 children with disabilities in the least restrictive, most appropriate and inclusive environments. Program includes 36 credit hours to complete degree online. Program graduate is endorsed to teach physical education for children with disabilities with a valid teaching certificate in physical education or special education (depending on the certification process in state of residence). Students can choose a thesis or non-thesis internship option. Contact Dr. Jiabei Zhang at ZHANGJ@wmich.edu for application forms.

Coursework required for Master of Arts in Physical Education: Adapted Physical Education:

Core (6 credit hours)
HPHE 6900 - Research Procedures in HPHE Credits: 3 hours
HPHE 6920 - Analytical Techniques in HPHE Credits: 3 hours

Emphasis (18 credit hours)
Physical Education Majors
HPHE 6210 - Physical Activities for Exceptional Children Credits: 3 hours
HPHE 6220 - Programming in Adapted Physical Education Credits: 3 hours
HPHE 6250 - Assessment in Adapted Physical Education Credits: 3 hours
SPED 5300 - Introduction to Special Education Credits: 3 hours
SPED 6380 - Applications of Behavior Analysis in Special Education Credits: 3 hours
SPED 6610 - Transdisciplinary Teaming Credits: 3 hours

Special Education Majors
HPHE 6210 - Physical Activities for Exceptional Children Credits: 3 hours
HPHE 6220 - Programming in Adapted Physical Education Credits: 3 hours
HPHE 6250 - Assessment in Adapted Physical Education Credits: 3 hours
HPHE 6400 - Instructional Materials in Physical Education Credits: 3 hours
HPHE 6410 - Teaching and Supervision Skills in Physical Education Credits: 3 hours
HPHE 6450 - Curriculum Development in HPHE Credits: 3 hours

Electives (6 credit hours)
HPHE 6420 - Human Growth and Motor Development Credits: 3 hours
HPHE 6430 - Physical Skill Acquisition and Motor Learning Credits: 3 hours
HPHE 6450 - Curriculum Development in HPHE Credits: 3 hours
HPHE 6910 - Psychological Preparation and Mental Training for Sport and Physical Activity Credits: 3 hours
HPHE 6930 - Sociology of Sport and Physical Activity Credits: 3 hours

Capstone (6 or 9 credit hours)
HPHE 7120 - Professional Field Experience Credits: 2 to 12 hours (3 credit hours needed)
HPHE 7100 - Independent Research Credits: 2 to 6 hours (3 credit hours needed) or
HPHE 7000 - Thesis Credits: 1 to 6 hours (6 credit hours needed) 3 elective hours only if taking HPHE 7000

Master of Arts in Sport Management (36 credit hours)

Advisor: James Lewis
Room 4024-20 Student Recreation Center

The M.A. in Sport Management is a 36-credit program designed to prepare students to blend general management skills with the specific demands of managing sport organizations. Sport management majors acquire a strong foundation in management theory, financial management, communication, ethics, marketing and promotion, and legal aspects of sport. Specific courses in the sport management curriculum provide students with an understanding of the role of sports in society, the role of management in sports, and the opportunity to apply their knowledge in sports-related internships. Towards this end, all courses are designed to meet and/or exceed national standards set

forth by the Commission of Sport Management Accreditation, and instruction will focus on both theoretical and applied knowledge.

Admission Requirements

Meet university graduate admissions standards, success completion of an undergraduate major or minor or equivalent appropriate for intended emphasis area, submission of a letter of intent to include education, career and/or research goals and philosophy, current resume and two letters of recommendation. Applicants should refer to the program website for future admissions requirements.

Sport Management Core (30 credits)
HPHE 6900 - Research Procedures in HPHE Credits: 3 hours
HPHE 6920 - Analytical Techniques in HPHE Credits: 3 hours
HPHE 6930 - Sociology of Sport and Physical Activity Credits: 3 hours
HPHE 6600 - Governance and Administration of Sport Credits: 3 hours
HPHE 6630 - Ethics in Sport Credits: 3 hours
HPHE 6640 - Marketing and Sales in Sport Credits: 3 hours
HPHE 6650 - Financial and Economic Principles in Sport Credits: 3 hours
HPHE 6660 - Human Resource Management in Sport Credits: 3 hours
HPHE 6690 - Event and Facility Planning and Management Credits: 3 hours

Capstone Experience (6 hours)
Student must have completed 27 credits or receive department approval to begin capstone experience. Choose one of the following:

Thesis Option
HPHE 7000 - Master's Thesis Credits: 1 to 6 hours Credits: 6 hours
OR
Non-Thesis Option
HPHE 7100 - Independent Research Credits: 2 to 6 hours Credits: 3 hours
HPHE 7120 - Professional Field Experience Credits: 1 to 12 hours Credits: 3 hours

Special Education and Literacy Studies

Regena Fails Nelson, Interim Chair
Main Office: 3506 Sangren Hall
Telephone: (269) 387-5935
Fax: (269) 387-5703

Kristal Ehrhardt
Ester Gray
Susan Piazza
Maria Protacio
Shaila Rao
Deanna Roland
Sarah Summy
Elizabeth Whitten

The Department of Special Education and Literacy Studies (SPLS) offers undergraduate and graduate programs focused on preparation of educational professionals with expertise in meeting the needs of K-12 students with diverse abilities. Special education faculty offer a number of program options at the undergraduate, masters, and doctoral levels with an emphasis on the application of research-generated practices to improve students' educational and post-school outcomes. Literacy Studies faculty offer an undergraduate major in English Language Arts, an M.A. in Literacy Studies that leads to the Reading Specialist Endorsement K-12, English as a Second Language (ESL) graduate certificate program, an M.A. in Teaching English to Speakers of Other Languages (TESOL), Ph.D., EHD with concentration areas in Literacy Studies and TESOL, and significant instruction to all WMU elementary and secondary education majors. This instruction integrates teaching literacy and language development throughout the curriculum and across the educational continuum. Within each program area, faculty are engaged in research initiatives that enhance student learning, and school/community engagement. Within the Dorothy J. McGinnis Reading Center and Clinic and the Career Connections Research Center, faculty provide opportunities for WMU students to participate in experimental learning.

Master of Arts in Literacy Studies

Advisors: Selena Protacio, Susan Piazza
4571 Sangren Hall

The Master of Arts in Literacy Studies provides a nationally recognized, standards-based comprehensive professional development program to meet the needs of today's classrooms for continuous literacy instruction K-12 based on current theory, research, and practices. The program is designed to enhance the knowledge and skills of reflective practitioners, as they become school leaders, Reading Specialists, Literacy Coaches, innovative classroom teachers, researchers, and advocates. Reflective practitioners are passionate learners who embrace diversity, actively inquire and reflect upon their own practice, and nurture development of new knowledge and skills. This is accomplished through a process of continuous professional, intellectual, and experiential growth. Graduate students will make connections between and among literacy and learning research, theory, policy, and practice to create and adapt curriculum, instruction, and assessments to meet the needs of all learners and develop the knowledge and skill to fulfill the role of Reading Specialist and/or Literacy Coach across multiple settings.

Admission Requirements

1. Undergraduate grade point average of 3.0 (4.0 = A); graduate grade point average may be accepted upon review of recent and relevant course work completed at an accredited institution.
2. A written statement of purpose (1,000 to 1,500 words) outlining the applicant’s philosophy of teaching and professional goals. The statement of purpose should indicate the candidate’s career expectations and reasons for seeking admission to the program.
3. Three contacts for professional references from persons able to judge the applicant's potential to succeed in a graduate program.

Candidates who meet all admissions criteria will be considered for admission to the program.

Upon admission, each student will be assigned an advisor who will assist in the preparation of a program of study. The program of study should be completed during the first semester of enrollment.

A maximum of nine appropriate Western Michigan University graduate credits taken before admission may be applied to the Master of Arts in Literacy Studies with advisor approval.

Program Requirements (30 hours)

Core Courses (24 hours):
LS 6100 - Theory and Research in Reading and Literacy Instruction Credits: 3 hours
LS 6170 - Reading in the Content Areas Credits: 3 hours
LS 6180 - Literacy Acquisition and Reading Instruction Credits: 3 hours
LS 6240 - Reading Assessment and Effective Instruction Credits: 3 hours
LS 6300 - Teaching Reading in a Diverse Society Credits: 3 hours
LS 6320 - Literacy Coaching Credits: 3 hours
LS 6400 - Clinical Practice for Reading Specialists Credits: 3 hours
LS 6420 - Action Research Seminar Credits: 3 hours

Electives (6 hours):
LS 6330 - Early Childhood Literacy Credits: 3 hours
LS 5220 - Teaching Reading with Children's Literature Credits: 3 hours
LS 6340 - Adolescent Literacy Credits: 3 hours
LS 5260 - Teaching Reading with Adolescent Literature Credits: 3 hours
LS 6350 - Advanced Literacy Coaching Credits: 3 hours
LS 6360 - Advanced Clinical Studies in Reading Credits: 3 hours

Master of Arts in Special Education
Advisors: Kristal Ehrhardt, Daniel Morgan, Shaila Rao, Sarah Summy, Luchara Wallace, Elizabeth Whitten
Sangren Hall

Students may focus their studies on obtaining a special education teaching or administration endorsement, in depth study of special education content for personal growth, or preparation for advanced graduate training. Program concentrations include:

Administration: Program for individuals pursuing leadership positions as central office administrators, supervisors, or directors of special education within a school district or ISD. Candidates must have an elementary or secondary teaching certificate and a special education endorsement or related area certification to enter the program.

Clinical teacher: Program for individuals seeking their first endorsement in special education. Candidates must have an elementary or secondary teaching certification to enter the program.

Master teacher: Program for current special education teachers to become a behavior specialist or earn additional endorsement in cognitive impairment, emotional impairment, or learning disabilities. Candidates must have an elementary or secondary teaching certificate to enter the program.

Admission Procedures by Program
WMU has a new online graduate application system that allows all students (domestic and international) to submit required information into one system. General application information for the University, as well as specific requirements for individual programs, are captured into this one system.

Special Education: Administration (M.A.):
Within the online application system, applicants must provide general information (including educational history details), as well as the following specific program requirements.

Applicants must also request official transcripts, and any required graduate test and/or language proficiency official scores, be sent to WMU.

Application deadlines
On-going; students may be admitted for each semester.

Resume/Curriculum Vitae (CV)
A resume or curriculum vitae (CV) is required; please submit within the online application system.

Graduate test
This program does not require a graduate test.
Note: International applicants may have to provide evidence of English language proficiency. More information can be found within the online application.

Recommendations
This program requires three recommendations. Please send email requests for such recommendations from within the online system.

Written statement
Please prepare a statement which covers the following information, and attach it within the online application:
This program is for certified teachers with at least one endorsement in special education. Please prepare a statement which covers the following information, and attach it within the online application:
In three (3) typed, double-spaced pages or less, address the following areas: (1) State which endorsement you are pursuing: Supervisor or Director; (2) List which teaching certificate you currently hold: elementary, secondary or other; and from what state; (3) List what special education endorsement you already hold; (4) Summarize your prior professional experiences to date; and (5) Identify your professional goals, explaining why an additional special education degree is sought.

Previous written work
This program does not require any previous written work be submitted.

Other program materials
This program does not require any other program materials to be submitted.

Additional information
Note: Students seeking leadership positions in public school administration should have at least three (3) years of professional experience in a special education setting.

Special Education: Clinical Teacher (M.A.):
Within the online application system, applicants must provide general information (including educational history details), as well as the following specific program requirements.
Applicants must also request official transcripts, and any required graduate test and/or language proficiency official scores, be sent to WMU.

Application deadlines
On-going; students may be admitted for each semester.

Resume/Curriculum Vitae (CV)
A resume or curriculum vitae (CV) is required; please submit within the online application system.

Graduate test
This program does not require a graduate test.
Note: International applicants may have to provide evidence of English language proficiency. More information can be found within the online application.

Recommendations
This program requires three recommendations. Please send email requests for such recommendations from within the online system.

Written statement
Please prepare a statement which covers the following information, and attach it within the online application:
This program is for certified teachers pursuing their first endorsement in special education. Please prepare a statement which covers the following information, and attach it within the online application:
In three (3) typed, double-spaced pages or less, address the following areas: (1) State which endorsement you are pursuing: EI (Emotional Impairments), CI (Cognitive Impairments), or LD (Learning Disabilities); (2) List which teaching certificate you currently hold: elementary, secondary or other; and from what state; (3) Summarize your prior professional experiences to date; and (4) Identify your professional goals, explaining why an additional special education degree is sought.

Previous written work
This program does not require any previous written work be submitted.

Other program materials
Attach a copy of your Teaching Certificate and Endorsements (if you have any).

Additional information
None

Special Education: Master Teacher (M.A.):
Within the online application system, applicants must provide general information (including educational history details), as well as the following specific program requirements.
Applicants must also request official transcripts, and any required graduate test and/or language proficiency official scores, be sent to WMU.

Application deadlines
On-going; students may be admitted for each semester.

Resume/Curriculum Vitae (CV)
A resume or curriculum vitae (CV) is required; please submit within the online application system.

Graduate test
This program does not require a graduate test.
Note: International applicants may have to provide evidence of English language proficiency. More information can be found within the online application.

Recommendations
This program requires three recommendations. Please send email requests for such recommendations from within the online system.

Written statement
Please prepare a statement which covers the following information, and attach it within the online application:
This program is for certified teachers with at least one endorsement in special education. Please prepare a statement which covers the following information, and attach it within the online application:
In three (3) typed, double-spaced pages or less, address the following areas: (1) State which endorsement you are pursuing: EI (Emotional Impairments), CI (Cognitive Impairments), or LD (Learning Disabilities), Behavior Intervention or Autism; (2) List which teaching certificate you currently hold: elementary, secondary or other; and from what state; (3) List what special education endorsements you already hold; (4) Summarize your prior professional experiences to date; and (5) Identify your professional goals, explaining why an additional special education degree is sought.

Previous written work
This program does not require any previous written work be submitted.

Other program materials
Attach a copy of your Teaching Certificate and Endorsements (if you have any).

Additional information
None

Application Review
Applications are evaluated on the basis of: 1) undergraduate grade point average, minimum GPA of 3.0 (a graduate grade point average may be considered if at least 9 hours of recent and relevant course work have been completed), 2) experience in special education, general education, or a related field, 4) congruence of professional goals and requested program option, 5) writing skills, 6) professional references. International students must submit a CELCIS transcript with a minimum grade of "BA" or a TOEFL score of 550 or better to be considered for admission. Admission deadlines are on-going and students may be admitted each semester.

Program Requirements (all options)

All students who receive a Master of Arts in Special Education must complete the following requirements:

1. A minimum of 30 semester hours of graduate coursework with a minimum GPA of 3.00. Advisors will designate specific course requirements for each option described below.
2. A capstone experience. This may take the form of a comprehensive written examination or a capstone course. The capstone experience, whether it is a capstone course or a comprehensive examination, is to be taken at the end of an academic program. It is recommended that the capstone experience be the final, culminating activity in the Master of Arts in Special Education program. Responsibility for scheduling the capstone is assumed by graduate students in consultation with their program advisors.

Master Teacher Option
This option is designed for persons who have special education certification and who plan to remain directly involved with students with disabilities in an instructional capacity or who plan to pursue advanced graduate preparation beyond the master's degree. Additional special education teaching endorsements or concentrations that can be earned through this option are Autism, Behavioral Specialist, Cognitive Impairment, Emotional Impairment, and Learning Disabilities.

Prerequisites

1. Michigan Teaching Certificate or equivalent
2. Endorsement or other teaching credential in at least one area of Special Education or related area
3. Admission by Department of Special Education and Literacy Studies

Clinical Teacher Option
This option is available to certified teachers seeking a master's degree and an initial endorsement in one of the following areas of special education: Autism, Cognitive Impairment, Emotional Impairment, and Learning Disabilities.

Prerequisites

1. Michigan Teaching Certificate or equivalent
2. Admission by Department of Special Education and Literacy Studies

Special Education Technology Option (no longer offered)
This option, designed for persons who have special education certification, provides comprehensive knowledge, skills, and experience in the development and use of various special education technologies.

Prerequisites

1. Michigan Teaching Certificate or equivalent

2. Endorsement in at least one area of Special Education
3. Admission by Department of Special education and Literacy Studies

Special Education Administration Option
This option, designed for certified and experienced special education teachers, provides course work and field-based experiences necessary to gain Michigan K-12 Administrator Certificate & Basic Principle Endorsement with Special Education Director or Supervisor approved.

Prerequisites
1. Michigan Teaching Certificate or equivalent
2. Endorsement in at least one area of Special Education
3. Admission by Department of Special Education and Literacy Studies

Master Teacher Option
This option is designed for persons who have special education certification and who plan to remain directly involved with students with disabilities in an instructional capacity or who plan to pursue advanced graduate preparation beyond the master's degree. Additional special education teaching endorsements or concentrations that can be earned through this option are Autism, Behavioral Specialist, Emotional Impairment, Learning Disabilities, Cognitive Impairment, and Visual Impairment.

Prerequisites
1. Michigan Teaching Certificate or equivalent
2. Endorsement or other teaching credential in at least one area of Special Education or related area
3. Admission by Department of Special Education and Literacy Studies

Clinical Teacher Option
This option is available to certified teachers seeking a master's degree and an initial endorsement in one of the following areas of special education: Autism, Emotional Impairment, Learning Disabilities, or Cognitive Impairment.

Prerequisites
1. Michigan Teaching Certificate or equivalent
2. Admission by Department of Special Education and Literacy Studies

Special Education Technology Option (no longer offered)
This option, designed for persons who have special education certification, provides comprehensive knowledge, skills, and experience in the development and use of various special education technologies.

Prerequisites
1. Michigan Teaching Certificate or equivalent
2. Endorsement in at least one area of Special Education
3. Admission to the Department of Special Education and Literacy Studies

Special Education Administration Option
This option, designed for certified and experienced special education teachers, provides course work and field-based experiences necessary to gain Michigan K-12 Administrator Certificate & Basic Principle Endorsement with Special Education Director or Supervisor approved.
Prerequisites
1. Michigan Teaching Certificate or equivalent
2. Endorsement in at least one area of Special Education
3. Admission by Department of Special Education and Literacy Studies

Master of Arts in Teaching Children Who Are Visually Impaired
Advisor: Robert Wall Emerson
College of Health and Human Services

This 44 hour degree program prepares teachers to work with children with visual impairments in public and residential schools. Instruction is provided in skills to support the regular educational curriculum as well as the expanded core curriculum specific to children with visual impairments. Graduates are eligible to become certified teachers of children with visual impairments. Students may choose to combine this degree program with preparation as an orientation and mobility specialist to attain dual competency in the Master of Arts in Teaching Children Who are Visually Impaired/Master of Arts in Orientation and Mobility for Children program.

Admission Requirements
Students seeking admission to the Master of Arts in Teaching Children Who Are Visually Impaired program should request a Master's Degree Program Application packet from the Department of Blindness and Low Vision Studies.

Program Requirements
The program requires the satisfactory completion of:
BLS 5440 - Educating Individuals with Severe Impairments Credits: 3 hours
BLS 5840 - Computer Technology in Rehabilitation Credits: 3 hours
BLS 5880 - Psychosocial Aspects of Disability Credits: 2 hours
BLS 5900 - Physiology and Function of the Eye Credits: 2 hours
BLS 5910 - Braille and Other Tactual Communication Systems Credits: 3 hours
BLS 5912 - Teaching Math and Specialty Codes Credits: 2 hours
BLS 5930 - Methods of Teaching Adaptive Communications Credits: 2 hours
BLS 5945 - Itinerancy and Effective School Collaboration Credits: 2 hours
BLS 5970 – Principles of Low Vision Credits: 2 hours
BLS 6010 - Small “N” Research: Design and Analysis Credits: 3 hours
BLS 6050 - Practice in Low Vision Credits: 1 hour
BLS 6060 - Adaptive Sports Activities for Visually Impaired Children Credits: 1 hour
BLS 6070 - Adaptive Art Activities for Visually Impaired Children Credits: 1 hour
BLS 6100 - Assisted Research Credits: 1 to 6 hours (Credits needed: 2 hours)
BLS 6320 - Teaching Children with Visual Impairments Credits: 3 hours
BLS 6360 - Teaching for Independent Living Credits: 4 hours
BLS 6955 - Practicum in TCVI Credits: 2 hours
BLS 7120 - Professional Field Experience Credits: 2 to 12 hours (Credits needed: 6 hours)

Master of Arts in Teaching Children Who Are Visually Impaired/Orientation and Mobility for Children
Advisor: Donna Lee
College of Health and Human Services

This dual degree program is offered through the Teaching Children Who Are Visually Impaired/Orientation and Mobility for Children program (SEO) which is jointly administered by the Department of Blindness and Low Vision Studies and the Department of Special Education and Literacy Studies.

This 65 hour degree program prepares a dual competency practitioner who is able to serve in the schools as a teacher of children who are visually impaired and as an orientation and mobility specialist. Two degrees are offered in this option: One, a Master of Arts in Teaching Children Who Are Visually Impaired (from the Department of Special Education and Literacy Studies) and the other, a Master of Arts in Orientation and Mobility with a Concentration in Teaching Children (from the Department of Blindness and Low Vision Studies). Graduates of this program are eligible to become certified teachers and certified orientation and mobility specialists (COMS). It is also possible to specialize in only one of these degrees.

Program Requirements
The program requires the satisfactory completion of:
BLS 5840 - Computer Technology in Rehabilitation Credits: 3 hours
BLS 5880 - Psychosocial Aspects of Disability Credits: 2 hours
BLS 5900 - Physiology and Function of the Eye Credits: 2 hours

BLS 5910 - Braille and Other Tactual Communication Systems Credits: 3 hours
BLS 5920 - Orientation and Mobility with Children Credits: 3 hours
BLS 5930 - Methods of Teaching Adaptive Communications Credits: 2 hours
BLS 5950 - Introduction to Orientation and Mobility Credits: 2 to 4 hours Credits: 4 hours needed
BLS 5970 – Principles of Low Vision Credits: 2 hours
BLS 6040 - Issues in Travel Credits: 2 hours
BLS 6050 - Practice in Low Vision Credits: 1 hour
BLS 6060 - Adaptive Sports Activities for Visually Impaired Children Credits: 1 hour
BLS 6070 - Adaptive Art Activities for Visually Impaired Children Credits: 1 hour
BLS 6360 - Teaching for Independent Living Credits: 4 hours
BLS 6950 - Practicum in Orientation and Mobility Credits: 1 to 3 hours Credits: 2 hours needed
BLS 7120 - Professional Field Experience Credits: 2 to 12 hours Credits: 6 hours needed
SPED 6370 - Applications of Research in Special Education Credits: 3 hours
SPED 6610 - Transdisciplinary Teaming Credits: 3 hours
SPED 6740 - Intern Teaching in Special Education Credits: 6 hours
SPED 7120 - Professional Field Experience Credits: 2 to 12 hours Credits: 2 hours needed

Additional Requirements
In addition, students will complete two 4-hour comprehensive exams (each program requires a comprehensive exam) as their capstone requirement.

Master of Arts in Teaching English to Speakers of Other Languages
Advisors: Selena Protacio, Virginia David, Hsiao-Chin Kuo, Susan Piazza

This master's degree program is designed to prepare educators to meet the unique needs of children and adults learning English as a second language in K-12 schools and tertiary education settings in the United States of America and worldwide. Graduates of this master's degree program will be eligible for the Michigan Department of Education's ESL endorsement.

This program is designed to meet the needs of teachers who:

- Are seeking to advance in their careers by obtaining a master's degree;
- Would like to learn about second language acquisition theories and teaching methodologies;
- Are interested in becoming ESL teachers in K-12 schools and/or colleges and universities in the United States and other countries;
- Desire to teach in schools with a significant population of English Language Learners;
- Desire to become a district ESL coach or coordinator (requires MDE ESL endorsement);
- Want to teach in English language programs for international students in colleges and universities;
- Plan to teach in English language institutes.

Admission Requirements
- Bachelor's degree with a minimum GPA of 3.0.
- One page statement explaining applicant's interest in this master's degree program.
- Three professional letters of reference.
- Meet university requirements for graduate level admissions for domestic and international students. Graduate student application: http://www.wmich.edu/apply/graduate/. International application: http://www.wmich.edu/apply/international.
- For international students, minimum iBT TOEFL score of 89 with a minimum subscore of 20 for writing or a minimum IELTS score of 6.5 with a minimum subscore of 6 for writing. Provisional admission would require a minimum iBT TOEFL score of 70 and a minimum IELTS score of 6.

Program Requirements

Students will complete a planned program of study consisting of 30 credits of coursework for the master's degree, 24 of which would lead to the Michigan Department of Education's ESL endorsement to be added to an initial teaching certificate. An overall program grade point average of 3.0 or better is required to continue in this master's program.

Required Courses:
TEL 5150 - Introduction to ESL/Bilingual Education Credits: 3 hours
TEL 5200 - Linguistic Principles for ESL and Bilingual Education Credits: 3 hours
TEL 6210 - ESL Teaching Methods Credits: 4 hours
TEL 6310 - Advanced ESL Teaching Methods Credits: 4 hours
TEL 6220 - Standards and Assessments in ESL Education Credits: 3 hours
TEL 6320 - Advanced Standards and Assessments in ESL Education Credits: 4 hours
TEL 6350 - Research Methods in TESOL Credits: 3 hours
TEL 6450 - Capstone in TESOL Credits: 3 hours

Choose one elective from the following courses:
LS 5100 - Diversity in Language, Literacy, and Learning Credits: 3 hours
LS 6300 - Teaching Reading in a Diverse Society Credits: 3 hours
TEL 6700 - Special Topics in TESOL Credits: 3 hours

Doctor of Education in Special Education
Advisors: Kristal Ehrhardt, Daniel Morgan, Shaila Rao, Sarah Summy, Luchara Wallace, Elizabeth Whitten
Sangren Hall

The Doctor of Education in Special Education prepares individuals to assume leadership roles in special education, serving as faculty in institutions of higher education, consultants to educational agencies, and administrators in special education programs. Graduates of WMU Special Education doctoral program are prepared to contribute to the knowledge and research base in education and to be discerning consumers of evidence-based practices in education.

Applicants are expected to satisfy all requirements for admission to doctoral programs specified by the Graduate College. Prospective students must also have acquired a minimum of two years of successful professional experience in serving persons with disabilities. Admission to the program is contingent upon a satisfactory score on the Graduate Record Examination and the successful completion of a personal interview with a committee comprised of graduate faculty of the Special Education program in the Department of Special Education and Literacy Studies. Application materials are available from the Office of Admissions and from the Department of Special Education and Literacy Studies. Acceptance to the program is contingent upon alignment of program competencies and the applicant's interests and experiences.

Following the interview with the applicant, at least one member of the graduate faculty of the department must express a willingness to work with the student as program advisor in order for the student to be accepted into the program. If two or more faculty members indicate a willingness to advise the applicant, the department chair will designate one to become program advisor. The program advisor will work with the student in developing the student's overall program and may or may not become the student's dissertation advisor.

Upon acceptance to the department, a Program Advisor will be designated to work with the student in developing the student's overall program. In addition to the prescribed course work, the student will complete an internship in college teaching in special education. During the last semester of course work, the student will be required to complete successfully a written comprehensive examination.

All students in the program will be required to successfully complete a scholarly dissertation. Following the guidelines established by the Graduate College, the student will select a dissertation advisor and a dissertation committee who will guide the student in the development of a dissertation. Following the completion of the dissertation, the student will be required to successfully complete an oral defense of the dissertation as per Graduate College policy.

Certificate Program in English as a Second Language Teaching
Advisors: Virginia David, Hsiao-Chin Kuo, Selena Protacio, Susan Piazza

This graduate level certificate program is designed to prepare educators to meet the unique needs of English Language Learners in K-12 schools. Graduates of this certificate program will be eligible for the Michigan Department of Education's ESL endorsement upon completion of one additional course (TEL 6220).

This program is designed to meet the needs of teachers who:

- Are interested in becoming ESL teachers (requires MDE ESF endorsement),
- Want to meet both the language and content needs of their English Language Learners,
- Want to teach in schools with a significant population of English Language Learners,
- Desire to become a district ESL coach or coordinator (requires MDE ESL endorsement),

Admission Requirements

- Bachelor's degree and prior teaching experience
- Initial teacher certification for those who are seeking the ESL endorsement
- One page statement explaining applicant interest in this certificate/endorsement program
- Three professional letters of reference
- Meet University requirements for graduate level admission

Students will complete a planned program of study consisting of 24 credits. An overall program grade point average of 3.0 or better is required to continue in this certificate/endorsement program.

The required courses for certificate/endorsement include:
TEL 5150 - Introduction to ESL/Bilingual Education Credits: 3 hours
TEL 5200 - Linguistic Principles for ESL and Bilingual Education Credits: 3 hours
TEL 6210 - ESL Teaching Methods Credits: 4 hours
TEL 6220 - Standards and Assessments in ESL Education Credits: 3 hours
TEL 6310 - Advanced ESL Teaching Methods Credits: 4 hours
TEL 6320 - Advanced Standards and Assessments in ESL Education Credits: 4 hours

Choose an elective from one of the following courses:
LS 5100 - Diversity in Language, Literacy, and Learning Credits: 3 hours
LS 6300 - Teaching Reading in a Diverse Society Credits: 3 hours

Certificate Program in Positive Behavior Interventions and Supports (PBIS)
Advisors: Kristal Ehrhardt, Dan Morgan, Shaila Rao, Sarah Summy, Elizabeth Whitten, Luchara Wallace
Room 4571 Sangren

This graduate level certificate program is designed for educators and related service personnel to meet the unique behavioral needs of learners in K-12 environments through systemic, positive, prevention focused, and data-based decision making. This certificate is fully online.

This program is designed to meet the needs of educators and related service personnel who:

- Are interested in specializing in Positive Behavioral Interventions and Supports
- Want to be able to provide Professional Development in Positive Behavioral Interventions and Supports
- Desire to become a leader in Positive Behavioral Interventions and Supports

Admissions criteria:

1. Bachelor's degree

2. Initial teaching certificate and/or endorsement in Special Education or Related Service Area
3. Experience in K-12 schools
4. One page statement explaining applicant interest in this certificate
5. Three professional letters of reference
6. Meet University Requirements for Graduate Level Admission

Program Requirements:
Courses required to complete the Certificate (minimum 15 credits)
SPED 6380 - Applications of Behavior Analysis in Special Education Credits: 3 hours
SPED 6381 - School-Wide Positive Behavior Support Credits: 3 hours
SPED 6382 - Intensive Interventions for Challenging Behaviors Credits: 3 hours
SPED 6655 - Coaching Classroom Management Credits: 3 hours
SPED 6300 - Clinical Practice in Special Education Credits: 3 hours

Note:
Following University and Graduate College Policies, individuals who earn the Certificate in Positive Behavioral Interventions and Supports may apply to the Master of Arts in Special Education-Concentration Behavior Specialist and use the courses completed toward their degree. Additionally, students pursuing the Ed.D. in Special Education may complete the certificate as part of their doctoral program.

Teaching, Learning and Educational Studies

Regena Fails Nelson, Chair
Main Office: 4121 Sangren Hall
Telephone: (269) 387-3465
Fax: (269) 387-3880

Ariel Anderson
Amy Bentz
Paul Farber
Marcia Fetters
Allison Hart-Young
Jill Hermann-Wilmarth
Lynn Nations Johnson
Jeffrey Jones
Tetyana Koshmanova
Dennis Metro-Roland
James Muchmore
Andrea Smith
Paul Vellom

Master of Arts in Educational Foundations

Advisors: Paul Farber, Dini Metro-Roland, Tetyana Koshmanova, Jill Hermann-Wilmarth
Room 4121, Sangren Hall
Telephone: (269) 387-3465

Admission Requirements
1. Undergraduate grade point average of 3.0 (4.0 = A); graduate grade point average may be accepted upon review of recent and relevant course work completed at an accredited institution.
2. A written statement of purpose (1,000 to 1,500 words). The statement of purpose should indicate the candidate's career expectations and reasons for seeking admission to the program.
3. Congruence of applicant's goals and the program concentration.
4. Two letters of recommendation from persons able to judge the applicant's potential to succeed in a graduate program.

Program Requirements
1. Teaching, Learning, and Educational Studies Core (9 hours)
ED 6010 - Introduction to Research in Educational Settings Credits: 3 hours
ES 6330 - Education and Human Flourishing Credits: 3 hours
ES 6340 - Culture and Politics of Educational Institutions Credits: 3 hours

2. Educational Foundations (9 hours)
Select two courses from the following:
ES 6030 - Social and Philosophical Foundations Credits: 3 hours
ES 6290 - Culture and Schooling Credits: 3 hours
ES 6300 - History of Education in the United States Credits: 3 hours
ES 6730 - Class, Ethnicity, and Gender in Education Credits: 3 hours
ES 6750 - Multicultural Education Credits: 3 hours

3. Curriculum Studies (3 hours)
Select one course in curriculum from the following:
ED 6020 - School Curriculum and Assessment Credits: 3 hours
ED 6280 - Curriculum Theory Credits: 3 hours

4. Electives (6 hours):

Advisor approved graduate courses, normally from outside the department, which support a particular scholarly interest.

5. Capstone Research Project or Master's Thesis (3 or 6 hours)
ED 6790 - Capstone Research Project Credits: 3 hours OR
ED 7000 - Master's Thesis Credits: 6 hours

Master of Arts in the Practice of Teaching

Coordinators/Advisors: Amy Betz (Foundations of Teaching), Lynn Nations Johnson (Curriculum & Instruction), Regena Fails Nelson (Early Childhood), Andrea Smith (Early Childhood), Paul Vellom (Curriculum & Instruction), Dini Metro-Roland (Curriculum & Instruction).

Contact person:
Tamara Klinger
4121 Sangren Hall
(269) 387-3465
e-mail: tammie.klinger@wmich.edu

The Master of Arts in the Practice of Teaching provides a comprehensive professional development program for current Pre K-12 teachers. In order to address the ever-changing and complex challenges faced by today's teachers, this degree allows teachers, along with their academic advisors, to customize programs of study to meet individual needs and professional goals.

The Master of Arts in the Practice of Teaching is designed to enhance the knowledge and skill of reflective practitioners for a variety of educational settings. It is our belief that teachers ought to be effective practitioners, leaders, change agents, intellectuals, researchers, and learners. They should be passionate learners who embrace diversity, actively inquire and reflect upon their own practice, nurture the development of new knowledge and skills, and weave the complexities of modern society into the learning process. This is accomplished through a process of continuous professional, intellectual, and social growth within an interrelated spiral of academic content preparation, professional knowledge, pedagogical skill, and guided practice. The Master of Arts in the Practice of Teaching is predicated on the assumption that theory, research, policy, and practice must be continuously integrated in ways that provide innovative models leading to the improvement of teaching, learning, and reflective practice.

The goal of reflective practice is to help teachers develop the ability to analyze their own teaching, inquire into how teaching can be improved, and develop strategies to improve teaching that build on individual strengths. Reflective practitioners must also be able to situate their practice within the social, cultural, and economic dimensions of relationships among schooling, society, and the natural environment. It requires teachers to examine, interpret, and evaluate the teaching-learning process using the best practices described by research and experience as the referent for reflection.

Admission Requirements

1. Bachelor's degree from an accredited institution.
2. An overall grade point average of at least 3.0 (on a 4 point scale) in the last two years of undergraduate work. Applicants with a GPA of less than 3.0 may be granted a Conditional Admission. This will be converted to a regular admission if students receive a grade of "B" or better in the first two graduate courses (six credit-hours) taken.
3. A concise written "statement of purpose" (250 words) indicating the applicant's reasons for seeking admission to the program and what the applicant hopes to accomplish during the program of study. Congruence of applicant's written "statement of purpose" with the parameters of this degree program. Experience in a professional setting.*
4. A valid Michigan Teaching Certificate** will be required for students seeking to obtain additional endorsements.

*Waived for individuals in "Early Elementary Teaching" concentration seeking initial certification.
**Required only for individuals seeking to obtain additional endorsements.

A review of transcripts will be required for students in the Early Elementary Teaching concentration to determine if the student has taken 45 credits of required content pre-requisites for elementary education certification.

Upon admission, each student will be assigned an advisor who will assist in the preparation of a program of study. The program of study should be prepared during the first semester of enrollment.

A maximum of 9 Western Michigan University graduate credits taken before admission may be applied to the Master of Arts in the Practice of Teaching with advisor approval.

Program Requirements
(30 – 33 hours) for practicing teachers
(57 hours) for individuals in "Early Elementary Teaching" concentration

1. Foundations of Practice (12-15 hours)
ES 6330 - Education and Human Flourishing Credits: 3 hours
ES 6340 - Culture and Politics of Educational Institutions Credits: 3 hours
ED 6010 - Introduction to Research in Educational Settings Credits: 3 hours

Note: ED 6330 and ED 6340 are prerequisites for ED 6010 and should be taken early in the program if possible. In addition, students must complete 21 hours in their masters program before enrolling in ED 6010.

Take either:
ED 6790 - Capstone Credits: 3 hours
Or
ED 7000 - Thesis Credits: 6 hours

2. Area of Specialization (18 hours)

Students may select, with the approval of their assigned advisor, 18 semester hours in one of several areas of specialization. (*Examples of specialized programs follow below*.)

Program Examples

Example 1: Specialization in Early Childhood Education General and Special Education (ZS endorsement)

Program Requirements

1. Foundations of Practice (12-15 hours)
ES 6330 - Education and Human Flourishing Credits: 3 hours
ES 6340 - Culture and Politics of Educational Institutions Credits: 3 hours
ED 6010 - Introduction to Research in Educational Settings Credits: 3 hours

Select either:
ED 6790 - Capstone Credits: 3 hours
Or
ED 7000 - Thesis Credits : 6 hours

2. Area of Specialization (18 hours)
ED 5750 - Administration of Child Development Center Credits: 3 hours
ED 6060 - Early Childhood Education Methods and Materials Credits: 3 hours
ED 6080 - Early Childhood Development Credits: 3 hours
ED 6110 - Early Child Assessment Credits: 3 hours
ED 6140 - Engaging Diverse Families in Educational Settings Credits: 3 hours
LS 5160 – Professional Symposium in Reading Credits: 3 hours

(Required by the State of Michigan for Professional Certification. Students should take this course within their first 10 graduate credits.)

Example 2: K-12 Curriculum and Instruction

Program Requirements

1. Foundations of Practice (12-15 hrs)
ES 6330 - Education and Human Flourishing Credits: 3 hours
ES 6340 - Culture and Politics of Educational Institutions Credits: 3 hours
ED 6010 - Introduction to Research in Educational Settings Credits: 3 hours

Select either:
ED 6790 - Capstone Credits: 3 hours
Or
ED 7000 – Thesis Credits : 6 hours

2. Area of Specialization (18 hours)
ED 6000 - Fundamentals of Measurement and Evaluation Credits: 3 hours
ED 6020 - School Curriculum and Assessment Credits: 3 hours
ED 6280 - Curriculum Theory Credits: 3 hours
ED 6360 - Classroom Pedagogy: The Art and Science of Teaching Credits: 3 hours
ED 6700 - Authority and Autonomy in Schooling Credits: 3 hours
LS 5160 - Professional Symposium in Reading Credits: 3 hours
(Required by the State of Michigan for Professional Certification. Students should take this course within their first 10 graduate credits.)

Example 3: Curriculum & Instruction: Culturally Diverse Students and Social Justice

Program Requirements

1. Foundations of Practice (12-15 hrs)
ED 6010 - Introduction to Research in Educational Settings Credits: 3 hours
ES 6330 - Education and Human Flourishing Credits: 3 hours
ES 6340 - Culture and Politics of Educational Institutions Credits: 3 hours

Select either:
ED 6790 - Capstone Credits: 3 hours
Or
ED 7000 - Thesis Credits : 6 hours

2. Area of Specialization (18 hours)
ED 6020 - School Curriculum and Assessment Credits: 3 hours
ED 6700 - Authority and Autonomy in Schooling Credits: 3 hours
ES 6730 - Class, Ethnicity, and Gender in Education Credits: 3 hours
ES 6750 - Multicultural Education Credits: 3 hours
ED 6760 - Learning in Social Contexts Credits: 3 hours
LS 5160 - Professional Symposium in Reading Credits: 3 hours
(Required by the State of Michigan for Professional Certification. Students should take this course within their first 10 graduate credits.)

Early Elementary Teaching Concentration - Initial Teacher Certification

Program Requirements:

1. Foundation of Practice (15 hours)

ES 6150 - Education From a Socio-Cultural Perspective Credits: 3 hours
ED 6010 - Introduction to Research in Educational Settings Credits: 3 hours
ED 6790 - Capstone Research Project Credits: 3 hours
ED 7120 - Professional Field Experience Credits: 1 to 12 hours
(Credits: 6 hours needed)

2. Area of Specialization (42 hours)
ED 6060 - Early Childhood Education Methods and Materials Credits: 3 hours
ED 6080 - Seminar in Early Childhood Development Credits: 3 hours
ED 6140 - Engaging Diverse Families in Educational Settings Credits: 3 hours
ED 6110 - Assessment in Early Childhood Inclusive Education Credits: 3 hours
ED 5750 - Administration of Child Development Centers Credits: 3 hours
ED 6050 - Teaching of Social Studies in the Elementary Schools Credits: 3 hours
ED 4300 - Creativity in the Elementary Classroom Credits: 3 hours
ED 5020 - Curriculum Workshop Credits: 1 to 6 hours
ED 6700 - Authority and Autonomy in Schooling Credits: 3 hours
HPHE 6450 - Curriculum Development in Human Performance and Health Education Credits: 3 hours
MATH 6510 - Studies in Teaching Elementary School Mathematics Credits: 3 hours
LS 6170 - Reading in the Content Areas Credits: 3 hours
LS 6180 - Literacy Acquisition and Reading Instruction Credits: 3 hours
SPED 5340 - Evidence Based Interventions I: Foundations of Reading, Written Language and Content Areas
Credits: 3 hours

Master of Arts in Teaching
Concentration: Secondary Science Teacher Education
Concentration: Secondary Mathematics Teacher Education

Advisor: Amy Bentz

Contact Person: Tamara Klinger
4121 Sangren
269-387-3465
tammie.klinger@wmich.edu

The Master of Arts in Teaching is a post-baccalaureate program for initial teacher certification in the areas of mathematics and science. This program is based on the reflexive practitioner model, which emphasizes reflection on active learning to develop content expertise and effective approaches to leadership. The aim of this program is to create scholars, who embrace diversity, actively engage in inquiry and critical thinking, and who are willing to act as change agents and advocates for youth.

The Master of Arts in Teaching program requires applicants to hold a bachelor's degree in science, technology, engineering or mathematics-related field. Upon admission, teacher candidates undertake an intensive program of study, including coursework in both Summer I and II sessions. During the fall semester, teacher candidates begin their field placements when the public schools begin and spend a minimum of three days a week in the classroom and one day a week on campus. Candidates will complete a full time (5 days/week) internship from January through mid-June, following the school district's schedule. Most candidates can complete all requirements for certification within 15 months of starting coursework. To complete the Master of Arts in Teaching, three additional courses are required after certification.

<u>Admission Requirements</u>

1. Bachelor's degree from an accredited institution in an appropriate secondary education discipline. Transcript evaluation will determine what additional discipline area coursework will be required.
2. An overall grade point average of at least 3.0 (4.0 = A) in the last two years of undergraduate work. Applicants with a GPA of less than 3.0 may be granted a Conditional Admission. This will b converted to a

regular admission if students receive a grade of "B" or better in the first two graduate courses (six credit hours) taken.

3. A concise written "statement of purpose" (250 words or less) indicating the applicant's reasons for seeking admission to the program and what the applicant hopes to accomplish during the program of study.
4. Congruence of applicant's written "statement of purpose" with the parameters of this degree program.
5. Three written recommendations.
6. Acceptable scores on the Michigan Test for Teacher Certification (MTTC) - Professional Readiness Exam (PRE), and at least one secondary education content area (i.e., biology, chemistry, physics, earth science, or mathematics).

Applications for this program are accepted June 15 through March 15 of each year with selection and admission determined by April 15. Coursework begins during summer I session.

Upon admission, each student will be assigned an advisor who will assist in the preparation of a program of study. The program of study should be completed during the first semester of enrollment.

Program Requirements
35-45 hours depending on content discipline.

Year 1
Summer Coursework (taken across summer I and summer II)
Candidates may also be participating in additional seminars and workshops, and field experiences during the summer, and should plan to be on campus a minimum of four days a week from mid-May through mid-August.

ED 6035 - Risk and Resilience in Adolescent Development Credits: 3 hours
ES 6150 - Education From a Socio-Cultural Perspective Credits: 3 hours
SCI 6205 - Science Content and Pedagogy in the Secondary School Credits: 3 hours
And/Or
ED 6605 - Mathematical Thinking Grades 6-12 Credits: 3 hours

Fall Coursework
Candidates will spend a minimum of three days/week in the classroom and one day/week on campus.

LS 6870 - Strategic Learning through Texts for High School Teachers Credits: 3 hours
(Required by the State of Michigan for Professional Certification.)
SPED 6290 - Secondary ED Inclusive Practices Credits: 3 hours
ED 6445 - Secondary School Field Experience Credits: 4 hours
SCI 6305 - Science Teaching and Learning in the Secondary School Credits: 3 hours
And/Or
ED 6615 - Mathematics Curriculum Grades 6-12 Credits: 3 hours

Spring Coursework
Candidates will spend five days/week in the classroom. The internship follows district calendars and do not conclude at the end of the WMU semester, but when districts close for the summer.

ED 6452 - Secondary School Internship Credits: 6 to 10 hours
ED 6455 - Secondary School Internship Seminar Credits: 1 hour

Note:
Teacher candidates can qualify for certification at conclusion of these courses in early/mid-June.

Year 2
To complete the Master of Arts in Teaching degree, teacher candidates must complete the following courses:

LS 5160 - Professional Symposium in Reading Credits: 3 hours
ED 6010 - Introduction to Research in Educational Settings Credits: 3 hours

ED 6790 - Capstone Research Project Credits: 3 hours

Concentration: Teaching Chinese as a Second Language
Coordinator: Moi Mooi Lew
4121 Sangren
(269) 387-3496
moimooi.lew@wmich.edu

Contact Person: Tamara Klinger
4121 Sangren
(269) 387-3465
tammie.klinger@wmich.edu

The Master of Arts in Teaching with a concentration in Teaching Chinese as a Second Language is a post baccalaureate initial teacher certification program designed for teacher candidates with Chinese language proficiency. This cohorted program, which requires a bachelor's degree in Chinese International Education (or equivalent) from a Chinese university, will result in Michigan certification to teach Chinese language and culture in K-12 settings.

The 20-month program includes four school-based field experiences designed to familiarize teacher candidates with the culture and contexts of American education. The first field experience consists of a series of focused observations in American elementary, middle and high schools, examining issues such as school structure and governance, curriculum, pedagogy, and classroom organization. During the second field experience, a supervised pre-internship, the teacher candidate will spend one semester (i.e., at least 75 hours) in a Chinese language classroom in which American students are learning Chinese as a second language. The third field experience involves teaching within the context of a multi-week summer camp for local K-8 children who are interested in learning about Chinese language and culture. The final field experience is a semester-long internship in which teacher candidates will either be placed with a mentor who teaches Chinese language and culture at all grade levels, or they will split their internship between two settings: one elementary and the other secondary.

Embedded within the pre-internship and internship experiences is a weekly seminar that addresses such issues as curriculum, assessment, pedagogy, organization of learning environments, leadership, and child and adolescent development.

Admission Requirements
1. Bachelor's degree in Chinese International Education (or equivalent).
2. Undergraduate transcript.
3. An overall grade point average of at least 3.0 (4.0 = A).
4. Three letters of recommendation.
5. A concise written "statement of purpose" (250 words or less) indicating the applicant's reasons for seeking admission to the program and what the applicant hopes to accomplish during the program of study.
6. A passing score on the Michigan Professional Readiness Exam or a state-approved equivalent test. The basic skills examination scores can be submitted after admission into the program.
7. A minimum TOEFL score of 91.

Program Requirements (33 hours)
Year 1 - Fall Coursework
ES 6300 - History of Education in the United States Credits: 3 hours
ED 7120 - Professional Field Experience Credits: 1 to 12 hours
A directed field experience in a K-12 setting. Credits needed: 1 hour.
CHIN 5200 - Topics in Chinese Linguistics and Language Science Credits: 3 hours

Spring Coursework
ED 7120 - Professional Field Experience Credits: 1 to 12 hours

A supervised K-12 pre-internship and seminar. This weekly seminar will address issues such as curriculum, assessment, pedagogy, organization of learning environments, leadership, and child and adolescent development. Credits needed: 3 hours.
LANG 5580 - Second Language Acquisition and Teaching Instruction Credits: 3 hours
SPED 5300 - Introduction to Special Education Credits: 3 hours

Summer I Coursework
LS 6170 - Reading in the Content Areas Credits: 3 hours
ED 6010 - Introduction to Research in Educational Settings Credits: 3 hours

Summer II Coursework
ED 7120 - Professional Field Experience Credits: 1 to 12 hours
A supervised field experience in a multi-week summer camp for K-8 youths who are interested in exploring the Chinese language and culture. Credits needed: 2 hours.

Year 2 - Fall Coursework
ED 7120 - Professional Field Experience Credits: 1 to 12 hours
A supervised K-12 internship and seminar. Teacher candidates will either be placed with a mentor who teaches courses in Chinese language and culture at all grade levels, or they will split their field experience between two settings: one elementary and the other secondary. The accompanying weekly seminar will address such issues as curriculum, assessment, pedagogy, organization of learning environments, leadership, and child and adolescent development. Credits needed: 6 hours.

Spring Coursework
ED 6790 - Capstone Research Project Credits: 3 hours

Certificate Program in Early Childhood Special Education (minimum of 15 graduate credits)
Advisors: Andrea Smith
Room 4121 Sangren Hall

This Certificate is designed to provide both face to face and online options for students working to obtain their State of Michigan ZS endorsement* (Early Childhood Special Education).
Admissions criteria

1. Bachelor's degree from an accredited institution.
2. An overall grade point average of at least 3.0 (on a 4 point scale) in the last two years of undergraduate work. Applicants with a GPA of less than 3.0 may be granted a Conditional Admission. This will be converted to a regular admission if students receive a grade of "B" or better in the first two graduate courses (six credit hours) taken.
3. A concise written "statement of purpose" (250 words or less) indicating the applicant's reasons for seeking admission to the program and what the applicant hopes to accomplish during the program of study.
4. Congruence of applicant's written "statement of purpose" with the parameters of this certificate program.
5. A valid Michigan teaching certificate.

<u>Courses required to complete the Certificate (minimum of 15 credits)</u>
ED 5750 - Administration of Child Development Centers Credits: 3 hours
ED 6060 - Early Childhood Education Methods and Materials Credits: 3 hours
ED 6080 - Seminar in Early Childhood Development Credits: 3 hours
ED 6110 - Assessment in Early Childhood Inclusive Education Credits: 3 hours
ED 6140 - Engaging Diverse Families in Educational Settings Credits: 3 hours

<u>Elective Courses (3 hours)</u>
ED 7120 - Professional Field Experience Credits: 1 to 12 hours
Credits needed: 3 hours

Notes
*Students working toward the state ZS endorsement must meet three requirements:

- Completion of 27 graduate credits, of which 15 credits must be courses specific to Early Childhood.
- Professional experience at two of three early childhood levels (infants/toddler, preschool, kindergarten-grade 3).
- Passing grade on the state level examination.

In addition to the 15 required Early Childhood credits, students may transfer in 12 credits of existing graduate coursework OR may elect to take additional graduate coursework toward a Master's in the Practice of Teaching degree - Early Childhood Emphasis.

Interdisciplinary Programs – College of Education and Human Development

Doctor of Philosophy in Education and Human Development (Ph.D. in EHD)

This Ph.D. program offers flexibility to graduate students in the College of Education and Human Development to pursue doctoral work in emphasis areas not already offered in the College or university. The Ph.D. in EHD program combines coursework from the student's master's degree, additional subject area courses, and an interdisciplinary research curriculum. Additional information may be obtained from the Dean's office or on the College website regarding the emphasis areas available.

Admission and Application Requirements

The following application materials are required for admission to the Ph.D. in EHD program:

1. A master's degree in the emphasis or related area, with a minimum of 3.25 GPA. The application must include transcripts of this and other previous degrees (as required by WMU).
2. Graduate Record Examination scores, with such scores above the 50th percentile on Verbal, Quantitative, and Analytic Writing preferred.
3. Current curriculum vita.
4. Statement of purpose outlining the applicant's professional experience and goals for pursuing the given emphasis area.
5. Three letters of recommendation that address the candidate's qualifications for the degree program.
6. Appropriate evidence of English language proficiency for international students (as required by WMU).

Application information may be obtained from the WMU Admissions Office website www.wmich.edu/apply/graduate or directly from the College of Education and Human Development www.wmich.edu/education/academics/graduate.

A graduate committee of faculty with full graduate faculty status representing each department offering an emphasis area will be established to create policies and procedures to implement and oversee the program. Admissions decisions will be made by faculty in the specific program area where the student pursues his or her doctoral study.

Program Requirements

The Ph.D. in CEHD requires a minimum of 54 credits beyond the master's degree distributed as follows:

1. Interdisciplinary Foundation of Research and Inquiry Core (21 credits)
EMR 6450 - Data Analytics I: Designed Studies Credits: 3 hours
EMR 6480 - Qualitative Research Methods Credits: 3 hours
EMR 6580 - Qualitative Research Practicum Credits: 3 hours
EMR 6650 - Data Analytics II: Correlation Studies Credits: 3 hours
Three other research or research design courses (as selected in conjunction with, and approved by, the student's advisor)

Note:
Within this interdisciplinary foundation of research and inquiry core of courses, each student shall demonstrate mastery of two research tools including qualitative and quantitative methods.

2. Emphasis Area (21 credits)
The course of study within this emphasis area is developed by the doctoral advisor and student including guided electives, research seminars, and independent studies.

3. Dissertation (12 credits)

Additional Information

Overall, the Ph.D. in EHD program requires at least 54 credit hours beyond the master's degree with a minimum 3.25 GPA. At least half of the credits must be at the 6000-level or above, and at least 42 credits must be taken at

WMU once admitted to the doctoral program. Students must also successfully pass a comprehensive examination, and successfully defend their dissertation as evidenced by approval of their dissertation committee.

The program follows a master-apprentice model of doctoral preparation, similar to the one adopted by the Peabody College of Education and Human Development at Vanderbilt University. While in the program, the student will mainly engage in scholarly research projects with their advisors besides completing the courses in the area of Interdisciplinary Foundation of Research and Inquiry.

College of Engineering and Applied Sciences

Houssam Toutanji,
Dean

Andrew Kline
Associate Dean for Research and Graduate Education

The College of Engineering and Applied Sciences is dedicated to excellence in education and research. Academic programs educate students for life-long learning and responsible professional leadership in the global community. Research addresses both knowledge generation and application to real-world challenges. Our faculty, staff, and students serve as a resource to our constituents, including business and industry. Graduates of our programs are well prepared for professional careers in basic or applied research and in application of engineering principles to the marketplace.

The College of Engineering and Applied Sciences offers the Master of Science in Engineering in Aerospace Engineering, Chemical Engineering, Civil Engineering, Computer Engineering, Electrical Engineering, Industrial Engineering, and Mechanical Engineering. It offers the Master of Science in Computer Science through the Department of Computer Science; the Master of Science in Manufacturing Engineering through the Department of Engineering Design, Manufacturing, and Management Systems; Master of Science in Engineering Management through the Department of Industrial and Entrepreneurial Engineering and Engineering Management; and the Master of Science in Paper and Printing Science through the Department of Chemical and Paper Engineering. It offers the Doctor of Philosophy in Computer Science, in Electrical and Computer Engineering, in Evaluation, in Industrial Engineering, in Mechanical Engineering, in Paper and Printing Science, and in Engineering and Applied Sciences.

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

Academic Units:
Chemical and Paper Engineering
Civil and Construction Engineering
Computer Science
Electrical and Computer Engineering
Engineering Design, Manufacturing, and Management Systems
Industrial and Entrepreneurial Engineering & Engineering Management
Mechanical and Aerospace Engineering

Doctor of Philosophy in Engineering and Applied Sciences
The Doctor of Philosophy in Engineering and Applied Sciences is designed to provide a flexible vehicle to tackle new and emerging areas of research that cut across multiple disciplines or are of interest to and within the expertise of the college faculty. The program requires the selection of a Ph.D. champion before admission is granted. The role of the champion is to oversee the process from admissions to graduation to ensure compliance with all program requirements. This early intervention will serve to strengthen the student's program and reduce the time to graduation. The champion will provide guidance to the student throughout the program and will serve as the chair of the dissertation committee.

Admission Requirements
The Ph.D. in Engineering and Applied Sciences is offered in two tracks: (1) Engineering; and (2) Applied Sciences. In addition to the University minimum Ph.D. requirements for admission as outlined in the Graduate Catalog, all applicants are expected to meet the following minimum requirements for admission to the Ph.D. in Engineering and Applied Sciences:

1. The student must contact a faculty member who agrees to champion the application and who will serve as the chair of the Ph.D. dissertation committee.
2. A minimum of a bachelor's degree (master's preferred) from an accredited institution:
    - In an engineering discipline relevant to the intended field of study as determined by the Ph.D. champion is required for admission to the Engineering Track, or
    - In applied sciences, or a closely related discipline, relevant to the intended field of study as determined by the Ph.D. champion is required for admission to the Applied Sciences Track.
3. Two official transcripts from each institution attended since high school.
4. An overall minimum grade point average of 3.25.
5. The General GRE test scores.
6. Statement of purpose describing the applicant's research interests and professional goals.
7. Three letters of recommendation.

The admission process is competitive and is administered by the department of the champion.

Admission Policy

A student who has been dismissed from another PhD program in the College of Engineering and Applied Sciences is not immediately admissible in the PhD in Engineering and Applied Sciences (EAS) program. There will be a waiting period of five years after which the student can apply for this program with a set of improved credentials.

Program Requirements

In addition to the minimum University requirements listed in the graduate catalog, the following must be fulfilled for the Ph.D. in the Engineering and Applied Sciences program:

1. ***Minimum Credit Hours:*** After admission into this Ph.D. program, the majority of credits taken at Western Michigan University must be from the College of Engineering and Applied Sciences (excluding thesis and dissertation credits).
    - *Students admitted after bachelor's degree:* A minimum of 60 graduate-level credit hours, excluding the dissertation, beyond the bachelor's is required, of which 30 hours must be at Western Michigan University in an approved program of study. No more than 15 credit hours can be at the 5000 level and at least 30 credit hours of regularly offered courses, excluding independent study, independent research, seminars, doctoral research, professional field experience and internship courses.
    - *Students admitted after master's degree:* A minimum of 30 graduate-level credit hours, excluding dissertation, beyond the master's is required at Western Michigan University in an approved program of study.
2. ***Program of Study:*** A program of study in the student's field of interest must be completed in the first year of enrollment. This program of study is uniquely defined and approved by the Ph.D. committee chair, the student, the department chair of the Ph.D. committee chair, the dean of the College of Engineering and Applied Sciences or his/her designee, and the dean of the Graduate College. The exact distribution of courses, seminars, and research will depend upon the program and may vary from one student to another. Each student is required to complete a dissertation.
3. ***Doctoral Dissertation:*** Fifteen (15) credit hours of Doctoral Dissertation (ENGR 7300 or similar) are required.
4. ***Research Tools:*** Two appropriate research tools are required. Such research tools may include but are not limited to statistics, numerical analysis, mathematics, research methodology, and computer programming. These are determined by the Ph.D. committee chair and the student.
5. ***Candidacy and Examination Requirements:*** Passing the following three examinations in the intended specialty area is required. These exams are designed and administered by the dissertation committee.
    - *Qualifying Exam:* Before admission to candidacy for the doctoral degree, the student must pass a written qualifying examination. The exam must be completed before the completion of 45 credit hours for students admitted after the bachelor's degree, and before the completion of 15 credit hours for students admitted after the master's degree.
    - *Comprehensive Exam:* Each doctoral candidate must obtain approval from his or her dissertation committee for a dissertation topic and research plan through the comprehensive exam. The exam

requires a written proposal and oral presentation, and is typically taken near the end of the course work outlined in the doctoral program of study. The comprehensive exam must be completed within one year after passing the qualifying exam. Upon passing the comprehensive exam, the student is advanced to the Ph.D. candidate status.

- *Dissertation Defense:* The defense takes place at the conclusion of the dissertation research with the approval of the committee. Upon a successful defense outcome, as determined by the dissertation, the student earns the Ph.D. in Engineering and Applied Sciences degree.

If a student fails any of the above exams, the student can apply to retake the exam in the next semester. A second failure will result in dismissal from the program.

Doctoral Dissertation Committee

A doctoral dissertation committee shall be appointed for each student during the first year of enrollment. The purpose of the dissertation committee is:

1. Develop, with the student, the program of study for the intended specialty field under the Ph.D. in Engineering and Applied Sciences program;
2. Design and administer the required Ph.D. examinations;
3. Provide the technical guidance to the student during the dissertation portion of the doctoral program.

The doctoral dissertation committee shall consist of at least three College of Engineering and Applied Sciences full members of the graduate faculty, including the chair of the Ph.D. committee. Additional members of the committee must either be full members or associate members of the graduate faculty.

Chemical and Paper Engineering

Kecheng Li, Chair
Main Office: A-217 Parkview Campus
Telephone: (269) 276-3500
Fax: (269) 276-3501

Paul D. Fleming
Andro Mondala
Alexandra Pekarovicova
Kalyana Pingali
James Springstead
Brian Young

Master of Science in Engineering (Chemical)
Advisor: Andrew Kline
Room A-221 Parkview Campus

The Master of Science in Engineering (Chemical) is designed to provide theoretical and laboratory experiences which are basic to the development of professional competence. A Thesis Option and a Non-thesis Option are available. While the program requirements for each option differ, the admission requirements for both options are identical.

For those students selecting the non-thesis option, a design experience (not an industrial internship experience) resulting in the student producing a major written report is required. This requirement is fulfilled by successfully completing CHEG 6500.

- *Thesis Option:* 30 total credit hours are required for graduation. This includes 24 credits of coursework and six credits of research (CHEG 7000).
- *Non-Thesis Option:* 33 total credit hours are required for graduation. All the credits are acquired through coursework, and will include CHEG 6500.

Students must have at least one-half of their earned credit hours to be used towards a graduate degree at the 6000 level or higher. Students are responsible for completing any needed prerequisites before taking a course for graduate credit. A maximum of six credit hours of graduate course credits may be transferred from another institution.

Admission Requirements
A Bachelor of Science in Chemical Engineering or a related discipline from an accredited college or university is required. If an applicant does not have sufficient background in Chemical Engineering, the applicant would need to minimally take or have taken prerequisite courses noted below, and depending on the area of focus, additional courses as determined by the department graduate committee in their case. Prospective graduate students must take the GRE general exam.

International students must successfully complete the Test of English as a Foreign Language (TOEFL). Acceptable scores will be according to the Western Michigan University standard for admission to a graduate-level program.

As noted above, prospective graduate students without a sufficient background in chemical engineering will at a minimum need to have completed or must complete while in the MS in Engineering (Chemical) degree program at WMU the following courses or their equivalent, with a cumulative GPA of 3.00 or higher:

CHEG 2960 - Material and Energy Balance Credits: 4 hours
CHEG 3110 - Unit Operations in Chemical Engineering I Credits: 3 hours
CHEG 3120 - Unit Operations in Chemical Engineering II Credits: 3 hours
CHEG 4100 - Chemical Reaction Engineering Credits: 3 hours
MATH 3740 - Differential Equations and Linear Algebra Credits: 4 hours

And either
CHEG 3200 - Chemical Engineering Thermodynamics Credits: 3 hours
OR
CHEM 4300 - Physical Chemistry I Credits: 3 hours.

Core Courses
All Chemical Engineering graduate students must complete the Core courses:

CHEG 6100 - Chemical Engineering Thermodynamics Credits: 3 hours
CHEG 6200 - Advanced Transport Processes Credits: 3 hours
CHEG 6300 - Chemical Reaction Engineering Credits: 3 hours

To fulfill the mathematics requirement for the Core courses, students must select one of the following:

CHEG 6000 - Chemical Engineering Mathematics Credits: 3 hours
MATH 5740 - Advanced Differential Equations Credits: 3 hours
ME 5600 - Engineering Analysis Credits: 3 hours
ME 5610 - Finite Element Method Credits: 3 hours
ME 5620 - Application of Numerical Methods in Engineering Credits: 3 hours

Students, with permission of the departmental graduate committee, may replace one of the Core courses with an additional course from the list of Electives.

Elective Courses
Thesis option students will select a minimum of six credit hours of Electives from the list below. Non-thesis option students will select a minimum of nine credit hours of Elective courses (including CHEG 6500) from the list below.

CHEG 6400 - Pollution Prevention Engineering Credits: 3 hours
CHEG 6500 - Chemical Process Design and Analysis I Credits: 3 hours
CHEG 6510 - Chemical Process Design and Analysis II Credits: 3 hours
CHEG 6600 - Methods of Research and Engineering Communication Credits: 3 hours
CHEG 6950 - Graduate Topics in Chemical Engineering Credits: 3 hours
OR
ECE 6720 - Fuzzy Control Systems Credits: 3 hours

Cognate Courses
Depending on a student's personal interests, and with permission of the department graduate committee, students will select six credit hours of academic courses (not internships) at the 5000 or 6000 level. These courses are intended to give a student necessary tools to succeed as a chemical engineering professional, and to broaden their academic background. Courses should be of a type that could be taken by any graduate student enrolled at WMU, and do not necessarily have to be scientific or engineering based. Examples of cognate courses are found below.

Any CS course at 5300 or higher level
Any MATH course at 5070 or higher level
Any STAT course at 5610 or higher level
OR
IEE 5160 - Design of Experiments and Regression Analysis Credits: 3 hours
PADM 6080 - Organization Theory and Behavior Credits: 3 hours
PHIL 5440 - Practical Ethics Credits: 3 hours
OR
PHIL 6320 - Theory of Knowledge Credits: 2 to 4 hours
EM 6140 - Project Management Credits: 3 hours

Master of Science in Paper and Printing Science
Advisor: Paul D. Fleming

Room A-233 Parkview Campus

The Master of Science in Paper and Printing Science is designed to provide theoretical and laboratory experiences which are basic to the development of professional competence in pulp, paper, and printing science. The department has leadership in the areas of flexo, offset and gravure printing, recycling and deinking, papermaking, computational fluid dynamics, and coating. It is internationally recognized in the fields of gravure, printing, printed electronics, paper coating and barrier coating. Its laboratories and equipment are the most complete of any similar academic institution featuring a complete recycled fiber pilot plant, paper machine, high speed puddle and metered size press coater, cylindrical laboratory blade and rod coater and gravure, flexo, offset, screen, and digital printing presses.

Thesis Option and a Non-thesis Option are available. While the program requirements for each option differ, the admission requirements for both options are identical. Students without a sufficient background will be required to take PAPR 5000.

Admission Requirements

1. Applicants with science and related baccalaureate degrees may qualify for admission based upon demonstrated competence at an accredited college or university.
2. At least one semester of college chemistry and one semester of calculus are required.
3. After admission, the student's graduate advisor will approve a plan of study, which may include courses not eligible for graduate credit.
4. Applicants are encouraged to submit results of the Graduate Record Examination to support their application for admission.

Program Options and Requirements

Thesis Option
1. A minimum of 30 semester hours of credit.

2. A minimum of 15 semester hours of Paper and Printing Science courses excluding the thesis research credits, of which the following core courses are required:

GPS 5201 - Color Printing and Substrates Credits: 3 hours
PAPR 5301 – Material Instrumental Analysis Credits: 2 hours
PAPR 5501 – Advanced Paper Processes Credits: 3 hours
PAPR 7250 – Doctoral Research Seminar Credits 1 to 6 hours Credits: 1 hour needed

Note:
A minimum of one-half of the credit hours earned towards the master's degree must be at the 6000 course level or higher.

3. Students must satisfactorily complete a statistics or design of experiments course at the 5000 course level or higher.

4. A minimum of three semester hours of course work outside the Department of Chemical and Paper Engineering.

5. Satisfactory completion of six semester hours of the following course, based on either an experimental or theoretical topic, under the guidance of a Thesis Committee.

PAPR 7000 - Master's Thesis Credits: 1 to 6 hours
(Credits needed: 6 hours)

Non-Thesis Option
1. A minimum of 30 semester hours of credit.

2. A minimum of 18 semester hours of Paper and Printing Science courses, of which the following core courses are required:
GPS 5201 - Color Printing and Substrates Credits: 3 hours
PAPR 5301 - Material Instrumental Analysis Credits: 2 hours
PAPR 5501 - Advanced Paper Processes Credits: 3 hours
PAPR 7250 - Doctoral Research Seminar Credits: 1 hour

4. A minimum of six semester hours of course work outside the department approved by the graduate advisor.

Master of Science in Engineering (Chemical - Accelerated)
The Accelerated Master's Graduate Degree Program (AGDP) in Chemical Engineering allows undergraduate students to begin accumulating credits towards completion of a master's while still enrolled as undergraduates. Undergraduate students admitted to an AGDP, with senior standing, could take 5000- and 6000-level courses for graduate credit. Up to 12 hours of designated 5000- and/or 6000-level courses (but not less than 6 hours) could be used for both the bachelor's degree and for completing the master's degree within 24 months of completing their bachelor's degree in chemical engineering. These students may choose to pursue a Master of Science in Engineering (Chemical) degree under either the thesis option or the non-thesis option, which will allow them to complete an AGDP degree by completing combined graduate and undergraduate credit hours.

Application and Academic Advising for the AGDP
A prospective student who meets the eligibility requirements (see Admission Procedure) must set up a meeting with their undergraduate advisor and the chemical engineer graduate advisor to develop Plans of Work for the bachelor's and master's degree programs.

Before admission to an AGDP can be finalized, students must submit the standard application for admission to the Office of Admissions and Graduate Admissions including:

- an application
- application fee
- a copy of all transcripts
- a Plan of Graduate Work, signed by the prospective student, the undergraduate advisor and the chemical engineering graduate advisor

The Plan of Graduate Work for the master's degree must clearly indicate:

- the 5000- and/or 6000-level courses (a maximum of 12 graduate credit hours) that will be counted for both bachelor's and master's degrees,
- the graduation date for the master's degree that meets the time limit for the AGDP (i.e. obtaining a Master of Science in Engineering (Chemical) within 24 months of completing the bachelor's degree). Any changes to the AGDP Plan of Graduate Work must be submitted in writing and approved by chemical engineering graduate advisor and graduate dean.

Admission Procedure
Admission to the AGDP is contingent on meeting the following eligibility requirements at the time of applying for the AGDP:

- Students must have senior standing, a minimum cumulative undergraduate grade point average (GPA) of 3.25 (on a 4.00 scale) based on at least 45 earned hours, 15 of which shall be earned at Western Michigan University in CHEG or PAPR courses, and additional criteria as determined by the department.
- The student must apply through the Office of Admissions and Graduate Admissions and must also apply for admission to the graduate degree granting department. After admission into the AGDP, the student's record will indicate the AGDP status.
- International students must clarify their visa status with the Office of International Student and Scholar Services before submitting an admission application for AGDP.

- Students intending to enroll in any AGDP must maintain a 3.00 GPA throughout their baccalaureate degree, or their admission to the AGDP will be revoked.

Admission to the AGDP does not guarantee admission to the Graduate College. However, successful completion of an undergraduate degree under AGDP will ensure admission to the Graduate College.

Academic Advising, Records, and Program Requirements

Students who wish to participate in the AGDP will follow Application and Academic Advising for the AGDP, as discussed previously. The department will send the Plan of Graduate Work to the students and the registrar that will state which graduate courses may be counted towards both degrees. A copy will be placed with the student's undergraduate records, and the change will be incorporated into the student's undergraduate and master's program as outlined below. Graduate courses substituting for required courses within the undergraduate degree are designated by the program as equivalent in content but delivered with graduate level rigor. Current 5000-level courses (required or elective) in the bachelor's degree must be taken at the graduate level to be double counted. The courses for the AGDP may be used to complete the undergraduate degree credit hour requirements.

Administration of the program includes the following:

1. Students with senior standing who have been accepted into the AGDP can take 6000-level courses for graduate credit while undergraduates. This registration would be done by the Registrar's Office, with permission of the department and the student. This would occur the same way that students are dually enrolled as undergraduates and graduate students under the current policy.
2. Students will pay undergraduate tuition for these 6000-level courses as long as they are undergraduates. The 6000-level courses are included in the flat rate for tuition purposes.
3. Students are considered undergraduates for financial aid purposes until they receive the baccalaureate degree.
4. The 6000-level courses, taken while the student is still an undergraduate, will appear on the student's graduate transcript. The grades earned in these courses will be reflected in the graduate GPA.
5. At the time the student completes his/her bachelor's degree, the Registrar's Office staff will manually add the hours earned in the 6000-level courses to the student's undergraduate transcript. The undergraduate GPA will also be adjusted to include the grades earned in these courses.
6. The department will clearly identify for the Registrar's Office on the original "Plan of Graduate Work" which 5000- and/or 6000-level courses are available to be double counted. Individual students will have specific courses identified to be double counted when they are admitted to the AGDP.
7. The 5000- and/or 6000-level courses which are double counted will be identified as such on the graduate transcript.
8. The transcript key, which is on the back of the transcript paper, will explain the double counting.
9. Both undergraduate and graduate transcripts will show that the student has complete an accelerated graduate degree program.
10. If a student completes his/her bachelor's degree and then stops attending the AGDP, the graduate transcript will show the graduate courses completed.
11. It is expected that the baccalaureate degree will be earned and awarded within one calendar year after initial enrollment in the AGDP or as determined by the department.
12. In order to progress automatically into the graduate program, a student must achieve a grade of "B" or above in each of the graduate courses being counted for the undergraduate degree, as well as maintain a 3.00 GPA overall. Students who do not meet this criteria will have the earned grade applied to their undergraduate program only, and must reapply for admission to the graduate program. If the student is admitted to the graduate program, the department and graduate dean will determine if any credit from the bachelor's degree will be carried forward for the graduate degree. Students who complete the undergraduate degree including a "B" or above in the specified graduate courses will be admitted as graduate students (with the relevant graduate credit) in the next semester or session after receiving the bachelor's degree.
13. Students must complete the bachelor's degree prior to entering the master's program. Students in the AGDP cannot elect to by-pass the bachelor's degree.
14. No more that 12 credit hours of graduate work may be counted toward the requirements of both degrees.

15. Students must complete the master's degree within 24 months from the completion of the bachelor's degree. If the master's program is not completed within these time limits, none of the 5000- and/or 6000-level courses counted in the undergraduate program can be counted toward the master's degree.

Continuing Eligibility
It is the responsibility of the student to recognize his/her eligibility status.

A student completing the bachelor's degree requirements with and accumulated GPA of less than 3.00/4.00 is no longer eligible to count the 5000- and/or 6000-level credit hours specified (see Eligible Courses for the AGDP) toward the master's degree and is automatically terminated from the AGDP.

A student who is ineligible to participate in (or withdraws from) the AGDP cannot count any of the courses specified (see Eligible Courses for the AGDP) for both bachelor's and master's degrees. These courses, however, may be counted toward the student's bachelor's degree upon the discretion of the undergraduate advisor.

A student who becomes ineligible to participate in the AGDP must be informed by the chemical engineering graduate advisor in writing of his/her ineligibility. A copy of this letter to the student must be sent to the Graduate College and the undergraduate advisor.

Withdrawal
A student may at any time withdraw from an approved AGDP by informing the department's director of undergraduate programs and the chemical engineering graduate advisor in writing. A copy of this request to withdraw must be sent to the Graduate College for approval.

Eligible Courses for the AGDP
To select courses for the AGDP, students will work with their undergraduate advisor and the chemical engineering graduate advisor. Courses that are selected for the AGDP will be used to replace credit hours in an Emphasis Area of the bachelor's degree program. Students will select only one Emphasis Area as part of the AGDP. It is the responsibility of the student to make sure they have completed all the needed prerequisites for the courses they wish to elect for use by the AGDP.

Example eligible courses from which students will elect their maximum 12 credit hours (but not less than 6) for the AGDP are found below. Additional courses at the 5000- or 6000-level may be eligible, depending on their scheduled availability. In all cases, eligible students must work with their undergraduate advisor and the chemical engineering graduate advisor to complete a Plan of Graduate Work as discussed previously.

Chemical Engineering
CHEG 5950 - Topics in Chemical Engineering Credits: 1 to 3 hours
CHEG 6100 - Chemical Engineering Thermodynamics Credits: 3 hours
CHEG 6200 - Advanced Transport Processes Credits: 3 hours
CHEG 6300 - Chemical Reaction Engineering Credits: 3 hours
CHEG 6950 - Graduate Topics in Chemical Engineering Credits: 3 hours

Mathematics Skill Development

AGDP students may select one of the following courses:
CHEG 6000 - Chemical Engineering Mathematics Credits: 3 hours
MATH 5740 - Advanced Differential Equations Credits: 3 hours
ME 5600 - Engineering Analysis Credits: 3 hours
ME 5610 - Finite Element Method Credits: 3 hours
ME 5620 - Application of Numerical Methods in Engineering Credits: 3 hours

Master of Science in Paper and Printing Science (Accelerated)

The Accelerated Master's Graduate Degree Program (AGDP) in Paper and Printing Science in the Department of Chemical and Paper Engineering (ChP) allows undergraduate students to begin accumulating credits towards completion of a master's while still enrolled as undergraduates. Undergraduate students admitted to an AGDP, with senior standing, could take 5000 and 6000 level courses for graduate credit. Up to 12 hours of designated 5000 and/or 6000 level courses (but not less than 6 hours) could be used for both the bachelor's degree and for completing the master's degree within 24 months of completing their bachelor's degree in paper engineering (process option); chemical engineering (pulp & paper or inks & imaging options); or graphic and printing science. These students may choose to pursue a Master of Science in Paper and Printing Science degree under either the thesis option or the non-thesis option, which will allow them to complete an AGDP degree by completing combined graduate and undergraduate credit hours.

Application and Academic Advising for the AGDP

A prospective student who meets the eligibility requirements (see Admission Procedure) must set up a meeting with their undergraduate advisor and the ChP graduate advisor to develop Plans of Work for the bachelor's and master's degree programs.

Before admission to an AGDP can be finalized, students must submit the standard application for admission to the Office of Admissions and Graduate Admissions including:

- an application
- application fee
- a copy of all transcripts
- a Plan of Graduate Work, signed by the prospective student, the undergraduate advisor and the ChP graduate advisor

The Plan of Graduate Work for the master's degree must clearly indicate:

- the 5000 and/or 6000 level courses (a maximum of 12 graduate credit hours) that will be counted for both bachelor's and master's degrees,
- the graduation date for the master's degree that meets the time limit for the AGDP (i.e. obtaining a Master's of Science in Paper and Printing Science within 24 months of completing the bachelor's degree). Any changes to the AGDP Plan of Graduate Work must be submitted in writing and approved by the ChP graduate advisor and graduate dean.

Admission Procedure

Admission to the AGDP is contingent on meeting the following eligibility requirements at the time of applying for the AGDP:

- Students must have senior standing, a minimum cumulative undergraduate grade point average (GPA) of 3.25 (on a 4.00 scale) based on at least 45 earned hours, 15 of which shall be earned at Western Michigan University in PAPR, GPS, or CHEG courses, and additional criteria as determined by the department.
- The student must apply through the Office of Admissions and Graduate Admissions and must also apply for admission to the graduate degree granting department. After admission into the AGDP, the student's record will indicate the AGDP status.
- International students must clarify their visa status with the Office of International Student and Scholar Services before submitting an admission application for AGDP.
- Students intending to enroll in any AGDP must maintain a 3.00 GPA throughout their baccalaureate degree, or their admission to the AGDP will be revoked.

Admission to the AGDP does not guarantee admission to the Graduate College. However, successful completion of an undergraduate degree under AGDP will ensure admission to the Graduate College.

Academic Advising, Records, and Program Requirements

Students who wish to participate in the AGDP will follow Application and Academic Advising for the AGDP, as discussed previously. The department will send the Plan of Graduate Work to the students and the registrar that will state which graduate courses may be counted towards both degrees. A copy will be placed with the student's undergraduate records, and the change will be incorporated into the student's undergraduate and Master's program as outlined below. Graduate courses substituting for required courses within the undergraduate degree are designated by the program as equivalent in content but delivered with graduate level rigor. Current 5000 level courses (required or elective) in the bachelor's degree must be taken at the graduate level to be double counted. The courses for the AGDP may be used to complete the undergraduate degree credit hour requirements.

Administration of the program includes the following:

1. Students with senior standing who have been accepted into the AGDP can take 6000 level courses for graduate credit while undergraduates. This registration would be done by the Registrar's Office, with permission of the department and the student. This would occur in the same way that students are dually enrolled as undergraduates and graduate students under current policy.
2. Students will pay undergraduate tuition for these 6000 level courses as long as they are undergraduates. The 6000 level courses are included in the flat rate for tuition purposes.
3. Students are considered undergraduates for financial aid purposes until they receive the baccalaureate degree.
4. The 6000 level courses, taken while the student is still an undergraduate, will appear on the student's graduate transcript. The grades earned in these courses will be reflected in the graduate GPA.
5. At the time the student completes his/her bachelor's degree, the Registrar's Office staff will manually add the hours earned in the 6000 level courses o the student's undergraduate transcript. The undergraduate GPA will also be adjusted to include the grades earned in these courses.
6. The department will clearly identify for the Registrar's Office on the original "Plan of Graduate Work" which 5000 and/or 6000 level courses are available to be double counted. Individual students will have specific courses identified to be double counted when they are admitted to the AGDP.
7. The 5000 and/or 6000 level courses which are double counted will be identified as such on the graduate transcript.
8. The transcript key, which is on the back of the transcript paper, will explain the double counting.
9. Both undergraduate and graduate transcripts will show that the student has completed an accelerated graduate degree program.
10. If a student completes his/her bachelor's degree and then stops attending the AGDP, the graduate transcript will show the graduate courses completed.
11. It is expected that the baccalaureate degree will be earned and awarded within one calendar after initial enrollment in the AGDP or as determined by the department.
12. In order to progress automatically in to the graduate program, a student must achieve a grade of "B" above in each of the graduate courses being counted for the undergraduate degree, as well as maintain a 3.00 GPA overall. Students who do not meet this criteria will have the earned grade applied to their undergraduate program only, and must reapply for admission to the graduate program. If the student is admitted to the graduate program, the department and graduate dean will determine if any credit from the bachelor's degree will be carried forward for the graduate degree. Students who complete the undergraduate degree including a "B" or above in the specified graduate courses will be admitted as graduate students (with the relevant graduate credit) in the next semester or session after receiving the bachelor's degree.
13. Students must complete the bachelor's degree prior to entering the master's program. Students in the AGDP cannot elect to by-pass the bachelor's degree.
14. No more than 12 credit hours of graduate work may be counted towards the requirements of both degrees.
15. Students must complete the master's degree within 24 months from the completion of the bachelor's degree. If the master's program is not completed within these time limits, none of the 5000 and/or 6000 level courses counted in the undergraduate program can be counted toward the master's degree.

<u>Continuing Eligibility</u>

It is the responsibility of the student to recognize his/her eligibility status.

A student completing the bachelor's degree requirements with an accumulated GPA of less than 3.00/4.00 is no longer eligible to count the 5000 and/or 6000 level credit hours specified (see Eligible Courses for the AGDP) toward the master's degree and is automatically terminated from the AGDP.

A student who is ineligible to participate in (or withdraws from) the AGDP cannot count any of the courses specified (see Eligible Courses for the AGDP) for both bachelor's and master's degrees. These courses, however, may be counted toward the student's bachelor's degree upon the discretion of the undergraduate advisor.

A student who becomes ineligible to participate in the AGDP must be informed by the ChP graduate advisor in writing of his/her ineligibility. A copy of this letter to the student must be sent to the Graduate College and the undergraduate advisor.

Withdrawal

A student may at any time withdraw from an approved AGDP by informing the department's director of undergraduate programs and the ChP graduate advisor in writing. A copy of this request to withdraw must be sent to the Graduate College for approval.

Eligible Courses for the AGDP

To select courses for the AGDP, students will work with their undergraduate advisor and the ChP graduate advisor, who will decide which credits in the current undergraduate curriculum the AGDP credits will replace. It is the responsibility of the student to make sure they have completed all the needed prerequisites for the courses they wish to elect for use by the AGDP.

Example eligible courses from which students will elect their maximum of 12 credit hours (but not less than 6) for the AGDP administered by the Department of Chemical and Paper Engineering are found below. Additional courses at the 6000 level may be eligible, depending on their scheduled availability. In all cases, eligible students must work with their undergraduate advisor and the ChP graduate advisor to complete a Plan of Graduate Work as discussed previously.

Chemical Engineering: Pulp and Paper option
Six to twelve credit hours in the pulp & paper option in the current curriculum may be replaced by AGDP credits.
GPS 5201 - Color Printing and Substrates Credits: 3 hours
PAPR 5501 - Advanced Paper Processes Credits: 3 hours
PAPR 5990 - Pilot Plant Operations Credits: 1 hour
PAPR 5301 - Material Instrumental Analysis Credits: 2 hours
IEE 5160 - Design of Experiments and Regression Analysis Credits: 3 hours
OR
STAT 5650 - Design of Experiments for Quality Improvement Credits: 3 hours
OR
STAT 5670 - Statistical Design and Analysis of Experiments Credits: 4 hours
OR
STAT 5680 - Regression Analysis Credits: 3 hours
ME 5610 - Finite Element Method Credits: 3 hours
OR
ME 5620 - Application of Numerical Methods in Engineering Credits: 3 hours

Chemical Engineering: Inks & Imaging Option
Six to twelve credit hours in the pulp & paper option in the current curriculum may be replaced by AGDP credits.
GPS 5100 - Printability Analysis Credits: 3 hours
GPS 5201 - Color Printing and Substrates Credits: 3 hours
PAPR 5501 - Advanced Paper Processes Credits: 3 hours
PAPR 5990 - Pilot Plant Operations Credits: 1 hour
PAPR 5301 - Material Instrumental Analysis Credits: 2 hours

IEE 5160 - Design of Experiments and Regression Analysis Credits: 3 hours
OR
STAT 5650 - Design of Experiments for Quality Improvement Credits: 3 hours
OR
STAT 5670 - Statistical Design and Analysis of Experiments Credits: 4 hours
OR
STAT 5680 - Regression Analysis Credits: 3 hours
ME 5610 - Finite Element Method Credits: 3 hours
OR
ME 5620 - Application of Numerical Methods in Engineering Credits: 3 hours

Graphic and Printing Science
Six to twelve credit hours in the pulp & paper option in the current curriculum may be replaced by AGDP credits.
GPS 5100 - Printability Analysis Credits: 3 hours
GPS 5201 - Color Printing and Substrates Credits: 3 hours
PAPR 5501 - Advanced Paper Processes Credits: 3 hours
PAPR 5990 - Pilot Plant Operations Credits: 1 hour
PAPR 5301 - Material Instrumental Analysis Credits: 2 hours
IEE 5160 - Design of Experiments and Regression Analysis Credits: 3 hours
OR
STAT 5650 - Design of Experiments for Quality Improvement Credits: 3 hours
OR
STAT 5670 - Statistical Design and Analysis of Experiments Credits: 4 hours
OR
STAT 5680 - Regression Analysis Credits: 3 hours

Paper Engineering: Process Option
Six to twelve credit hours in the pulp & paper option in the current curriculum may be replaced by AGDP credits.
GPS 5201 - Color Printing and Substrates Credits: 3 hours
PAPR 5501 - Advanced Paper Processes Credits: 3 hours
PAPR 5990 - Pilot Plant Operations Credits: 1 hour
PAPR 5301 - Material Instrumental Analysis Credits: 2 hours
IEE 5160 - Design of Experiments and Regression Analysis Credits: 3 hours
OR
STAT 5650 - Design of Experiments for Quality Improvement Credits: 3 hours
OR
STAT 5670 - Statistical Design and Analysis of Experiments Credits: 4 hours
OR
STAT 5680 - Regression Analysis Credits: 3 hours
ME 5610 - Finite Element Method Credits: 3 hours
OR
ME 5620 - Application of Numerical Methods in Engineering Credits: 3 hours

Doctor of Philosophy in Paper and Printing Science

Advisor: Paul D. Fleming
Room A-233 Parkview Campus

The Doctor of Philosophy in Paper and Printing Science is designed to prepare scientists for performing advanced research or for teaching at the university level. The emphasis of the program is on paper making processes, paper coating, paper recycling, and graphic and printing science technologies.

This is a research-intensive degree, based on fundamental scientific and chemical principles; the emphasis is on learning techniques for advanced research, the production of such advanced research, and the reporting of the research. Close supervision of the research will be maintained by the student's Dissertation Advisory Committee

and, particularly, by the chair of that committee. Some formal course work, much of it possibly accepted from course work completed to achieve a master's degree, is required to prepare for and support an original research problem chosen by the student in consultation with the Dissertation Advisory Committee. However, the degree is awarded for the attainment of knowledge of the paper and printing science disciplines and for original research; the degree is not awarded for accumulation of course credits. Thus, the key component of the program is the Dissertation Advisory Committee's careful and continuous mentoring of the student to develop necessary skills and knowledge to support advanced research.

Admission Requirements

Application materials may be obtained from the Office of Admissions, Graduate Admissions or from the Department of Chemical and Paper Engineering (ChP). International students should contact the Office of International Services and Student Affairs for the appropriate materials and information.

All applicants must meet the general admissions requirements for the Ph.D. specified by the Graduate College. In addition, the applicant is strongly encouraged to have completed a master's degree in a discipline relevant to paper and printing science with a minimum 3.25 grade point average. The Graduate Record Examination, General Test, is required of all applicants, as are at least three letters of recommendation and a letter describing the applicant's research interest. International students must also submit the TOEFL scores.

Admission determinations will be made by the department's Graduate Committee and will take into consideration the student's previous academic training and record of achievement, the GRE score, the recommendations provided in letters from three referees, and the information about the proposed area of study described in the letter of interest.

Financial Assistance

The Department of Chemical and Paper Engineering offers opportunities for financial assistance of doctoral students through graduate assistantships and fellowships. Information concerning these opportunities is available from the department's graduate advisor or from the Graduate College.

Program Requirements

Following a student's admission to the program, the ChP department's graduate advisor will be the student's temporary advisor until the dissertation advisory committee is formed, typically within one year of the student's commencement of the program. With the assistance of the graduate advisor, the student will select a chair of the dissertation advisory committee and, in consultation with the chair, the student will form an entire dissertation advisory committee, comprising at least three members. After the chair of the dissertation advisory committee is chosen, primary responsibility for the student will be transferred from the graduate advisor to the chair. The graduate advisor, however, will continue to monitor the student's progress and assist the chair of the dissertation advisory committee to ensure prompt compliance with all University and program requirements.

After admission to the doctoral program, a student must complete a total of 60 graduate-level credit hours, excluding the dissertation, beyond the bachelor's degree, or a total of 30 graduate-level credit hours, excluding the dissertation, beyond the master's degree. Graduate College policy requires that all doctoral students complete at least 30 hours of course work, exclusive of the dissertation, at WMU after admission to the doctoral program. However, in this research-based degree program, if an exceptionally well prepared student enters the program having satisfied one or more of the research tools and/or has completed PAPR 5301, the student may be able to satisfy all the requirements and competencies with fewer than 30 hours. Upon formal petition by the chair of the dissertation advisory committee and the graduate advisor and with the chair's submission of a program of study that indicates the student's satisfaction of all requirements and competencies, the dean of the Graduate College may waive that requirement. Such waivers must be sought and approved on a case-by-case basis.

In addition to the requirements of the Graduate College, the following requirements for the Doctor of Philosophy in Paper and Printing Science must be fulfilled:

1. 30 hours of course work beyond the master's degree

Since applicants are encouraged to have a master's degree, it is expected that applicants will have finished at least 24 hours of foundation course work at the graduate level, and six hours of thesis research. At the discretion of the department's graduate committee and with approval of the Graduate College, applicants who have earned a master's

degree may receive credit toward the 60 credit hours of doctoral course requirements beyond the bachelor's degree and excluding the dissertation, for up to 24 hours of foundation course work germane to paper and printing science at the time of admission to the program, and credit for up to six hours of thesis research. Such graduate-level foundation course work may include, as examples, mechanics and optics of paper and fibers (PAPR 6600), pulping and bleaching (PAPR 6980), and nonimpact printing (GPS 6210).

Students must also complete the following:
(These courses may already be included in the 24 hours of foundation course work from a master's degree program.)
GPS 5201 - Color Printing and Substrates Credits: 3 hours
PAPR 5301 – Material Instrumental Analysis Credits: 2 hours
PAPR 5501 - Advanced Paper Processes Credits: 3 hours

And one of the following courses:
(The selected course can be counted as one of the required research tools, and may already be included in the 24 hours of foundation course work from a master's degree program.)
IEE 5160 – Design of Experiments and Regression Analysis Credits: 3 hours
STAT 5650 – Design of Experiments for Quality Improvement Credits: 3 hours
STAT 5670 – Statistical Design and Analysis of Experiments Credits: 4 hours
STAT 5680 – Regression Analysis Credits: 3 hours

The required courses must be completed with at least a grade of "B," if not previously elected in a master's program as described above.

Additional course work required will be determined at the time of admission by the department's graduate committee to ensure readiness for graduate level course work or the research program. Additional course work may also be required to remedy deficiencies revealed by the Level I qualifying exams. These courses would be determined by the department's graduate committee in cooperation with the student's dissertation advisory committee.

2. Qualifying Examinations
All students seeking a doctoral degree in paper and printing sciences from Western Michigan University must successfully complete the Level I and Level II qualifying exams, following the qualifying exam guidelines developed by the Department of Chemical and Paper Engineering. In preparation for the qualifying exams, students without a sufficient background will be required to take PAPR 5000. The Level I qualifying exam is a written exam that will test a doctoral student’s general knowledge of paper and printing science at the level of a person who has completed a master’s degree in paper and printing science. The Level I qualifying exam will include information and topics related to paper chemistry and processing, inks and imaging, and experimental design. A student must successfully complete the Level I qualifying exam by the end of their first year of enrollment in the doctoral program. A student who does not successfully complete the Level I qualifying exam after two attempts will be dismissed from the doctoral degree program.

The Level II qualifying exam is an oral defense on the proposed dissertation research topic area, the dissertation proposal itself, and questions on graduate-level course materials. During the Level II qualifying exam, the student will demonstrate through oral discussion that they possess an acceptable knowledge of their area of chosen research and other graduate-level topics, in addition to defending their dissertation proposal. A student must complete the Level II qualifying exam within twelve calendar months of their successful completion of the Level I qualifying exam. A student must complete the Level II qualifying exam within two attempts or the student will be dismissed from the doctoral degree program. In preparation for the Level II qualifying exam, students will register for their first three credit hours of PAPR 7300. Successful completion of the Level II qualifying exam will allow the student to continue with research needed to fulfill the remaining 12 credit hours of PAPR 7300, as will be discussed.

3. Full-time enrollment
Full-time enrollment on campus for at least four semesters.

4. Demonstrate competency in two research tools

Two research tools chosen in consultation with the dissertation advisory committee. All students will select a statistics or experimental design course (item 1) plus at least one other research tool from the remaining options:

1. Statistics and experimental design at the level of STAT 5650, STAT 5670, STAT 5680, or IEE 5160 (with a grade of "B" or better).
2. Reading proficiency in one foreign language other than English at the course level of 4010 (with a grade of "B" or better).
3. Computer modeling and simulation expertise at the level of CS 5810 (with a grade of "B" or better).
4. One or more courses in biology, physics, chemistry, packaging, or engineering at the 5000 level or above and approved by the student's dissertation committee.

If some or all of the research tools credit hours are included in the 24 hours of foundation course work, students will select up to six credit hours of graduate-level elective courses, not including PAPR 7300, in consultation with the dissertation advisory committee.

5. Teaching Practicum (3 hours)
Completion of at least one University-sponsored TA training workshop and completion of PAPR 7131 and PAPR 7132. The PAPR 7131 course will be completed by observing a faculty member teach a class and by preparing to teach that course under the guidance of a graduate faculty member. PAPR 7132 credits will be earned by having primary responsibility for teaching one course under the guidance and supervision of a member of the department's graduate faculty. In consultation with their dissertation advisory committee, students may substitute up to six credit hours of graduate-level elective courses, not including PAPR 7300, in place of PAPR 7131 and PAPR 7132.

PAPR 7131 - Teaching Practicum Observation Credits: 1 to 3 hours
PAPR 7132 - Teaching in the Discipline Credits: 1 to 3 hours

6. Research Seminar (3 hours)
Completion of at least three hours of PAPR 7250. The objective of this requirement is to participate in discussion of recent research findings that may be used in the student's research and to gain practice in the presentation of research results.

PAPR 7250 - Doctoral Research Seminar Credits: 1 hour

7. Complete and successfully defend a dissertation (15 hours)
Completion of at least 15 hours of PAPR 7300, Doctoral Dissertation. The objective of this requirement is to ensure that the student carries out the research and prepares the dissertation under the guidance of the dissertation advisory committee. The student must successfully defend the dissertation and have the dissertation approved by the dissertation advisory committee and by the graduate dean. In order to receive credit for the first three hours of PAPR 7300 for which they register, the student must successfully complete the Level II qualifying exam. The student, with approval of the dissertation advisory committee, may choose between two dissertation options.

Option 1: The student will present a traditional comprehensive dissertation and two journal papers based on the doctoral research and judged by the dissertation advisory committee to be ready for submission to an identified, refereed journal. These must be submitted with an introduction, review of relevant literature, and a summary explaining the significance of the research.

Option 2: The student will present at least three journal papers and at least one conference paper based on the doctoral research and judged by the dissertation advisory committee as ready for submission to an identified, refereed journal and a refereed conference. These must be submitted with an introduction, review of relevant literature, and a summary explaining the significance of the research.

PAPR 7300 - Doctoral Dissertation Credits: 1 to 6 hours

Civil and Construction Engineering

Osama Abudayyeh, Chair
Main Office: G-253 Floyd Hall (Parkview Campus)
Telephone: (269) 276-3210
Fax: (269) 276-3211

Abiola Akanmu
Haluk Aktan
Upul Attanayake
Decker Hains
Valerian Kwigizile
Jun-Seok Oh
Xiaoyun Shao
Houssam Toutanji

The Department of Civil and Construction Engineering offer the Master of Science in Engineering (Civil). Courses are offered at times to enable working students to study without quitting their jobs.

Master of Science in Engineering (Civil)

Osama Abudayyeh, Advisor
G253 Parkview Campus

The principal objective of persons working in the field of civil engineering is the design and construction of systems to enhance the quality of like and to improve the environment in which we live. Western Michigan University's Master of Science in Engineering (Civil) is aimed at graduates of engineering programs who want to play an active role in the development and rejuvenation of the national infrastructure. The primary areas of focus in the department at the graduate level are construction engineering and management, structural engineering, and transportation engineering. Through the available program options, students can earn the degree on a full-time or part-time basis and can have a design or research orientation.

Admission Requirements
Students entering the proposed master's degree program are expected to have a background equivalent to that of students graduating from the department's undergraduate civil and construction engineering programs, or to obtain such background through specified prerequisite coursework. Further, students are expected to have earned a grade-point ratio of at least 3.00/4.00 on the last four semesters of academic study (at least 60 semester credit hours). Applicants with a GPA less than 3.00/4.00 can be considered under special circumstances, such as significant related work experience.

Graduation Requirements
To graduate from the master's degree program, all students must complete the two core courses and must satisfy the requirements of one of three program options. The two core courses are as follows:

CCE 6020 – Modeling and Analysis of Civil Engineering Applications Credits: 3 hours
CCE 6100 – Civil Systems Analysis Credits: 3 hours

Regardless of the degree option selected, the majority of total credit hours applied to the degree, excluding thesis and design project, must be CCE courses. All out of department courses applied to the degree require prior consent of the advisor. The program options and additional degree requirements are:

Option 1 – Research (30 hours)
Students must successfully complete at least 24 credit hours of graduate coursework including at least three courses in a primary area of study within civil engineering and two areas in a secondary area of study within civil engineering, successfully complete at least six credit hours of graduate thesis research, prepare a research thesis, and

successfully complete a final oral examination that is primarily focused on the research thesis but can also address coursework. The final examination will be administered by the student's graduate academic committee. This program is intended primarily for students who wish to conduct research and expand civil engineering knowledge. Please note that this is the only degree option for which graduate assistantships are available.

Option 2 – Professional Practice (30 hours)
Student must successfully complete at least 27 credit hours of graduate coursework including at least three courses in each of two areas of civil engineering and at least three credit hours of graduate capstone design that culminates in the preparation of a project report. Depending upon the student's previous background, a course in management may be required as the focus of this degree option in professional practice. Further, each student must successfully complete the Fundamentals of Engineering examination and a final oral examination that is focused on the graduate design project. The final examination will be administered by the student's graduate academic committee. This degree option is intended primarily for students who intend to practice civil engineering at the professional level.

Option 3 – Technical and Management Development (36 hrs)
Students must successfully complete at least 36 credit hours of graduate coursework including at least three courses in each of two area of civil engineering and three courses developing business management and engineering management skills. At least two CCE courses used for the degree program must be graduate design courses. Further, students must successfully complete a final comprehensive written and/or oral examination that addresses the student's undergraduate and graduate education. The final examination will be coordinated by the student's graduate academic advisor. This degree option is intended primarily for students in practice who want to enhance their technical skills and to develop management skills.

Master of Science in Engineering (Civil – Accelerated)

The accelerated degree program (AGDP) allows undergraduate students in the civil and construction engineering program an opportunity to complete requirements for the master's degree at an accelerated pace. These undergraduate students may count up to nine (but not less than six) credit hours of 5000-level courses, taken during their undergraduate studies, towards a master's degree in civil engineering within 24 months of completing the bachelor's degree in civil engineering or construction engineering. These students may choose to pursue a master's degree in civil engineering under either the thesis option or the non-thesis option.

The program will allow an undergraduate student, majoring in civil or construction engineering, to complete an accelerated master's degree in civil engineering by completing either 147 combined undergraduate/graduate credit hours (if choosing the thesis or project option), or 153 combined undergraduate/graduate credit hours (if choosing the non-thesis option).

<u>Application to the Accelerated Degree Program</u>

A prospective student who meets the eligibility requirements (see Criteria for Admission below) must set up a meeting with the CCE undergraduate advisor and the graduate advisor to complete the Accelerated Degree Program Planning form for the master's degree program.

Before admission to an AGDP can be finalized, a student must submit the standard application for admission to the Office of Admissions/graduate admissions including:

1. Application
2. Application fee
3. Copy of all college transcript

<u>Criteria for Admission to the Accelerated Degree Program:</u>

Permission to pursue the accelerated degree does not guarantee admission to the Graduate College. Admission is contingent on meeting the following eligibility requirements at the time of entering the graduate program:

1. A student must declare their interest before completing 96 credit hours in their undergraduate programs, including credits earned from advanced placement.
2. A transfer student must have completed a minimum of 30 credit hours as a full-time student at WMU.
3. A student must have a minimum accumulated GPA of 3.0/4.0 based upon credit hours earned at WMU.

Accelerated Degree Program Planning Form

The Accelerated Degree Program Planning Form must clearly indicate the following:

1. The 5000-level courses (a maximum of nine graduate credit hours) that will be counted for both the bachelor's and master's degrees.
2. The graduation date for the master's degree that meets the time limit for the AGDP program (i.e. obtaining a master's degree in civil engineering within 24 months of completing the bachelor's degree). Any changes to the AGDP Planning form must be submitted, in writing, and approved by the graduate advisor and graduate dean.

Requirements for Participation and Graduation

1. Students must complete the bachelor's degree prior to entering the master's program. Students in the AGDP may not elect to bypass the bachelor's degree.
2. Students will only be allowed to count a maximum of nine (9) 5000-level credits taken during their undergraduate studies toward their master's degree.
3. Students must receive a grade of "B" (3.0/4.0) or better in the 5000-level courses taken during their undergraduate studies. Courses with a grade of "CB" or below cannot be counted toward the master's degree.
4. No more than nine (9) hours of graduate work may be counted towards the requirements of both degrees.
5. Students must complete the master's degree within 24 months of completing the bachelor's degree. If the master's program is not completed within these time limits, none of the 5000-level courses specified on the Accelerated Degree Program Planning form can be counted toward the master's degree.

Continuing Eligibility

1. It is the responsibility of the student to recognize his/her eligibility status.
2. A student completing the bachelor's degree requirements with an accumulated GPA of less than 3.0/4.0 is no longer eligible to count the 5000-level credit hours specified on the AGDP Planning form toward the master's degree and is automatically terminated from the AGDP.
3. A student who does not follow the approved AGDP Planning form may become ineligible to participate in the AGDP program.
4. A student who is ineligible to participate in (or withdraws from the AGDP cannot count any of the courses specified on the Accelerated Degree Program Planning form for both bachelor's and master's degrees. These courses, however, may be counted toward the student's bachelor's degree upon the discretion of the undergraduate advisor.
5. A student who becomes ineligible to participate in the accelerated degree program must be informed by the graduate advisor in writing of his/her ineligibility. A copy of this letter to the student must be sent to the Graduate College.

Withdrawal

A student may, at any time, withdraw from the Accelerated Degree Program by informing both the director of undergraduate programs and the graduate advisor, in writing. A copy of this request to withdraw must be sent to the Graduate College and the registrar's office.

Doctor of Philosophy in Civil Engineering

The Doctor of Philosophy (PhD) in Civil Engineering is designed to provide a flexible vehicle to address new and emerging areas of research in civil engineering that are within interest and expertise of the civil engineering faculty.

Admission Requirements

In addition to the University minimum Ph.D. admission requirements as outlined in the Graduate Catalog, all applicants to the Ph.D. in Civil Engineering program are expected to meet the following minimum requirements for admission:

1. The student must contact a faculty member who agrees to advise the student and who will serve as the chair of the Ph.D. dissertation committee.
2. The student must have a bachelor's and master's degree in civil engineering or a closely related field from an accredited institution.
3. The student must submit official transcripts from each institution attended since high school.
4. The student must have an overall minimum grade point average of 3.25 at the master's and 3.0 at the bachelor's levels.
5. The student must provide the General GRE test scores.
6. The student must provide a statement of purpose describing the applicant's research interests and professional goals.
7. The student must provide three letters of recommendation.

Program Requirements

In addition to the minimum University requirements listed in the graduate catalog, the following must be fulfilled for the Ph.D. in Civil Engineering program:

1. *Minimum Credit Hours:* After admission into this Ph.D. program, the majority of credits taken at Western Michigan University must be from CCE and CEAS (excluding thesis and dissertation credits). A minimum of thirty (30) graduate-level credit hours, excluding the dissertation, beyond the master's is required at Western Michigan University in an approved program of study.

2. *Program of Study:* A program of study must be completed in the first year of enrollment. This program of study is uniquely defined and approved by the Ph.D. committee chair, the student, the department chair, and the Dean of the Graduate College. The exact distribution of courses, seminars, and research will depend upon the program and may vary from one student to another. Each student is required to complete a dissertation.

3. *Doctoral Dissertation:* Minimum of fifteen (15) credit hours of Doctoral Dissertation (CCE 7300) are required.

4. *Research Tools:* Two appropriate research tools are required. Such research tools may include, but are not limited to, statistics, numerical analysis, mathematics, research methodology, and computing, These are determined by the Ph.D. committee chair and the student.

5. *Candidacy and Examination Requirements:* Passing the following three examinations in the intended specialty area is required. These exams are designed and administered by the dissertation committee.

a. *Qualifying Exam:* Before admission to candidacy for the doctoral degree, the student must pass a written qualifying examination. The exam must be completed within the first calendar year of enrollment in the Ph.D. program

b. *Comprehensive Exam:* Each doctoral candidate must obtain approval from his or her dissertation committee for a dissertation topic and research plan through the comprehensive exam. The exam requires a written proposal and oral presentation, and is typically taken near the end of the course work outlined in the doctoral program of study. The comprehensive exam must be completed within one year after passing the qualifying exam. Upon passing the comprehensive exam, the student is advanced to the Ph.D. candidate status.

c. *Dissertation Defense:* The defense takes place at the conclusion of the dissertation research with the approval of the committee. Upon a successful defense outcome, as determined by the dissertation committee, the student earns the Ph.D. in Civil Engineering degree.

If a student fails any of the above exams, the student must retake the exam within a year. A second failure will result in dismissal from the program.

Doctoral Dissertation Committee

A doctoral dissertation committee shall be appointed for each student during the first year of enrollment. The purpose of the dissertation committee is to:

1. develop, with the student, the program of study for the intended specialty field under the Ph.D. program;
2. design and administer the required Ph.D. examinations; and
3. provide the technical guidance to the student during the dissertation portion of the doctoral program.

The doctoral dissertation committee shall consist of at least three faculty members. A minimum of two members must be from the Civil and Construction Engineering Department including the committee chair. All members of the committee must be either full or associate members of the graduate faculty.

Computer Science

Steven Carr, Chair
Main Office: B-237 Parkview Campus
Telephone: (269) 276-3101
Fax: (269) 276-3122

Ala Al-Fuqaha
Elise de Doncker
Alvis Fong
Ajay Gupta, Director of Graduate Programs
Jason Johnson
John Kapenga
Leszek Lilien
Fahad Saeed
Wuwei Shen
Zijiang Yang

Master of Science in Computer Science

Advising:
B-237 Parkview Campus

The master's program in computer science emphasizes both computer software development and the theoretical foundations of computer science. It is designed to prepare students for professional positions in business, industry, and government and to provide preparation for graduate work at the doctoral level.

Areas of faculty specialization include algorithmic complexity theory; artificial intelligence; bioinformatics; cloud computing; compiler optimization; computational science (biology, chemistry, finance, mathematics/statistics, medicine, physics); computer architecture; computer graphics; computer networking; computer security; data analytics; data warehousing and mining; distributed and mobile data bases; embedded systems; formal specification and verification; human-computer interaction and visualization; high-performance computing; knowledge-based systems; language and automata theory; mathematical and computer modeling; multimedia databases and systems; neural networks; parallel and distributed algorithms; pattern recognition and image processing; scientific computing and numerical analysis; simulation; software engineering and web applications.

The master's program is designed to allow a full-time student entering with a strong undergraduate background in computer science to complete all degree requirements within 16 months; however, it is common for a student to take longer.

<u>Admission Requirements</u>
A successful applicant to the master's program in computer science must satisfy:

1. All of the general admission criteria identified in the Graduate Catalog.
2. Submission of transcripts of prior higher education. Applicants should have earned or are expected to earn an undergraduate degree in a program with significant computer science and mathematics contents that cover the following subjects:

    a. In computer science: computer assembly language, computer organization, data and file structures, logic design, systems programming concepts, object-oriented and structured programming.
    b. In mathematics: calculus, probability or statistics, and discrete structures.

The program welcomes applications from strong students who do not have a computer science undergraduate degree but have completed at least one calculus course and two programming courses at the university level prior to applying.

An applicant who did not take the subjects listed above may be given conditional admission with prerequisites and asked to complete designated undergraduate courses with a grade of "B" or better from the following list:

CS 1110 Computer Science I
CS 1120 Computer Science II
CS 1310 Discrete Structures
CS 2230 Computer Organization and Assembly Language
CS 3240 Systems Programming Concepts
CS 3310 Data and File Structures
MATH 1220 Calculus I
College level probability or statistics (2000-level or higher)

Due to the sequential order in which some of the prerequisite courses must be taken, students admitted on a conditional basis might not initially be able to take a full-time course load in only computer science courses.

3. While Graduate Record Examination scores are not required for admission to the master's program, applicants are encouraged to submit them.
4. The TOEFL or an equivalent English examination result is required for international students.
5. At least three reference letters.

Prerequisite admission requirements

A student having prerequisite requirements as a condition of admission must complete all designated prerequisites:

- Before registering for any 6000-level computer science courses, and
- Before being considered as a candidate for the master's program.

Students who feel they have the background in a listed prerequisite should contact the Director of Graduate Programs and provide documentation. With adequate documentation a prerequisite can be waived.

Program Requirements

A successful candidate of the Master's degree in Computer Science is responsible for all the general requirements for a master's degree as stated in the Graduate Catalog. At least ***50 percent*** of the credit hours counted toward the master's degree must be ***at the 6000-level or higher*** and be taken in computer science at Western Michigan University. Prerequisite courses must be taken in the proper sequence. Once a 6000-level course, which is to be counted in the program of study, has been successfully completed, any prerequisite of that course taken later cannot be included in the program of study.

The program consists of ***30 credit hours***, including ***three foundation courses***: CS 5310 (Algorithms), CS 5541 Computer Systems and CS 5800 (Theory Foundations), each for 3 credit hours (taught as two hours lecture and two recitation hours). These foundation courses must be taken at the first offering in a student's master's program. The remaining ***21 elective credits*** include ***regularly offered courses*** and individually selected independent study/research/thesis credit as follows:

• ***Up to 6 credit hours*** (total) of: CS 5990 (Independent Study), CS 7100 (Independent Research), CS 7120 (Professional Field Experience), and CS 6970 (Master's Project). Thus if students select 6 hours of independent study/research credit, their program will consist of: 3 foundation courses, 6 hours of independent study/research courses and 15 other remaining elective hours.

CS 7120 (Professional Field Experience) requires prior approval of the department, and credit is not given for past experience.

CS 6970 (Master’s Project) is performed by the student under the supervision of a (faculty) project director, and the completed research is documented in a technical report. The report must be approved by the project director and the Department Chair, and presented by the student at a public seminar.

• CS 7000 (Master's Thesis) may be selected for ***6 credit hours*** and is recommended for students pursuing doctoral studies. Up to 3 hours of independent study/research credit may be taken in addition to the Master's thesis. Under

this option, therefore, the student's program may consist of: 3 foundation courses, 6 hours of Master's thesis credit, 3 hours of independent study/research and 12 other remaining elective hours.

The thesis study is done under the supervision of a thesis director and thesis committee. A thesis director is appointed by the department upon petition by the student. A master's thesis committee is approved by the Graduate College based on the petition of the student, the agreement of the proposed committee members, and the appointment and recommendation of the Department Chair. The master's thesis committee is comprised of the thesis director and at least two other members of the graduate faculty in computer science. The committee members facilitate and guide the student's academic and research development. Before a student is awarded the master's degree, each member of the master's thesis committee must approve the thesis. The completed thesis is presented by the student at a public seminar and oral defense.

Transfer credit

A student may transfer up to 6 credit hours taken outside of the Computer Science Department at WMU. Such credit requires prior approval by their advisor and the department graduate committee.

Financial Assistance
Students accepted into the master's program may apply for one of the department's graduate teaching and research assistantships. Graduate internship opportunities with local industries are also available. Applications for teaching and research assistantships should be sent directly to the Department of Computer Science. Application forms and instructions for financial assistance can be obtained from the department. Information about non-departmental assistantships and fellowships, tuition remission, special assistance for minority graduate students, general research funds, and tuition grants is available from the Graduate College. Information about student loans and other federal, state, and University need-based financial aid programs is available from the Office of Student Financial Aid and Scholarships.

Master of Science in Computer Science (Accelerated)

The Accelerated Graduate Degree Program (AGDP) gives an opportunity to undergraduate students majoring in computer science to complete the requirements for the master's degree at an accelerated pace. These undergraduate students may count up to 12 (but not fewer than 6) credit hours of 5000-level courses taken during their undergraduate studies toward a master's degree in computer science within 24 months after the completion of their bachelor's degree in computer science. These students may choose to pursue a master's degree in computer science under either the thesis option or the non-thesis option.

This program will allow an undergraduate student majoring in computer science to complete an accelerated master's in computer science by completing 140 combined undergraduate/graduate credit hours.

Application for the Accelerated Graduate Degree Program

A prospective student who meets the eligibility requirements (see Criteria for Admission) must set up a meeting with the CS undergraduate advisor and the graduate advisor to develop a Plan of Work for the bachelor's program and master's degree programs.

Before admission to an AGDP can be finalized, students must submit the standard application for admission to the Office of Admissions/Graduate Admissions including:

1. An application
2. Application fee
3. Copy of all transcripts
4. A Plan of Graduate Work, signed by the prospective student, the undergraduate program director and the graduate program director.

The Plan of Graduate Work for the Master’s degree must clearly indicate:

1. the 5000-level courses (a maximum of 12 graduate credit hours) that will be counted for both the bachelor's and master's degrees,
2. the graduation date for the master's degree that meets the time limit for the AGDP (i.e. obtaining a master's degree in computer science within 24 months of completing the bachelor's degree). Any changes to the AGDP Plan of Graduate Work must be submitted in writing and approved by the graduate program director and graduate dean.

Criteria for Admission to the Accelerated Graduate Degree Program

Admission to the AGDP is contingent on meeting the following eligibility requirements:

1. Students must have completed a minimum of eighty (80) and a maximum of ninety-six (96) credit hours in their undergraduate programs, including credits earned from advanced placement.
2. Transfer students must have completed, as a full-time undergraduate student at WMU, a minimum of 15 WMU computer science credit hours and a minimum of 30 WMU credit hours.
3. Students must have a minimum accumulated grade point average (GPA) of 3.25 at WMU and 3.5 in computer science classes.
4. International students must clarify their visa status with the Office of International Student and Scholar Services before submitting an admission application.

Admission to the AGDP does not guarantee admission to the Graduate College. However, successful completion of an undergraduate degree with a cumulative GPA of 3.00 will ensure admission to the Graduate College.

Requirements for Participation and Graduation

1. Students must complete the bachelor's degree prior to entering the master's program. Students in the AGDP may not elect to by-pass the bachelor's degree.
2. Students will be allowed to count only a maximum of twelve (12) 5000-level credits taken during their undergraduate studies toward their master's degree. These credits should be registered as graduate credit and will be waived from their master's degree.
3. It is highly recommended that AGDP students take CS 5310 (Algorithms); CS 5541 (Computer Systems); and CS 5800 (Theory Foundations), or their equivalents offered by the department as these foundations courses are required for the master's degree.
4. Students must receive a grade of B (3.00/4.00) or better in the 5000-level courses taken during their undergraduate studies. Courses with a grade of CB or below cannot be counted toward their master's degree.
5. Students who do not meet the grade criterion of 3.00 will have the earned grade applied to their undergraduate program only, assuming that the earned grade meets the requirements of the undergraduate program. Students who do not meet the grade criterion as part of the AGDP must apply for readmission into the graduate program.
6. Students who complete the undergraduate degree including a "B" or above in the specified 5000-level graduate courses will be admitted as graduate students (with the relevant graduate credit) in the next semester or session after receiving the bachelor's degree.
7. No more than twelve (12) hours of graduate work may be counted towards the requirements of the student's bachelor's degree.
8. Students must complete the master's degree within 24 months from the completion of the bachelor's degree. If the master's program is not completed within these time limits, none of the 5000-level courses specified in the Plan of Graduate Work can be counted toward the master's degree. The graduate program director only in special circumstances may grant extension to this time-line.

Continuing Eligibility

1. It is the responsibility of the student to recognize his/her eligibility status.
2. A student completing the bachelor's degree requirements with an accumulated GPA of less than 3.25 is automatically terminated from the AGDP.

3. A student who does not follow the approved Plan of Graduate Work may become ineligible to participate in the AGDP.
4. A student who is ineligible to participate in (or withdraws from) the AGDP can no longer qualify for waiving any of the courses specified in the Plan of Graduate Work toward a master's degree. These courses, however, may be counted towards the student's bachelor's degree upon discretion of the undergraduate advisor.
5. A student who becomes ineligible to participate in the AGDP shall be informed by the graduate advisor in writing of the ineligibility. A copy of this letter to the student shall be sent to the Graduate College.

Withdrawal

A student may at any time withdraw from an approved AGDP by informing the director of undergraduate programs and the graduate advisor in writing. A copy of this request to withdraw must be sent to the Graduate College for approval.

Eligible Courses for the Accelerated Degree Program

To select courses for the AGDP, students will work with their undergraduate advisor and the graduate program director, who will decide which credits in the current undergraduate curriculum will be replaced by the AGDP credits. It is the responsibility of the students to make sure they have completed all needed prerequisites for the courses they wish to elect for use in the AGDP. The following is the list of the current 5000-level courses from which students will elect their twelve (12) credit hours for the AGDP administered by the Department of Computer Science:

CS 5250 - Computer Architecture Credits: 3 hours
CS 5260 - Parallel Computations Credits: 3 hours
CS 5270 - Computer Graphics Credits: 3 hours
CS 5300 - Artificial Neural Systems Credits: 3 hours
CS 5310 - Algorithms Credits: 3 hours
CS 5400 - Design of User Interfaces Credits: 3 hours
CS 5430 - Database Systems Credits: 3 hours
CS 5541 - Computer Systems Credits: 3 hours
CS 5550 - Computer Networks and Distributed Systems Credits: 3 hours
CS 5560 - Network Programming Credits: 3 hours
CS 5600 - Software Requirements Analysis and Design Credits: 3 hours
CS 5700 - Computer Security and Information Assurance Credits: 3 hours
CS 5800 - Theory Foundations Credits: 3 hours
CS 5810 - Compiler Design and Implementation Credits: 3 hours
CS 5820 - Artificial Intelligence Credits: 3 hours
CS 5950 - Advanced Topics in Computer and Information Science Credits: 1 to 3 hours

Recall that these 12 credit hours must be taken for graduate credit at the time of registration.

Doctor of Philosophy in Computer Science

The doctoral program is designed to develop computer scientists with research expertise in computer science. Specific areas of emphasis include algorithmic complexity theory; artificial intelligence; bioinformatics, cloud computing; compiler optimization; computational science (biology, chemistry, finance, mathematics/statistics, medicine, physics); computer architecture; computer graphics; computer networking; computer security; data analytics; data warehousing and mining; distributed and mobile data bases; embedded systems; formal specification and verification; human-computer interaction and visualization; high-performance computing; knowledge-based systems; language and automata theory; mathematical and computer modeling; multimedia databases and systems; neural networks; parallel and distributed algorithms; pattern recognition and image processing; scientific computing

and numerical analysis; simulation; software engineering and web applications. The program also permits a student to acquire expertise in closely related fields such as computer engineering and mathematics.

Students completing the program are typically well qualified for teaching and research positions with colleges and universities as well as with national and international industries and laboratories.

The doctoral program is designed to allow a full-time student entering with a Master of Science in Computer Science to complete all degree requirements within three years. However, it is common for students to take longer.

Admission Requirements

A successful applicant to the doctoral program in computer science must satisfy all of the general admission criteria identified in the Graduate Catalog and submit the following documents:

1. Transcripts of prior higher education.
    a. Applicants should have earned or expect to earn a master's degree in computer science. An applicant with a master's degree in electrical or computer engineering, mathematics or a related field will also be considered.
    b. An outstanding student who has completed a bachelor's degree and has met all other entrance requirements may also be considered.
2. Results of the Graduate Record Examination (GRE) General Test.
3. Three letters of reference from persons able to assess the student's qualifications for doctoral-level study and likelihood of success. The department may also directly contact referees after the submission of the reference letters.
4. A resume that includes a description of academic background and professional experience.
5. An essay describing the applicant's academic and professional objectives.
6. For international students, the TOEFL or equivalent English language examination result.

Financial Assistance

Students accepted into the doctoral program may apply for one of the department's graduate teaching and research assistantships. In addition, students may apply for one of a limited number of doctoral associateships. Graduate internship opportunities with local industries are also available. Applications for teaching and research assistantships should be sent directly to the Department of Computer Science. Application forms and instructions for financial assistance can be obtained from the department. Information about non-departmental assistantships and fellowships, tuition remission, special assistance for minority graduate students, general research funds, and tuition grants is available from the Graduate College. Information about student loans and other federal, state, and University need-based financial aid programs is available from the Office of Student Financial Aid and Scholarships.

Program Requirements

A successful candidate for the Ph.D. degree in computer science is responsible for all the general requirements for a doctoral degree as stated in the Graduate Catalog. The remainder of this section restates some of the general requirements and includes additional requirements specific to the doctoral program in computer science.

1. Prerequisites
A student having prerequisite requirements as a condition of admission must successfully complete all prerequisites before being considered to have entered the doctoral program.

2. Required credit hours
The Ph.D. in computer science requires beyond the student's master's degree the completion of at least 30 credit hours of graduate course work and 12-24 hours of dissertation credits. This implies a total of at least 72 credit hours of graduate work.

The minimum requirement of the completion of 30 credit hours of course work past the master’s degree is satisfied by: (i) 18 credit hours of regular course work not including independent study, research, seminars and professional

field experience; (ii) 3 credit hours of CS7100, Independent Research, to be successfully completed by the third semester of enrollment, followed by 3 credit hours of CS7350, Graduate Research, to be taken during the first two years of enrollment culminating in an approved research report submitted to the department; and (iii) 6 credit hours of course work that may include regular courses, independent study, research, seminars and professional field experience.

3. Demonstrate competency in two research skills.
Each Ph.D. candidate must obtain departmental approval and demonstrate mastery of two of the following three research skills:

a. A foreign language other than English, with competency equivalent to a 4000-level course at WMU;
b. Statistics or probability at the level of MATH 3620 or MATH 3640.
c. Computer document preparation and library tools.

4. General qualifying examination
Before admission to candidacy for the doctoral degree, the student must pass a general qualifying examination in computer science. Students admitted with a master's degree must take one qualifying examination no later than the first time offered after completion of 15 credit hours and must take the second examination no later than the first time offered after completion of 30 credit hours. All students must take all their qualifying examinations no later than the first time offered after completion of 45 credit hours. A student has one opportunity to repeat the qualifying examination.

There are six examination topic areas in two categories as follows:

a. Systems: Computer architecture (CS 6250); Operating systems (CS 6550); Computer Networks (CS 6560); Compiler Optimization (CS 6810)
b. Theory: Design and analysis of algorithms (CS 6310 or CS 6320); Theory of computation (CS 6800)

The student must select three of the six areas for his or her qualifying examination, with at least one exam from each category. The student will have the opportunity to repeat a portion of the qualifying examination once, but may not change the selected areas. The department will determine what area(s) of the examination, if any, the student must repeat.

The qualifying examination may be satisfied by taking the 6000-level courses of the three selected areas (i.e., three of CS 6250, 6310 or 6320, 6550, 6560, 6800, 6810). To satisfy the qualifying examination requirements, the three selected courses must be passed with at least a "BA" grade.

5. Preliminary Examination
Each doctoral candidate must obtain approval from his or her dissertation committee for a dissertation topic and research plan. This approval process is called the preliminary examination and is structured by each dissertation committee to fit each candidate's program. The preliminary examination must be completed within one year after passing the qualifying examination and at least one year in advance of the dissertation defense. A candidate has one opportunity to repeat the preliminary examination.

6. Complete and successfully defend a dissertation (12 - 24 credit hours of CS 7300)
A doctoral dissertation, which is the culmination of an original and substantive research effort by the candidate, must be completed and publicly defended. This study is done under the supervision of a dissertation director and dissertation committee. A dissertation director is appointed by the department, typically within the candidate's first two years in the doctoral program and based on the candidate's interests.

The doctoral dissertation committee is appointed by the Graduate College based on the petition of the candidate and the approval and recommendation of the department chair. The doctoral dissertation committee is comprised of the dissertation director and at least two other members of the graduate faculty, at least one of whom shall be from outside the department. The committee members facilitate and guide the candidate's academic and research development.

Before a candidate is awarded the Ph.D. degree, each member of the doctoral dissertation committee must approve the dissertation. The completed dissertation is presented by the candidate at a public seminar and oral defense.

Certificate Program in Information Security: Computer Science

The Information Security: Computer Science Graduate Certificate is an interdisciplinary online practitioner-based offering concentrating in the growing field of information security. This certificate in comprised of five courses offered by the Business Information Systems and Computer Science departments. Two core courses are required and then students must select one of the specialized tracks to complete the certificate.

Students working towards the graduate certificate must be admitted into the graduate college as a non-degree seeking student. Students must have a bachelor degree in either a technical discipline or an appropriate discipline related to their chosen track. Students with other bachelor degrees and professional experience will also be considered.

The graduate certificate is offered completely online. Students do not need to attend classes at the main or any regional campuses in order to earn the certificate. Graduate credit is earned for all passing classes.

Required Courses (15 credit hours)

Core Courses (6 credit hours)
The following two courses must be completed by all students.
CIS 5710 - Information Security Fundamentals Credits: 3 hours
CS 5710 - Network Security Fundamentals Credits: 3 hours

Tracks (9 credit hours)
Students must choose a track and successfully complete all courses from either the Information Security Management Track or the Secure Software and Engineering Track to earn the certificate.

Information Security Management
CIS 6710 - Information Assurance and Security Credits: 3 hours
CIS 6720 - IT Governance and Service Management Credits: 3 hours
CIS 6730 - Cyberwarfare, Cybercrime, and Digital Forensics Credits: 3 hours

Secure Software and Engineering
CS 5730 - Secure System Administration Credits: 3 hours
CS 5740 - Web Application Security Credits: 3 hours
CS 5750 - Secure Software Development Credits: 3 hours

Electrical and Computer Engineering

Bradley Bazuin, Interim Chair
Main Office: B-236 Floyd Hall (Parkview Campus)
Telephone: (269) 276-3150
Fax: (269) 276-3151

Ikhlas Abdel-Qader
Johnson Asumadu
Massood Atashbar
Steve Durbin
Pablo Gómez
Janos Grantner
Daniel Litynski
Damon Miller
Lina Sawalha
Ralph Tanner

Master's Programs:
The Department of Electrical and Computer Engineering offers graduate programs leading to a Master of Science in Engineering (Computer) and to a Master of Science in Engineering (Electrical).

These programs are designed to prepare students for advanced-level graduate study in electrical and computer engineering or professional practice. They provide opportunities for engineering graduates to enhance their background in engineering science analysis and design. Courses are offered in the areas of computer architecture and digital design, communications and signal processing, control systems, electronics, semiconductors and power systems.

Admission Requirements
Applicants must:
1. Satisfy the general admission requirements of the Graduate College.
2. Possess a Bachelor of Science in Electrical Engineering or Computer Engineering from an ABET accredited program in the U.S. or a reputable overseas school as certified by the WMU Office of International Student Services.
3. Have a grade point average of 3.0 or better (A=4) in the last two years of undergraduate work.
4. Submit results of the GRE General Test.

A student with a bachelor's degree in computer science, engineering, mathematics, physics, or science can be considered for probationary admission into the M.S.E. (Electrical) or the M.S.E. (Computer) program with full admission granted after completing undergraduate courses in electrical engineering or computer engineering specified by the department.

Doctoral Program:
The department offers the Doctor of Philosophy in Electrical and Computer Engineering. A student’s doctoral program of study will consist of approved graduate course work, independent research, examinations, and dissertation preparation and defense. The admission and program requirements are listed below.

Master of Science in Engineering (Computer)
Director of Graduate Studies: Damon Miller, B-236 Floyd Hall (Parkview Campus)

Program Options
The program has two options - a thesis option and a course work option. A common requirement for each option is 24 hours of core courses.

Thesis Option
The thesis option is open to selected students interested in research or project work. Students interested in this option must petition the department chair, and each student's thesis committee must be approved by the department chair and the Graduate College Dean. The Thesis Committee Chair must be chosen from the ECE Department faculty. In case of an interdisciplinary topic, a faculty member from any WMU department may be invited as a Thesis Committee Co-Chair.

In addition to taking at least 24 hours of approved courses, students will elect six hours of ECE 7000: Master's Thesis and successfully defend the thesis.

Course Work Option
Students will take at least 33 hours of approved courses.

Program Requirements

Course Work Option
The program (course work option) consists of thirty-three (33) credit hours:

1. At least three hours selected from Computer Engineering Core Foundation Courses.
2. At least three hours selected from Elective Concentration Areas Foundation Courses.
3. A minimum of 12 hours of courses (inclusive of foundation courses and with at least six hours at the 6000-level) selected from the Computer Architecture and Digital Design concentration area.
4. A minimum of nine hours of courses selected from one of the three concentration areas:
   - Communications and Signal Processing
   - Control Systems
   - Electronics and Power System
5. Foundation courses may be counted toward the 12 hours and the 9 hours requirement, respectively.
6. The remaining elective hours of additional graduate courses may be selected from any listed ECE courses, or from the list of graduate courses approved by the department from the following disciplines: computer, electrical, other engineering disciplines, computer science, mathematics, or physics.

Thesis Option
The program (thesis option) consists of thirty (30) credit hours:

1. At least three hours selected from Computer Engineering Core Foundation Courses.
2. At least three hours selected from Elective Concentration Areas Foundation Courses.
3. A minimum of twelve hours of courses (inclusive of foundation courses and with at least six hours at the 6000-level) selected from the Computer Architecture and Digital Design concentration area.
4. The remaining elective hours of additional graduate courses may be selected from any listed ECE courses, or from the list of graduate courses approved by the department from the following disciplines: computer, electrical, other engineering disciplines, computer science, mathematics, or physics
5. Six hours of ECE 7000: Master's Thesis

Computer Engineering Core Foundation Courses (3 hours)
ECE 5510 – Application Specific Integrated Circuit Design Credits: 3 hours
ECE 5530 – Microcontroller Applications Credits: 3 hours
ECE 5540 - Digital Electronics Credits: 3 hours
ECE 5570 – Design of Reconfigurable Digital Machines Credits: 3 hours

Elective Concentration Areas Foundation Courses (3 hours)
ECE 5410 - Electronic Instrumentation Credits: 3 hours
ECE 5550 – Digital Signal Processing Credits: 3 hours
ECE 5710 – State Space Control Systems Credits: 3 hours

Concentration Areas

Computer Architecture and Digital Design

Other courses may be used in place of these courses if PRIOR approval is obtained from the Electrical and Computing Engineering advisor and the department chair.
ECE 5510 – Application Specific Integrated Circuit Design Credits: 3 hours
ECE 5530 – Microcontroller Applications Credits: 3 hours
ECE 5570 – Design of Reconfigurable Digital Machines Credits: 3 hours
ECE 6050 – Advanced Microprocessor Applications Credits: 3 hours
ECE 6500 – Advanced Computer Architecture Credits: 3 hours
ECE 6720 - Fuzzy Control Systems Credits: 3 hours

Communications and Signal Processing
Other courses may be used in place of these courses if PRIOR approval is obtained from the Electrical and Computing Engineering advisor and the department chair.
ECE 5550 – Digital Signal Processing Credits: 3 hours
ECE 5640 - Communication Systems Credits: 3 hours
ECE 6550 – Digital Image Processing Credits: 3 hours
ECE 6640 – Digital Communications Credits: 3 hours
ECE 6650 – Medical Imaging Systems and Analysis Credits: 3 hours
ECE 6660 – Mobile Communications Credits: 3 hours

Control Systems
Other courses may be used in place of these courses if PRIOR approval is obtained from the Electrical and Computing Engineering advisor and the department chair.
ECE 5710 – State Space Control Systems Credits: 3 hours
ECE 5800 – System Modeling and Simulation Credits: 3 hours
ECE 5850 – Mechatronics Credits: 3 hours
ECE 6700 – Modern Control Theory Credits: 3 hours
ECE 6710 – Optimal Control Systems Credits: 3 hours
ECE 6740 – Nonlinear Control Systems Credits: 3 hours

Electronics and Power Systems
Other courses may be used in place of these courses if PRIOR approval is obtained from the Electrical and Computing Engineering advisor and the department chair.
ECE 5200 – Power Electronics: Dynamics and Control Credits: 3 hours
ECE 5410 – Electronic Instrumentation Credits: 3 hours
ECE 5450 - Micro Electro Mechanical Systems Credits: 3 hours
ECE 6300 - Transmission Systems Control Credits: 3 hours
ECE 6410 – Advanced Electronic Instrumentation Credits: 3 hours
ECE 6450 - Advanced Micro Electro Mechanical Systems Credits: 3 hours

Master of Science in Engineering (Computer – Accelerated)

The accelerated graduate degree program (AGDP) allows qualified undergraduate students in the computer engineering program to complete requirements for the master's degree at an accelerated pace. Currently, earning 128 or more undergraduate credit hours is required to receive a bachelor's degree. The master's degree requirement is 33 graduate credit hours with the non-thesis option, or 30 hours with the thesis option. In either case, at least 15 hours must be taken at the 6000-level. Having enrolled in the AGDP a student may count up to 12 credit hours of 5000-level courses taken during their undergraduate studies at WMU toward a master's degree in computer engineering. Full-time students may be able to complete both the bachelor's and master's degrees in a five-year time period.

Application to the Accelerated Degree Program

A prospective student who meets the eligibility requirements (see Criteria for Admission below) must set up a meeting with the ECE undergraduate advisor and the ECE graduate advisor to complete the Accelerated Degree Program form for the master's degree program.

Before admission to an AGDP can be finalized, a student must submit the standard application for admission to the Office of Admissions and Graduate Admissions including:

1. Application
2. Application fee
3. Copy of all college transcripts

Criteria for Admission to the Accelerated Program:

The student must apply through the Office of Admissions and Graduate Admissions and must also apply for admission to the electrical and computer engineering department. After admission into the AGDP, the student's record will indicate the AGDP status. Admission to the accelerated program is contingent on meeting the following eligibility requirements at the time of entering the graduate program:

1. A student must have at least junior standing and earned a minimum of fifteen (15) hours from the electrical and computer engineering department with a major GPA of 3.2/4.0 or better.
2. A student must have a minimum cumulative GPA of 3.4/4.0 based upon credit hours earned at WMU. The GPA is based on at least 30 credit hours at WMU.

Requirements for Participation and Graduation

1. Students must complete the bachelor's degree prior to entering the master's program. Students in the AGDP may not elect to bypass the bachelor's degree.

2. The Accelerated Degree Program Planning form for the master's degree must clearly indicate the 5000-level courses (a maximum of 12 credit hours) that will be counted for both the bachelor's and master's degrees.

3. Students will only be allowed to count to a maximum of twelve (12) 5000-level credits taken during their undergraduate studies toward their master's degree. No more than twelve (12) hours of graduate work may be counted towards the requirements of both degrees.

4. Students must receive a grade of "B" (3.0/4.0) or better in the 5000-level courses taken during their undergraduate studies. Students who do not meet this criterion will have the earned grade applied to their undergraduate program only, and must apply for readmission into the graduate program.

Continuing Eligibility

1. It is the responsibility of the student to recognize his/her eligibility status.

2. A student completing the bachelor's degree requirements with a cumulative GPA of less than 3.0/4.0 is no longer eligible to count the 5000-level credit hours specified on the AGDP Planning form towards the master's degree.

3. A student who does not follow the approved AGDP Planning form may become ineligible to participate in the AGDP program.

4. A student who is ineligible to participate in (or withdraws from the AGDP) cannot count any of the courses specified on the Accelerated Graduate Degree Program Planning form for both bachelor's and master's degrees. These courses, however, may be counted toward the student's bachelor's degree upon the discretion of the ECE undergraduate advisor.

5. A student who becomes ineligible to participate in the accelerated degree program must be informed by the ECE undergraduate advisor in writing of his/her ineligibility. A copy of this letter to the student must be sent to the Graduate College.

Withdrawal

A student may, at any time, withdraw from the accelerated degree program by informing both the ECE undergraduate advisor and the ECE graduate advisor, in writing. A copy of this request to withdraw must be sent to the Graduate College and the registrar's office.

Eligible ECE 5000-Level Courses
ECE 5150 – Real-Time Computing Credits: 3 hours
ECE 5200 – Power Electronics: Dynamics and Control Credits: 3 hours
ECE 5240 – Introduction to VLSI Technology Credits: 3 hours
ECE 5410 – Electronic Instrumentation Credits: 3 hours
ECE 5450 – Micro Electro Mechanical Systems Credits: 3 hours
ECE 5510 – Application Specific Integrated Circuit Design Credits: 3 hours
ECE 5530 – Microcontroller Applications Credits: 3 hours
ECE 5540 – Digital Electronics Credits: 3 hours
ECE 5550 – Digital Signal Processing Credits: 3 hours
ECE 5570 – Design of Reconfigurable Digital machines Credits: 3 hours
ECE 5600 – Time-Varying Fields Credits: 3 hours
ECE 5640 – Communication Systems Credits: 3 hours
ECE 5710 – State Space Control Systems Credits: 3 hours
ECE 5730 – Foundations of Neural Networks Credits: 3 hours
ECE 5950 – Introduction to Advanced Topics Credits: 3 hours

Example
The following is an example of a computer engineering student's schedule in the AGDP during their senior year:

Seventh Semester(14 hours)
General Education Credits: 3 hours
Engineering Science Elective Credits: 3 hours
or
Computer Science Algorithm or OS Elective Credits 3 hours
ECE 5540 - Digital Electronics (ECE/CS Elective Group) Credits: 3 hours
ECE 5600 - Communication Systems (ECE/CS Elective Group) Credits: 3 hours
ECE 4810 - Electrical/Computer Engineering Design I Credits: 2 hours
Permission form required to be signed by ECE advisor and department chair. Must complete ECE 2510, IEE 3160, and either (ECE 3200 or ECE 3300) or (ECE 3550 and ECE 4510).

Eighth Semester (15 hours)
General Education Credits: 3 hours
Engineering Science Elective Credits: 3 hours
or
Computer Science Algorithm or OS Elective Credits 3 hours
ECE 5530 - Microcontroller Applications (ECE/CS Elective Group) Credits: 3 hours
ECE 5550 - Digital Signal Processing (ECE/CS Elective Group) Credits: 3 hours
ECE 4820 - Electrical/Computer Engineering Design II Credits: 3 hours

This sample schedule would allow twelve (12) credits of the 5000-level courses to be counted towards the student's master's degree if all terms and conditions of the AGDP are met.

Master of Science in Engineering (Electrical)

Director of Graduate Studies: Damon Miller, B-236 Floyd Hall (Parkview Campus)

Program Options
The program has two options - a thesis option and a course work option. A common requirement for each option is 24 hours of core courses.

Thesis Option
The thesis option is open to selected students interested in research or project work. Students interested in this option must petition the department chair, and each student's thesis committee must be approved by the department chair and the Graduate College Dean. The Thesis Committee Chair must be chosen from the ECE Department faculty. In case of an interdisciplinary topic, a faculty member from any WMU department may be invited as a Thesis Committee Co-Chair.

In addition to taking at least 24 hours of approved courses, students will elect six hours of ECE 7000: Master's Thesis and successfully defend the thesis.

Course Work Option
Students will take at least 33 hours of approved courses.

Program Requirements

Course Work Option
The program (course work option) consists of thirty-three (33) credit hours:

1. At least three hours selected from Electrical Engineering Foundation courses.
2. At least three hours selected from Elective Concentration Areas Foundation courses.
3. A minimum of 12 hours of courses (inclusive of foundation courses and with at least 6 hours at the 6000-level) selected from one of the three concentration areas:
   - Communications and Signal Processing
   - Control Systems
   - Electronics and Power Systems
4. A minimum of nine hours of courses selected from one of the other available concentration areas including the area Computer Architecture and Digital Design.
5. Foundation courses may be counted toward the 12 hours and the 9 hours requirement, respectively.
6. The remaining elective hours of additional graduate courses may be selected from any listed ECE courses, or from the list of graduate courses approved by the department from the following disciplines: computer, electrical, other engineering disciplines, computer science, mathematics, or physics.

Thesis Option
The program (thesis option) consists of thirty (30) credit hours:

1. At least three hours selected from **Electrical Engineering Core Foundation** courses.
2. At least three hours selected from **Elective Concentration Areas Foundation** courses.
3. A minimum of 12 hours of courses (inclusive of foundation courses and with at least 6 hours at the 6000-level) selected from one of the following concentration areas:
   - Communications and Signal Processing
   - Control Systems
   - Electronics and Power Systems
4. The remaining elective hours of additional graduate courses may be selected from any listed ECE courses, or from the list of graduate courses approved by the department from the following disciplines: computer, electrical, other engineering disciplines, computer science, mathematics, or physics.
5. Six hours of ECE 7000: Master's Thesis

Electrical Engineering Core Foundation Courses (3 hours)

ECE 5410 - Electronic Instrumentation Credits: 3 hours
ECE 5550 – Digital Signal Processing Credits: 3 hours
ECE 5710 – State Space Control Systems Credits: 3 hours

Elective Concentration Areas Foundation Courses

ECE 5200 – Power Electronics Dynamics and Control Credits: 3 hours
ECE 5530 – Microcontroller Applications Credits: 3 hours
ECE 5540 – Digital Electronics Credits: 3 hours

Concentration Areas

Computer Architecture and Digital Design
Other courses may be used in place of these courses if PRIOR approval is obtained from the Electrical and Computing Engineering advisor and the department chair.
ECE 5510 – Application Specific Integrated Circuit Design Credits: 3 hours
ECE 5530 – Microcontroller Applications Credits: 3 hours
ECE 5570 – Design of Reconfigurable Digital Machines Credits: 3 hours
ECE 6050 – Advanced Microprocessor Applications Credits: 3 hours
ECE 6500 – Advanced Computer Architecture Credits: 3 hours
ECE 6720 - Fuzzy Control Systems Credits: 3 hours

Communications and Signal Processing
Other courses may be used in place of these courses if PRIOR approval is obtained from the Electrical and Computing Engineering advisor and the department chair.
ECE 5550 – Digital Signal Processing Credits: 3 hours
ECE 5640 - Communication Systems Credits: 3 hours
ECE 6550 – Digital Image Processing Credits: 3 hours
ECE 6640 – Digital Communications Credits: 3 hours
ECE 6650 – Medical Imaging Systems and Analysis Credits: 3 hours
ECE 6660 – Mobile Communications Credits: 3 hours

Control Systems
Other courses may be used in place of these courses if PRIOR approval is obtained from the Electrical and Computing Engineering advisor and the department chair.
ECE 5710 – State Space Control Systems Credits: 3 hours
ECE 5800 – System Modeling and Simulation Credits: 3 hours
ECE 5850 – Mechatronics Credits: 3 hours
ECE 6700 – Modern Control Theory Credits: 3 hours
ECE 6710 – Optimal Control Systems Credits: 3 hours
ECE 6740 – Nonlinear Control Systems Credits: 3 hours

Electronics and Power Systems
Other courses may be used in place of these courses if PRIOR approval is obtained from the Electrical and Computing Engineering advisor and the department chair.
ECE 5200 – Power Electronics: Dynamics and Control Credits: 3 hours
ECE 5410 – Electronic Instrumentation Credits: 3 hours
ECE 5450 - Micro Electro Mechanical Systems Credits: 3 hours
ECE 6300 - Transmission Systems Control Credits: 3 hours
ECE 6410 – Advanced Electronic Instrumentation Credits: 3 hours
ECE 6450 - Advanced Micro Electro Mechanical Systems Credits: 3 hours

Master of Science in Engineering (Electrical Engineering – Accelerated)

The accelerated graduate degree program (AGDP) allows qualified undergraduate students in the electrical engineering program to complete requirements for the master's degree at an accelerated pace. Currently, earning 125 or more undergraduate credit hours is required to receive a bachelor's degree. The master's degree requirement is 33 graduate credit hours with the non-thesis option, or 30 hours with the thesis option. In either case, at least 15 hours must be taken at the 6000-level. Having enrolled in the AGDP a student may count up to 12 credit hours of 5000-level courses taken during their undergraduate studies at WMU toward a master's degree in electrical engineering. Full-time students may be able to complete both the bachelor's and master's degrees in a five-year time period.

Application to the Accelerated Degree Program

A prospective student who meets the eligibility requirements (see Criteria for Admission below) must set up a meeting with the ECE undergraduate advisor and the ECE graduate advisor to complete the Accelerated Degree Program form for the master's degree program.

Before admission to an AGDP can be finalized, a student must submit the standard application for admission to the Office of Admissions and Graduate Admissions including:

1. Application
2. Application fee
3. Copy of all college transcripts

Criteria for Admission to the Accelerated Program:

The student must apply through the Office of Admissions/graduate admission and must also apply for admission to the electrical and computer engineering department. After admission into the AGDP, the student's record will indicate the AGDP status. Admission to the accelerated program is contingent on meeting the following eligibility requirements at the time of entering the graduate program:

1. A student must have at least junior standing and earned a minimum of fifteen (15) hours from the electrical and computer engineering department with a major GPA of 3.2/4.0 or better.
2. A student must have a minimum cumulative GPA of 3.4/4.0 based upon credit hours earned at WMU. The GPA is based on at least 30 credit hours at WMU.

Requirements for Participation and Graduation

1. Students must complete the bachelor's degree prior to entering the master's program. Students in the AGDP may not elect to bypass the bachelor's degree.

2. The Accelerated Degree Program Planning form for the master's degree must clearly indicate the 5000-level courses (a maximum of 12 credit hours) that will be counted for both the bachelor's and master's degrees.

3. Students will only be allowed to count to a maximum of twelve (12) 5000-level credits taken during their undergraduate studies toward their master's degree. No more than twelve (12) hours of graduate work may be counted towards the requirements of both degrees.

4. Students must receive a grade of "B" (3.0/4.0) or better in the 5000-level courses taken during their undergraduate studies. Students who do not meet this criterion will have the earned grade applied to their undergraduate program only, and must apply for readmission into the graduate program.

Continuing Eligibility

1. It is the responsibility of the student to recognize his/her eligibility status.

2. A student completing the bachelor's degree requirements with a cumulative GPA of less than 3.0/4.0 is no longer eligible to count the 5000-level credit hours specified on the AGDP Planning form towards the master's degree.

3. A student who does not follow the approved AGDP Planning form may become ineligible to participate in the AGDP.

4. A student who is ineligible to participate in (or withdraws from the AGDP cannot count any of the courses specified on the Accelerated Graduate Degree Program Planning form for both bachelor's and master's degrees. These courses, however, may be counted toward the student's bachelor's degree upon the discretion of the ECE undergraduate advisor.

5. A student who becomes ineligible to participate in the accelerated degree program must be informed by the ECE undergraduate advisor in writing of his/her ineligibility. A copy of this letter to the student must be sent to the Graduate College.

Withdrawal

A student may, at any time, withdraw from the accelerated degree program by informing both the ECE undergraduate advisor and the ECE graduate advisor, in writing. A copy of this request to withdraw must be sent to the Graduate College and the registrar's office.

Eligible ECE 5000-Level Courses
ECE 5150 – Real-Time Computing Credits: 3 hours
ECE 5200 – Power Electronics: Dynamics and Control Credits: 3 hours
ECE 5240 – Introduction to VLSI Technology Credits: 3 hours
ECE 5410 – Electronic Instrumentation Credits: 3 hours
ECE 5450 – Micro Electro Mechanical Systems Credits: 3 hours
ECE 5510 – Application Specific Integrated Circuit Design Credits: 3 hours
ECE 5530 – Microcontroller Applications Credits: 3 hours
ECE 5540 - Digital Electronics Credits: 3 hours
ECE 5550 – Digital Signal Processing Credits: 3 hours
ECE 5570 – Design of Reconfigurable Digital machines Credits: 3 hours
ECE 5600 – Time-Varying Fields Credits: 3 hours
ECE 5640 – Communication Systems Credits: 3 hours
ECE 5710 – State Space Control Systems Credits: 3 hours
ECE 5730 – Foundations of Neural Networks Credits: 3 hours
ECE 5950 – Introduction to Advanced Topics Credits: 3 hours

Example
The following is an example of an electrical engineering student's schedule in the AGDP during their senior year:

Seventh Semester(15 hours)
Engineering Science Elective Credits: 3 hours - Choose from the above listed 5000-level ECE courses with the approval of the undergraduate and graduate advisors.
Electrical and Computer Engineering Elective Group Credits: hours - Choose from the above listed 5000-level ECE courses with the approval of the undergraduate and graduate advisors.
IME 3100 - Engineering Economy Credits: 3 hours
ECE 3300 - Electrical Machinery Credits: 4 hours
ECE 4810 - Electrical/Computer Engineering Design I Credits: 2 hours
Permission form required to be signed by ECE advisor and department chair. Must complete ECE 2510, IEE 3160, and either (ECE 3200 or ECE 3300) or (ECE 3550 and ECE 4510).

Eighth Semester (15 hours)
General Education Credits: 3 hours
Engineering Science Elective Credits: 3 hours
Electrical and Computer Engineering Elective Group Credits: 6 hours (2 classes at 3 hours) - Choose from the above listed 5000-level ECE courses with the approval of the undergraduate and graduate advisors.
ECE 4820 - Electrical/Computer Engineering Design II Credits: 3 hours

This sample schedule would allow twelve (12) credits of the 5000-level courses to be counted towards the student's master's degree if all terms and conditions of the AGDP are met.

Doctor of Philosophy in Electrical and Computer Engineering
Director of Graduate Studies: Damon Miller, B-236 Floyd Hall (Parkview Campus)

The Doctor of Philosophy in Electrical and Computer Engineering is designed to provide students advanced electrical/computer engineering education and research opportunities. The program will engage doctoral students in independent research in the field of electrical/computer engineering which will prepare them for research and development positions in the rapidly growing information and electronics sectors.

Current research areas in the department include real-time embedded systems, biomedical engineering, signal processing, image processing, sensors and nanotechnology, biological neural networks, fuzzy logic, energy conversion, power electronics systems, communications and networking, and control systems. The department has seven instructional laboratories in electric circuits, digital logic, energy conversion systems, microcomputer systems, and programmable digital systems, and digital/analog electronics. In addition, there are seven labs for student and faculty research. These labs include radio frequency shield rooms, a digital signal-processing lab, an image processing lab, a RF communications and RFID lab, an intelligent fuzzy controllers lab and a smart sensors and structures lab.

Admission Requirements

To be admitted to the Ph.D. program, a student must satisfy the following requirements:

1. Satisfy the general admission requirements of the Graduate College.
2. Possess an M.S. in electrical or computer engineering, with a minimum 3.0 grade point average. Exceptional applicants with a master's degree in other closely related quantitative fields such as engineering, mathematics, physics, or computer science will be considered on a case by case basis, after completing a prescribed set of prerequisite courses.
3. Submit results of the GRE General Test.
4. Three (3) recommendation letters from faculty familiar with the student's work.
5. A personal statement of intended research goals, intended academic fields(s) of interests, and any previous research experiences written by the applicant.

All requirements for the Ph.D. must be completed within seven (7) years preceding the date on which the degree is conferred.

Program Requirements

The credit hour, course work, and general program requirements include:

1. Minimum of 50 credit hours beyond the master's degree to include:

a. 15 hours of:

ECE 7300 - Doctoral Dissertation Credits: 15 hours

b. A maximum of 12 hours of:

ECE 6970 - Problems in Electrical and Computer Engineering Credits: 1-6 hours or

ECE 7100 - Independent Research Credits: 2-6 hours

c. A minimum of 2 hours of:

ECE 7250 - Doctoral Research Seminar Credits: 2-6 hours

d. A minimum of 21 hours of graduate course work approved by the doctoral dissertation committee at least 12 hours of which should be ECE courses.

2. Ph.D. Qualifying Examination, to be taken within the first year after admission.

3. Comprehensive Examination administered by the doctoral dissertation committee to be taken before a student becomes a doctoral candidate.

4. The general graduation requirements of the Graduate College.

5. Presentation/publication requirements as specified by the doctoral dissertation committee.

6. Research Tools:

The required tools are a graduate course in (1) simulation and modeling and (2) statistics. Competency will be based on successful completion (with a "B" or better grade) of the following:

ECE 5800 - System Modeling and Simulation Credits: 3 hours

STAT 6600 - Statistical Theory II Credits: 4 hours

7. A one-year residency during which the student will conduct research.

8. Final dissertation defense and approval by committee.

Engineering Design, Manufacturing, and Management Systems

Steven Butt, Chair
Main Office: F-232 Parkview Campus
Telephone: (269) 276-3350
Fax: (269) 276-3353

Kailash Bafna
Alamgir Choudhury
Tarun Gupta
Pavel G. Ikonomov
David M. Lyth
Sam N. Ramrattan
Jorge Rodriguez

The Department of Engineering Design, Manufacturing, and Management Systems offers a Master of Science in Manufacturing Engineering.

Master of Science in Manufacturing Engineering

Advisor: Paul Engelmann
Room E-103 Parkview Campus

The Master of Science in Manufacturing Engineering is designed to provide advanced competencies in the areas of computer-aided manufacturing, computer-aided design and analysis, and integrated processing of polymers, metals, and composite materials. This program is designed for decision-makers in manufacturing engineering, engineering graphics and design, process engineering, quality assurance, and tooling design.

The Master of Science in Manufacturing Engineering requires 30 credit hours with a minimum "B" average and no grade below "C". The program includes 15 hours of core classes, and 15 hours of electives. The specific career path objectives of the individual may be met by focusing the electives and optional thesis or project. The master's degree candidate shall work with his/her academic advisor to tailor all elective course work.

To meet needs of part-time graduate students, evening courses are offered. In addition, the program allows sufficient time to complete the degree. Showing annual progress, a minimum of three courses taken per year will allow completion of the degree under four years.

Graduate courses are offered each semester at the Grand Rapids Graduate Center-Beltline each semester. Check course listings or with your advisor for details.

Admission Requirements:
A candidate for admission to the Master of Science program in Manufacturing Engineering must:

1. Possess a baccalaureate degree with a major in a technical field such as engineering or technology.
2. Show evidence of competency in computer programming, mathematics through the calculus level, statistics, two semesters of physics, and one semester of chemistry with laboratories.
3. Possess a grade point average of 3.0 or better during the last two years of undergraduate work.
4. Submit GRE (Graduate Record Examination) scores from the General Test.
5. Have completed undergraduate courses or have equivalent work experience in CAD, CAM, properties of materials, metrology, quality control, manufacturing processes, statics, and strength of materials. If a candidate's background is deficient, foundation courses will be required.

Apply online at www.wmich.edu/apply/graduate/

Program Requirements:

The following general requirements apply to the Master of Science in Manufacturing Engineering program: The candidate must complete the program within a six-year period. A maximum of six credit hours can be accepted in transfer. At least one-half of the credits earned must be in courses numbered 6000 or above. There is no limit to the amount of time between completion of the bachelor's degree and the start of the graduate program.

Core Classes (15 hours):
EDMM 5070 - Computer Integrated Manufacturing Credits: 3 hours
EDMM 5460 - Concurrent Engineering Credits: 3 hours
IEE 6060 - Capital Budgeting and Cost Analysis Credits: 3 hours
EDMM 6810 - Process Monitoring and Control Credits: 3 hours
IEE 5160 - Design of Experiments and Regression Analysis Credits: 3 hours

Approved Electives:

Below is a partial listing of approved elective courses to complete the degree requirements. Electives will be chosen in consultation with the academic advisor upon acceptance to the Master's Program. Other courses may be approved as electives by the faculty advisor to allow the candidate to focus the program toward the candidate's area of interest.

EM 5080 - Advanced Quality Management Credits: 3 hours
IEE 5420 - Human Factors Engineering Credits: 3 hours
EDMM 5500 - Advanced Plastics Processing Credits: 3 hours
EDMM 5520 - Casting Simulation and Solidification Credits: 3 hours
EM 6000 - Concepts and Principles of Engineering Management Credits: 3 hours
IEE 6040 - Facilities Planning and Design Credits: 3 hours
IEE 6080 - Reliability Engineering Credits: 3 hours
EM 6120 - Production/Operations Management Credits: 3 hours
EM 6140 - Project Management Credits: 3 hours
EDMM 6450 - Design for Manufacturability Credits: 3 hours
EDMM 6560 - Material Selection and Processing Credits: 3 hours
EDMM 6580 - CAM Applications Credits: 3 hours
EDMM 6970 - Problems in Manufacturing Credits: 3 hours
EDMM 7000 - Master's Thesis Credits: 6 hours

Industrial and Entrepreneurial Engineering & Engineering Management

Steven E. Butt, Chair
Main Office: F-232 Floyd Hall (Parkview Campus)
Telephone: (269) 276-3356
Fax: (269) 276-3353

Kailash Bafna
Tycho K. Fredericks
Tarun Gupta
Abdolazim Houshyar
David M. Lyth
David Meade
John Patten
Diana Prieto
Lee Wells
Bob White

The Department of Industrial and Entrepreneurial Engineering & Engineering Management offers a Master of Science in Engineering (Industrial), Master of Science in Engineering (Industrial-Accelerated), a Master of Science in Engineering Management, and a Doctor of Philosophy in Industrial Engineering.

Master of Science in Engineering (Industrial)

Advisor: Abdolazim Houshyar
Room E-219 Parkview Campus

Graduates of the Master of Science in Engineering (Industrial) program can look forward to career opportunities with various higher levels of responsibility. Areas of opportunity include: advanced computer integrated manufacturing, total quality management, analysis and design of experiments, ergonomics and human factors, engineering management, facilities planning and design, financial and cost analysis, reliability engineering, operations research, simulation modeling, and project management.

Opportunities for industrial engineers continue to grow with the rapid expansion of the service/information sectors of the economy. Graduates of the program have taken positions with higher levels of responsibility and remuneration.

All required classes are offered in the evening and are arranged so that people employed full time can complete the program in three years.

Admission Requirements

1. Possess a baccalaureate degree in engineering or a related discipline. Students without an engineering degree but with appropriate background in mathematics and science will be required to take IEE 5010: Survey of Industrial Engineering Topics (3 hours).
2. Meet Graduate College admission requirements.
3. Possess a grade point average of 3.0 or better.
4. Submit GRE scores for the General Test.

Program Options and Requirements

Thesis Option

1. An approved integrated program with a minimum of 30 hours of graduate work distributed as follows:
    a. Eighteen (18) hours, six (6) courses, of core requirements:

IEE 5160 - Design of Experiments and Regression Analysis Credits: 3 hours
IEE 6060 - Capital Budgeting and Cost Analysis Credits: 3 hours

IEE 6110 - Deterministic Methods in Operations Research Credits: 3 hours
EM 6120 - Production/Operations Management Credits: 3 hours
IEE 6300 - Advanced Simulation Modeling and Analysis Credits: 3 hours
IEE 6420 - Ergonomics and Occupational Biomechanics Credits: 3 hours
b. Six (6) hours of:
IEE 7000 - Master's Thesis Credits: 6 hours
c. Six (6) hours of electives.
The specified number of electives may be taken from 5000- or 6000-level courses offered within the Department of Industrial and Entrepreneurial Engineering & Engineering Management. The elective courses must be compatible with the overall program and the career objectives of the student, and must be approved by the program advisor prior to registration. No more than half of the credit hours needed for graduation can be at the 5000 level.

2. A written thesis that meets the Graduate College requirements and an oral examination in defense of the thesis.

3. An overall 3.0 grade point average.

Non-Thesis Option
1. An approved integrated program with a minimum of 30 hrs of graduate work distributed as follows:
a. Eighteen (18) hours, six (6) courses, of core requirements:
IEE 5160 - Design of Experiments and Regression Analysis Credits: 3 hours
IEE 6060 - Capital Budgeting and Cost Analysis Credits: 3 hours
IEE 6110 - Deterministic Methods in Operations Research Credits: 3 hours
EM 6120 - Production/Operations Management Credits: 3 hours
IEE 6300 - Advanced Simulation Modeling and Analysis Credits: 3 hours
IEE 6420 - Ergonomics and Occupational Biomechanics Credits: 3 hours
b. Twelve (12) hours of electives
At least 9 of the 12 credit hours must be from the Department of Industrial and Entrepreneurial Engineering & Engineering Management. The remaining 3 credit hours can be any graduate course offered at WMU. The specified number of electives may be taken from 5000- or 6000-level courses offered within the Department of Industrial and Entrepreneurial Engineering & Engineering Management. The elective courses must be compatible with the overall program and the career objectives of the student, and must be approved by the program advisor prior to registration. Included in the approved electives are IEE 6970 which allows students to pursue independent projects and research, and IEE 6990 which allows students to receive credit for practical training. No more than half of the credit hours needed for graduation can be at the 5000 level.

2. An overall 3.0 grade point average.

Master of Science in Engineering (Industrial – Accelerated)

The Accelerated Master's Degree Program allows undergraduate students in the industrial and entrepreneurial engineering program an opportunity to complete the requirements for the master's degree at an accelerated pace. Undergraduate students may count up to 12 (but no less than six) credit hours of 5000 level courses taken during their undergraduate studies at WMU toward a master's degree in industrial engineering within 30 months of completing their bachelor's degree in industrial and entrepreneurial engineering. Students may choose to pursue a master's degree in industrial engineering under either the thesis option or the non-thesis option. This program will allow an undergraduate student majoring in industrial and entrepreneurial engineering at WMU to complete an accelerated master's in industrial engineering by completing 146 to 152 combined graduate/undergraduate credit hours. The total credit hours will depend on the number of 5000 level courses taken during their undergraduate studies.

<u>Criteria for Admission to the Accelerated Master's Degree Program</u>

Permission to pursue the Accelerated Master's Degree Program does not guarantee admission to the Graduate College. Admission is contingent on meeting the following eligibility requirements at the time of entering the graduate program:

1. Students must have junior standing and a minimum of fifteen (15) IEE credit hours.
2. Students must have a minimum accumulated grade point average (GPA) of 3.5/4.0 at WMU.
3. Exceptions can be approved by the IE Accelerated Master Committee upon written request by the applicant.

Application to the Accelerated Master's Degree Program

1. A prospective student, who meets the eligibility requirements (see Criteria for Admission), must set up a meeting with the IEE undergraduate advisor and IE graduate advisor to develop the Accelerated Degree Program Planning form for the bachelor's and master's degree programs.

2. Before admission to the accelerated master's degree program can be finalized, students must submit the standard application for admission to the Office of Admissions including:

a. an application
b. application fee
c. a copy of all transcripts
d. An Accelerated Degree Program (AGDP) Planning form, signed by the prospective student, the undergraduate advisor and the graduate advisor.

3. The Accelerated Degree Program Planning form for the master's degree must clearly indicate:

a. the 5000 level courses (a maximum of 12 credit hours) that will be counted towards the accelerated master's degree.
b. the graduation date for the master's degree that meets the time limit (i.e. obtaining the master's degree in industrial engineering within 30 months of completing the bachelor's degree). Any changes to the AGDP form must be submitted, in writing, and approved by the graduate advisor and graduate dean.

Requirement for Participation and Graduation

1. Students must complete the bachelor's degree prior to entering the master's program. Students may not elect to by-pass the bachelor's degree.

2. Students will only be allowed to count a maximum of twelve (12) 5000 level credits taken during their undergraduate studies toward their master's degree.

3. Students must receive a grade of "B" or better (3.0/4.0) in the 5000 level courses taken during their undergraduate studies. Courses with a grade of "CB" or below cannot be counted toward their master's degree.

4. No more than 12 hours of work may be counted towards the requirements for both the bachelor's and master's degree.

5. Students must complete the master's degree within 30 months from the completion of the bachelor's degree. If the master's program is not completed within these time limits, none of the 5000 level courses used for the bachelor's degree may count towards the master's degree.

Continued Eligibility

1. It is the responsibility of the student to recognize his/her eligibility status.

2. A student completing the bachelor's degree requirements with an accumulated GPA of less than 3.0/4.0 is no longer eligible to count the 5000 level credit hours specified toward the master's degree and is automatically terminated from the accelerated degree program.

3. A student who does not follow the program, as laid out in the approved Accelerated Degree Program Planning form may become ineligible to participate in the accelerated degree program.

4. A student who is ineligible to participate in (or withdraws from) the accelerated program may not count any of the 5000 level courses specified in the AGDP Planning form towards a master's degree. These courses, however, may be counted toward the student's bachelor's degree upon the discretion of the undergraduate advisor.

5. A student who becomes ineligible to participate in the accelerated master's degree program must be informed by the graduate advisor, in writing, of his/her ineligibility. A copy of this letter to the student must be sent to the Graduate College.

Withdrawal

A student may, at any time, withdraw from an approved accelerated program by informing the director of undergraduate programs and the graduate advisor in writing. A copy of this request to withdraw must be sent to the Graduate College and the registrar's office.

Sample of EDMM, EM, IEE 5000-Level Eligible Courses

The following is a sample list of the 5000 level courses that can be taken by students:
EM 5050 - Continuous Improvement in Operations Credits: 3 hours
EM 5080 - Advanced Quality Management Credits: 3 hours
EM 5120 - Management of Service Operations Credits: 3 hours
IEE 5160 - Design of Experiments and Regression Analysis Credits: 3 hours
IEE 5200 - Modern Industrial Practices Credits: 3 hours
IEE 5420 - Human Factors Engineering Credits: 3 hours
EDMM 5460 - Concurrent Engineering Credits: 3 hours
EDMM 5500 - Advanced Plastic Processing Credits: 3 hours

Master of Science in Engineering Management

Advisors: David M. Lyth
Room E-222 Parkview Campus

The Engineering Management MS program is available both in Michigan and the Riverview, Florida location. Some courses may have an online component or may be delivered entirely online.

The Master of Science in Engineering Management was developed to meet the need for professional leaders in manufacturing and service operations. It "bridges the gap" between engineering and management and it focuses on leadership and the skills necessary to manage people, money and projects. Its objectives are:

1. To enhance the capabilities to deal with resources available in commerce and industry to managing people, money, and projects.
2. To develop the leadership capabilities based on the student's strong technical background and significant managerial skills.
3. To allow students to develop analytical and managerial skills and to acquire knowledge in related fields.
4. To develop their ability to integrate technical, managerial and systems skills to improve the performance of the enterprise.
5. To prepare students for further study in post-master's and doctoral programs as their interest and professional growth require.

The scope of the graduate program includes studies in the areas of engineering, technical resource management, and industrial leadership. The program requires completion of a minimum of 30 semester hours beyond the entry level prerequisites in the student's program.

Admission Requirements
1. Possess a baccalaureate degree with a major in a technical field, such as engineering, technology, mathematics, computer science, or the physical sciences. For other majors, see item 2.
2. Show evidence of completion of at least eight semester hours of mathematics and eight semester hours of physics and/or chemistry with a minimum overall grade point average of 2.5 in these areas.
3. Submit GRE (Graduate Record Examination) scores for the General Test.
4. Undergraduate courses should have been completed in calculus, statistics, computer programming, work methods analysis, operations planning and control, and quality control. Where the student's background is deficient, foundation courses will be required. Students may take IEE 5010 to acquire an understanding of work methods analysis, operations planning and control, and quality control.

Program Requirements
The Master of Science in Engineering Management requires a minimum of thirty (30) hours: 18 hours of core courses and 12 hours of electives.

1. Core courses (18 hours):
EM 5050 - Continuous Improvement in Operations Credits: 3 hours
EM 5080 - Advanced Quality Management Credits: 3 hours
EM 6000 - Concepts and Principles of Engineering Management Credits: 3 hours
IEE 6060 - Capital Budgeting and Cost Analysis Credits: 3 hours
EM 6120 - Production/Operations Management Credits: 3 hours
EM 6140 - Project Management Credits: 3 hours

2. Elective courses (12 hours at minimum)
To be selected from a set of approved graduate courses available in the Department of Industrial and Entrepreneurial Engineering & Engineering Management and other departments within the University. The elected courses must be compatible with the overall program and the career objectives of the student, and must be approved by the program advisor prior to registration. Included in the electives is EM 6970: Problems in Engineering Management which allows for students to pursue independent projects and research and EM 6990 where students can receive credit for practical training.

3. An overall 3.0 grade point average.

Doctor of Philosophy in Industrial Engineering

Advisor: Bob White
Room E-216 Parkview Campus

The Doctor of Philosophy in Industrial Engineering is designed to intensify the student's knowledge and comprehension in the various disciplines of the subject with emphasis on original research in a chosen area of specialty. It will assist individuals wishing to pursue a career as a research practitioner in industry and government or teaching and research careers in industrial engineering in colleges and universities. The program emphasizes breadth and depth of knowledge and requires students to complete a dissertation research project.

Admission Requirements
Application materials may be obtained from the Office of Admissions, Graduate Admissions and from the Department of Industrial and Entrepreneurial Engineering & Engineering Management. International students must contact the Office of International Services and Student Affairs for admission information and to obtain application materials.

Admission decisions will be made by the department doctoral committee. All students must meet the general requirements for a doctoral degree specified elsewhere in this Graduate College Catalog. In addition to these requirements, the student must fulfill either of two educational requirements: a bachelor's degree in engineering or related discipline from an Accreditation Board for Engineering and Technology (ABET/EAC), accredited engineering program, including at least three courses in industrial engineering, or a master's degree in engineering from a department offering an ABET accredited undergraduate program, including at least five courses in industrial

engineering. Three letters of recommendation must be submitted. Students not having these requirements may be conditionally admitted, with full admission granted upon completion of additional prerequisites.

Applicancy Requirements

The applicancy requirements are those stated in the general requirements of the Graduate College. The student should establish a dissertation committee by the end of the first year. The committee will be composed of at least three members of the Department of Industrial and Entrepreneurial Engineering & Engineering Management, and one or more outside member.

Candidacy Requirements

The applicant should seek candidacy by the end of the third calendar year after enrollment in the Ph.D. program. By this time the student should have completed the course work and have a preliminary plan for the dissertation endorsed by the chair of his/her dissertation committee. To be admitted to candidacy, the student must successfully complete the comprehensive examination. This exam, administered by the doctoral committee, will be composed of both a written and an oral component. The written portion will include questions submitted by the student's doctoral committee and those drawn from the departmental pool of questions relating to the core courses. The oral component will be administered and evaluated by the doctoral committee. If student fails the comprehensive exam, the student can apply to retake the exam in the next semester. A second failure results in dismissal from the program. Candidacy will be approved or denied based upon the student's performance in the course work, successful completion of the comprehensive examination, and a positive recommendation of the dissertation committee.

Financial Assistance

The Department of Industrial and Entrepreneurial Engineering & Engineering Management offers opportunities for financial support of doctoral students through doctoral associateships, graduate assistantships, and fellowships. Information is available from the department or the Graduate College.

Program Requirements

In addition to the Graduate College requirements, the following requirements must be fulfilled:

1. Seventy five (75) credit hours of courses beyond the baccalaureate. A student with a master's degree may be able to transfer up to thirty (30) credit hours, with this decision being made by the doctoral committee at the time of admission:
    a. The determination of how the master's level credits can be used to fulfill the requirements listed below is made at the time of admission.
    b. For a student entering the program with a bachelor's degree, a maximum of twenty one (21) credit hours of 5000-level, post-baccalaureate graduate courses can be applied to the Ph.D. program; for a student entering the program with a master's degree, a maximum of six (6) credit hours of 5000-level courses beyond the master's degree can be applied to the Ph.D. program.
2. The credit hours are grouped into six areas as follows:
    a. Eighteen (18) hours of core courses with three (3) hours of IEE 7250 required.
    b. Twelve (12) hours from the engineering management concentration area.
    c. Nine (9) hours from one of the area of specialization course groups.
    d. Eighteen (18) hours of electives chosen from the graduate offerings of Industrial and Entrepreneurial Engineering & Engineering Management or other departments appropriate to the student's research interest as mutually agreed upon by the student and the dissertation committee.
    e. Three (3) hours of electives related to teaching methodology.
    f. Fifteen(15) hours of IEE 7300, Doctoral Dissertation.
3. Successful completion of the comprehensive examination after completion of all course work.
4. Successful oral defense of the dissertation and approval of the dissertation by the committee and the Graduate College.
5. Successful completion of the teaching internship requirement.
6. Residency Requirement: Enrollment on campus in four consecutive semesters or sessions.
7. Research Tool: The required research tools are Probability and statistics. Competency will be based on successful completion of STAT 6600 or equivalent with a grade of "B" or better.

Mechanical and Aerospace Engineering

Koorosh Naghshineh, Chair
Main Office: F-234 Floyd Hall (Parkview Campus)
Telephone: (269) 276-3420
Fax: (269) 276-3421
URL: www.wmich.edu/mechanical-aerospace

Judah Ari-Gur
Shiva Om Bade Shrestha
Christopher S.K. Cho
Muralidhar Ghantasala
Peter Gustafson
Jennifer Hudson
Ho Sung Lee
Kristina Lemmer
William W. Liou
Tianshu Liu
Parviz Merati
Richard Meyer
Kapseong Ro

Master of Science in Aerospace Engineering
Advisor: Peter A. Gustafson

Graduates with the Master of Science in Aerospace Engineering look forward to career opportunities at higher levels of responsibility. Areas of opportunity include, but are not limited to, mechanics of aerospace vehicles and structures, composite materials, finite element analysis, experimental and computational fluid dynamics, flight dynamics and control of aerospace vehicle, advanced control theory and its application to aerospace system, and electric propulsion. Opportunities for aerospace engineers continue to develop with the rapid expansion of the knowledge base.

Class sequencing and scheduling (in evening hours) are arranged so that a working engineer can complete the program in three years while maintaining full-time employment.

Admission Requirements

1. Bachelor of Science in Aerospace Engineering, Mechanical Engineering or a similar discipline from and institution with an ABET/EAC accredited program.
2. Submit results of the Graduate Record Examination (GRE).

Applicants with degrees in other engineering fields or related disciplines may be considered for admission after they have satisfactorily completed the necessary undergraduate prerequisite courses prescribed by the department's graduate advisor. At the Graduate Advisor's discretion, these courses can be all or a subset of:

ME 2560 Statics
ME 2570 Mechanics of Material
ME 2580 Dynamics
AE 2610 Introduction to Aerospace Engineering
AE 3610 Aerodynamics I
AE 3710 Aerodynamics II
AE 3800 Flight Vehicle Performance
AE 4600 Aircraft Stability and Control
AE 4630 Aircraft Structural Design
AE 4660 Aeronautical Propulsion System

MATH 2720 Multivariate Calculus and Matrix Algebra
MATH 3740 Differential Equations and Linear Algebra

Conditional admission may be granted to a student with a baccalaureate degree and less than the required academic record or anyone having a baccalaureate degree from a non-accredited college or anyone needing more than three prerequisite courses. A student admitted on non-degree conditional status may establish eligibility for regular admission by completing the specified prerequisite courses, and securing grades of "B" or better in each course in the first nine hours of graduate work.

A student with a baccalaureate degree who wishes to enroll in courses but does not plan to pursue a program leading to a master's degree, or is not eligible for regular admission may enroll in courses for which prerequisite requirements are satisfied with Non-degree status. If the student later decides to apply for regular admission, no more than nine hours of work taken under Non-degree status will be considered part of a degree program.

Program Options & Graduation Requirements for Master of Science in Aerospace Engineering
Students may choose the Thesis Option for the Non-Thesis Option as described below. A specific program of study for each student is determined in conjunction with and subject to approval of the student's advisor.

Thesis Option
This option of the Master of Science in Aerospace Engineering consists of 30 hours, of which six must be taken as thesis.

1. A minimum of 30 semester hours of credit including:
Nine hours of core Aerospace Engineering graduate level courses.
AE 5100 - Foundations of Structural Mechanics Credits: 3 hours
AE 5200 - Advanced Aerodynamics Credits: 3 hours
AE 5400 - Aerospace Vehicle Dynamics Credits: 3 hours

Nine to fifteen hours of recommended elective courses in the area of Aerospace Engineering graduate level courses.
AE 5760 - Advanced and Electric Propulsion Systems Credits: 3 hours
AE 6710 - Molecular Gas Dynamics Credits: 3 hours
AE 6400 - Atmospheric Flight Dynamics and Control Credits: 3 hours
AE 6410 - Space Flight Dynamics and Control Credits: 3 hours
ME 5610 - Finite Element Method Credits: 3 hours
ME 6370 - Design Optimization Credits: 3 hours
ME 6520 - Mechanics of Composite Materials Credits: 3 hours
ME 6610 - Advanced Finite Elements Credits: 3 hours
ME 5450 - Computational Fluid Dynamics I Credits: 3 hours
ME 6450 - Computational Fluid Dynamics II Credits: 3 hours
ME 6300 - Advanced Fluid Dynamics Credits: 3 hours
ME 6350 - Turbulence Credits: 3 hours
ME 6090 - Combustion Credits: 3 hours
ME 5410 - Continuous System Modeling and Simulation Credits: 3 hours
ME 6330 - Advanced Control Systems Credits: 3 hours
ME 5600 - Engineering Analysis Credits: 3 hours
ME 5620 - Application of Numerical Methods in Engineering Credits: 3 hours

Up to 6 hours of approved elective courses.
ME 5500 - Modern Engineered Materials Credits: 3 hours
ME 5690 - Principles of Fatigue and Fracture Credits: 3 hours
ME 6630 - Structural Vibrations Credits: 3 hours
ME 6500 - Smart Materials Credits: 3 hours
ME 6530 - Fatigue of Engineering Materials Credits: 3 hours
ME 6540 - Composite Materials Credits: 3 hours
ME 6690 - Engineering Fracture Mechanics Credits: 3 hours
ME 5300 - Theoretical and Computational Fluid Mechanics Credits: 3 hours

ME 6590 - Multibody Dynamics Credits: 3 hours
ME 5350 - Applied Spectroscopy Credits: 3 hours

Six hours:
AE 7000 - Master's Thesis Credits: 1 to 6 hours
(Six hours needed)

2. A minimum of six hours must be mathematics oriented
The mathematics-oriented courses may include aerospace and mechanical engineering courses or electives selected from any engineering department in the College of Engineering and Applied Sciences, or in mathematics, computer science, and the physical sciences. Aerospace and mechanical engineering courses satisfying the mathematics requirement include:
ME 5600 - Engineering Analysis Credits: 3 hours
ME 5610 - Finite Element Method Credits: 3 hours
ME 5620 - Application of Numerical Methods in Engineering Credits: 3 hours
ME 6370 - Design Optimization Credits: 3 hours
ME 6610 - Advanced Finite Elements Credits: 3 hours
ME 6330 - Advanced Control Systems Credits: 3 hours

Note: Students who choose to take a class outside the AE approved list of graduate courses must obtain the approval of the AE graduate advisor prior to registering for such class.

3. Satisfactory completion of six (6) hours of the following course under guidance of the thesis advisor and committee.
AE 7000 - Master's Thesis Credits: 1 to 6 hours
(Six hours needed)

Non-Thesis Option
This option of the Master of Science in Aerospace Engineering consists of 36 hours, of which up to six may be taken as project (AE 6970).
1. A minimum of 36 semester hours of credit including:
Nine hours Aerospace Engineering graduate level courses.
AE 5100 - Foundations of Structural Mechanics Credits: 3 hours
AE 5200 - Advanced Aerodynamics Credits: 3 hours
AE 5400 - Aerospace Vehicle Dynamics Credits: 3 hours

Nine to twenty-one hours Recommended elective courses in the area of aerospace engineering graduate level courses.
AE 5760 - Advanced and Electric Propulsion Systems Credits: 3 hours
AE 6710 - Molecular Gas Dynamics Credits: 3 hours
AE 6400 - Atmospheric Flight Dynamics and Control Credits: 3 hours
AE 6410 - Space Flight Dynamics and Control Credits: 3 hours
ME 5610 - Finite Element Method Credits: 3 hours
ME 6370 - Design Optimization Credits: 3 hours
ME 6520 - Mechanics of Composite Materials Credits: 3 hours
ME 6610 - Advanced Finite Elements Credits: 3 hours
ME 5450 - Computational Fluid Dynamics I Credits: 3 hours
ME 6450 - Computational Fluid Dynamics II Credits: 3 hours
ME 6300 - Advanced Fluid Dynamics Credits: 3 hours
ME 6350 - Turbulence Credits: 3 hours
ME 6090 - Combustion Credits: 3 hours
ME 5410 - Continuous System Modeling and Simulation Credits: 3 hours
ME 6330 - Advanced Control Systems Credits: 3 hours
ME 5600 - Engineering Analysis Credits: 3 hours
ME 5620 - Application of Numerical Methods in Engineering Credits: 3 hours

Up to 9 hours of approved elective courses.
ME 5500 - Modern Engineered Materials Credits: 3 hours
ME 5690 - Principles of Fatigue and Fracture Credits: 3 hours
ME 6630 - Structural Vibrations Credits: 3 hours
ME 6500 - Smart Materials Credits: 3 hours
ME 6530 - Fatigue of Engineering Materials Credits: 3 hours
ME 6540 - Composite Materials Credits: 3 hours
ME 6690 - Engineering Fracture Mechanics Credits: 3 hours
ME 5300 - Theoretical and Computational Fluid Mechanics Credits: 3 hours
ME 6590 - Multibody Dynamics Credits: 3 hours
ME 5350 - Applied Spectroscopy Credits: 3 hours

2. A minimum of six hours must be mathematics oriented.

The mathematics-oriented courses may include aerospace and mechanical engineering courses or electives selected from any engineering department in the College of Engineering and Applied Sciences, or in mathematics, computer science, and the physical sciences. Aerospace and mechanical engineering courses satisfying the mathematics requirement include:

ME 5600 - Engineering Analysis Credits: 3 hours
ME 5610 - Finite Element Method Credits: 3 hours
ME 5620 - Application of Numerical Methods in Engineering Credits: 3 hours
ME 6370 - Design Optimization Credits: 3 hours
ME 6610 - Advanced Finite Elements Credits: 3 hours
ME 6330 - Advanced Control Systems Credits: 3 hours

Note: Students who choose to take a class outside the AE approved list of graduate courses must obtain the approval of the AE graduate advisor prior to registering for such class.

3. Up to six hours of project as seen below may be taken as part of the 30 hours of approved courses in the area of aerospace engineering for research conducted under the supervision of a department faculty member.
AE 6970 - Problems in Aerospace Engineering Credits: 1 to 6 hours

<u>Area of Concentration for Master of Science in Aerospace Engineering</u>

Aerospace Structure and Materials
Core Aerospace Engineering Course
AE 5100 - Foundations of Structural Mechanics Credits: 3 hours

Recommended Elective Courses
ME 5610 - Finite Element Method Credits: 3 hours
ME 6370 - Design Optimization Credits: 3 hours
ME 6520 - Mechanics of Composite Materials Credits: 3 hours
ME 6610 - Advanced Finite Elements Credits: 3 hours

Approved Elective Courses
ME 5500 - Modern Engineered Materials Credits: 3 hours
ME 5690 - Principles of Fatigue and Fracture Credits: 3 hours
ME 6330 - Advanced Control Systems Credits: 3 hours
ME 6500 - Smart Materials Credits: 3 hours
ME 6530 - Fatigue of Engineering Materials Credits: 3 hours
ME 6540 - Composite Materials Credits: 3 hours
ME 6690 - Engineering Fracture Mechanics Credits: 3 hours

Aerodynamics and Propulsion
Core Aerospace Engineering Course

AE 5200 - Advanced Aerodynamics Credits: 3 hours

Recommended Elective Courses
AE 5760 - Advanced and Electric Propulsion Systems Credits: 3 hours
AE 6710 - Molecular Gas Dynamics Credits: 3 hours
ME 5710 - Gas Dynamics Credits: 3 hours
ME 5450 - Computational Fluid Dynamics I Credits: 3 hours
ME 6450 - Computational Fluid Dynamics II Credits: 3 hours
ME 6300 - Advanced Fluid Dynamics Credits: 3 hours
ME 6350 - Turbulence Credits: 3 hours
ME 6090 - Combustion Credits: 3 hours

Approved Elective Courses
ME 5300 - Theoretical and Computational Fluid Mechanics Credits: 3 hours

Flight Dynamics and Control
Core Aerospace Engineering Course
AE 5400 - Aerospace Vehicle Dynamics Credits: 3 hours

Recommended Elective Courses
AE 6400 - Atmospheric Flight Dynamics and Control Credits: 3 hours
AE 6410 - Space Flight Dynamics and Control Credits: 3 hours
ME 5410 - Continuous System Modeling and Simulation Credits: 3 hours
ME 6330 - Advanced Control Systems Credits: 3 hours

Approved Elective Courses
ME 6590 - Multibody Dynamics Credits: 3 hours

Multidisciplinary/Emerging Aerospace
Approved Elective Courses
ME 5350 - Applied Spectroscopy Credits: 3 hours

Applied Mathematics
Recommended Elective Courses
ME 5600 - Engineering Analysis Credits: 3 hours
ME 5620 - Application of Numerical Methods in Engineering Credits: 3 hours

Special Topics
AE 5950 - Topics in Aerospace Engineering Credits: 3 hours
AE 6970 - Problems in Aerospace Engineering Credits: 1 to 6 hours
AE 7000 - Master's Thesis Credits: 1 to 6 hours
ME 6950 - Advanced Topics in Mechanical Engineering: Variable Topics Credits: 1 to 4 hours

Master of Science in Aerospace Engineering (Accelerated)
Advisor: Peter A. Gustafson

The Accelerated Graduate Degree Program (AGDP) allows undergraduate students in aerospace engineering an opportunity to complete the requirements for both the bachelor's and master's degrees at an accelerated pace. These undergraduate students may count up to 9 (but not less than 6) credit hours of 5000-level courses taken during their undergraduate studies toward a master's degree in aerospace engineering within 24 months of completing their bachelor's degree in aerospace engineering. These students may choose to pursue a master's degree in aerospace engineering under either the Thesis Option or the Non-Thesis Option.
This program will allow an undergraduate student majoring in Aerospace Engineering to complete an accelerated bachelor's/master's in aerospace engineering by completing either 146 combined graduate/undergraduate credit

hours (if choosing the Thesis Option), or 152 combined graduate/undergraduate credit hours (if choosing the Non-Thesis Option).
The University processes for application, admission, and registration can be found at www.wmich.edu/registrar/students-forms-accelerateddegree .

Application to the AGDP Program

1. A prospective student who meets the eligibility requirements (see Criteria for Admission) must set up a meeting with the MAE undergraduate advisor and the graduate advisor to develop Plans of Work for the bachelor's and master's degree programs.
2. Before admission to an AGDP can be finalized, students must submit the standard application for admission to the Office of Admissions/Graduate Admissions including:
   - an application
   - an application fee
   - a Plan of Graduate Work, signed by the prospective student, the undergraduate advisor and the graduate advisor
3. The Plan of Graduate Work for the master's degree must clearly indicate:
   - the 5000-level courses (a maximum of 9 graduate credit hours) that will be counted for both bachelor's and master's degrees,
   - the graduation date for the master's degree that meets the time limit for the AGDP (i.e. obtaining a master's degree in aerospace engineering within 24 months of completing the bachelor's degree). Any changes to the AGDP Plan of Graduate Work must be submitted in writing and approved by the graduate advisor and graduate dean.

Criteria for Admission to the AGDP

Permission to pursue an AGDP does not guarantee admission to the Graduate College. Admission is contingent on meeting the following eligibility requirements at the time of entering the graduate program:
- Students must have completed a minimum of 80 and a maximum of 96 credit hours in their undergraduate programs, including credits earned from advanced placement.
- Transfer students must have completed a minimum of 30 credit hours as a full-time student at WMU.
- Students must have a minimum accumulated grade point average (GPA) of 3.5/4.0 at WMU.

Requirements for Participation and Graduation

1. Students must complete the bachelor's degree prior to entering the master's program. Students in the AGDP may not elect to by-pass the bachelor's degree.
2. Students will only be allowed to count a maximum of nine 5000-level credits taken during their undergraduate studies toward their master's degree. Students must consult with the aerospace engineering graduate advisor to determine which courses may be applied towards the master's degree. Ordinarily, the selectable courses are those from the non-accelerated aerospace engineering master's degree program.
3. Students must receive a grade of "B" (3.0/4.0) or better in the 5000-level courses taken during their undergraduate studies. Courses with a grade of "CB" or below cannot be counted toward their master's degree.
4. Students must complete the master's degree within 24 months from the completion of the bachelor's degree. If the master's program is not completed within these time limits, none of the 5000-level courses specified in the Plan of Graduate Work and used to meet the requirements of the undergraduate degree can be counted toward the master's degree.

Continuing Eligibility

1. It is the responsibility of the student to recognize his/her eligibility status.
2. A student completing the bachelor's degree requirements with an accumulated GPA of less than 3.25/4.0 is no longer eligible to count the 5000-level credit hours specified in the Plan of Graduate Work toward the master's degree and is automatically terminated from the AGDP.
3. A student who does not follow the approved Plan of Graduate Work may become ineligible to participate in the AGDP.
4. A student who is ineligible to participate in (or withdraws from) the AGDP cannot count any of the courses specified in the Plan of Graduate Work for both bachelor's and master's degrees. These courses, however, may be counted toward the student's bachelor's degree upon the discretion of the undergraduate advisor.

5. A student who becomes ineligible to participate in the AGDP, must be informed by the graduate advisor in writing of his/her ineligibility. A copy of this letter to the student must be sent to the Graduate College.

Withdrawal
A student may withdraw from an approved AGDP at any time by informing the advisor of undergraduate programs and the graduate advisor in writing. A copy of this request to withdraw must be sent to the Graduate College for approval.

Master of Science in Engineering (Mechanical)

Advisor: Muralidhar K. Ghantasala
All advising is done by appointment in the Engineering Advising Office located in room E-102 Floyd Hall (Call 269-276-3270).

Graduates with the Master of Science in Engineering (Mechanical) look forward to career opportunities at higher levels of responsibility. Areas of opportunity include, but are not limited to, mechanical systems and structural dynamics, system design and controls, smart and biomaterials, mechanics of composite materials, experimental stress analysis, fatigue and fracture of engineering materials, vehicle dynamics, experimental and computational fluid dynamics, thermal and power systems, alternate and renewable energy, fuel cells, combustion, noise and vibrations, finite element analysis, and micro and nano-technology. Opportunities for mechanical engineers continue to develop with the rapid expansion of the knowledge base.

Class sequencing and scheduling (in the evening hours) are arranged so that a working engineer can complete the program in three years while maintaining full-time employment.

Admission Requirements
1. Bachelor of Science in Mechanical Engineering from an institution with an ABET/EAC accredited program.
2. Submit results of the general Graduate Record Examination (GRE).

Applicants with degrees in other engineering fields or related disciplines may be considered for admission after they have satisfactorily completed the necessary undergraduate prerequisite courses prescribed by the department's graduate advisor. At the Graduate Advisor’s discretion, these courses can be all or a subset of ME 2320, 2500, 2560, 2570, 2580, 3560, 3650, 4310, 4320, MATH 2720, 3740.

Conditional admission may be granted to a student with a baccalaureate degree and less than the required academic record, or anyone having a baccalaureate degree from a non-accredited college or anyone needing more than three prerequisite courses. A student admitted on non-degree conditional status may establish eligibility for regular admission by completing the specified prerequisite courses, and securing grades of "B" or better in each course in the first nine hours of graduate work.

A student with a baccalaureate degree who wishes to enroll in courses but does not plan to pursue a program leading to a master's degree, or is not eligible for regular admission may enroll in courses for which prerequisite requirements are satisfied with Guest status. If the student later decides to apply for regular admission, no more than nine hours of work taken under Non-Degree status will be considered part of a degree program.

Program Options and Requirements
Students may choose the Thesis Option or the Non-Thesis Option as described below. A specific program of study for each student is determined in conjunction with and subject to approval of the student’s advisor. Following are the course of study requirements for Thesis and Non-Thesis options.

Thesis Option
This option of the Master of Science in Engineering (Mechanical) consists of 30 hours, of which six must be taken as thesis.

1. A minimum of 30 semester hours of credit

Including 18 hours of approved courses in the area of mechanical engineering, six hours of electives, and six hours of: ME 7000 - Master's Thesis Credits: 6 hours

2. A minimum of six hours must be mathematics oriented.
The mathematics-oriented courses may include mechanical engineering courses (e.g., ME 5600, 5610, 5620, 6350, 6370, 6510, and 6610) or electives selected from any engineering department in the College of Engineering and Applied Sciences, or in mathematics, computer science, and the physical sciences. Students who choose to take a class outside the ME approved list of graduate courses must obtain the approval of the ME graduate advisor prior to registering for such classes.

3. Satisfactory completion of six hours of the following course under the guidance of the thesis advisor and committee.
ME 7000 - Master's Thesis Credits: 1 to 6 hours

Non-Thesis Option
This option of the Master of Science in Engineering (Mechanical) consists of thirty-six (36) hours, of which up to six may be taken as project.

1. A minimum of 36 semester hours of credit including 30 hours of approved courses in the area of mechanical engineering plus six hours of electives.

2. A minimum of six hours must be mathematics oriented.
The mathematics-oriented courses may include mechanical engineering courses (e.g., ME 5600, 5610, 5620, 6350, 6370, 6510, and 6610) or electives selected from any engineering department in the College of Engineering and Applied Sciences, or in mathematics, computer science, and the physical sciences. Students who choose to take a class outside the ME approved list of graduate courses must obtain the approval of the ME graduate advisor prior to registering for such classes.

3. Up to six hours of project as shown below may be taken as part of the 30 hours of approved courses in the area of mechanical engineering for research conducted under the supervision of a department faculty member
ME 6970 - Problems in Mechanical Engineering Credits: 1-6 hours

Practical Training
As part of their coursework, Master's students who have had less than 6 months of prior industrial work experience in the U.S. may choose to register in up to 3 credits of ME 5990 in order to pursue practical training off-campus in industrial and/or other settings. To be eligible, students must be registered in the MAE department, must have completed at least 6 credits towards their graduate degree, and must have approval of the Graduate Program Director or Department Chair. Students may choose to register for 1 credit of ME 5990 at a time, up to 3 semesters. These students will be classified as having full-time status for the purpose of loan deferments and insurance eligibility. International students must contact the International Services and Student Affairs Office before requesting departmental approval in order to enroll in ME 5990.

Master of Science in Engineering (Mechanical - Accelerated)

The accelerated master's degree program allows undergraduate students in mechanical engineering an opportunity to complete the requirements for the master's degree at an accelerated pace. Undergraduate students may count up to 12 (but not less than six) credit hours of 5000-level courses taken during their undergraduate studies towards a master's degree in mechanical engineering within 24 months of completing their bachelor's degree in mechanical engineering. Students may choose to pursue a master's degree in mechanical engineering under either the thesis option or the non-thesis option.

This program allows an undergraduate student, majoring in mechanical engineering, to complete an accelerated master's degree in mechanical engineering by completing either 147 combined undergraduate/graduate credit hours (if choosing the thesis option), or 153 combined undergraduate/graduate credit hours (if choosing the non-thesis option).

Criteria for Admission

Permission to pursue the accelerated degree program (AGDP) does not guarantee admission to the Graduate College. Admission is contingent on meeting the following eligibility requirements at the time of entering the graduate program:

1. Students must have completed a minimum of eighty (80) and a maximum of ninety-six (96) credit hours in the undergraduate program, including credits earned from advanced placement.
2. Transfer students must have completed a minimum of 30 credit hours as a full-time student at WMU.
3. Students must have a minimum accumulated grade point average (GPA) of 3.5/4.0 at WMU.

Admission Requirements

All prospective students must read and comply with the requirements outlined for Accelerated graduate degree course approval on the registrar's office website www.wmich.edu/registrar/students-forms-accelerateddegree .

1. A prospective student, who meets the eligibility requirements (see Criteria for Admission), must set up a meeting with the MAE undergraduate advisor and graduate advisor to develop a plan for the bachelor's and master's degree programs.
2. Before admission to the accelerated master's degree program can be finalized, students must complete an undergraduate audit and submit the paper application for admission to the Office of Admissions (in that order).
3. Following successful admission to the AGDP, the student must meet with the graduate advisor to complete the AGDP Course Approval form (found on the registrar's Web page). The form must clearly indicate the 5000-level courses (a maximum of 12 credit hours) that will be counted towards the accelerated master's degree. Any changes to the AGDP Course Approval form must be submitted, in writing, and approved by the graduate advisor.

Requirements for Participation and Graduation

1. Students must complete the bachelor's degree prior to entering the master's program.
2. Students will only be allowed to count a maximum of twelve (12) 5000-level credits taken during their undergraduate studies toward this master's degree.
3. Students must receive a grade of "B" (3.0/4.0) or better in the 5000-level courses taken during their undergraduate studies.
4. No more than twelve (12) hours of work may be counted towards the requirements for both the bachelor's and master's degree.
5. Students must complete the master's degree within 24 months from the completion of the bachelor's degree. If the master's degree is not completed within these time limits, none of the 5000-level courses used for the bachelor's degree may be counted toward the master's degree.
6. In an exceptional case where following the completion of the bachelor's degree, the student is admitted into the mechanical engineering doctoral program, the credits earned as a part of the AGDP program will be applied to student's doctoral coursework (specified in the requirements for completion of a doctoral degree for students admitted with a bachelor's degree).

Continuing Eligibility

1. It is the responsibility of the student to recognize his/her eligibility status.
2. A student completing the bachelor's degree requirements with an accumulated GPA of less than 3.25/4.0 is no longer eligible to count the 5000-level credit hours specified toward the master's degree and is automatically terminated from the accelerated master's degree program.
3. A student who does not follow the program, laid out in the approved AGDP form, may become ineligible to participate in the accelerated degree program.
4. A student who is ineligible to participate in (or withdraws from) the accelerated program may not count any of the 5000-level courses specified in the AGDP form towards a master's degree.
5. A student who becomes ineligible to participate in the accelerated master's degree program must be informed by the graduate advisor, in writing, of his/her ineligibility. A copy of this letter must be sent to the Graduate College.

Withdrawal

A student may, at any time, withdraw from an approved accelerated program by informing the graduate advisor in writing. A copy of this request to withdraw must be sent to the both the Graduate College and the registrar's Office.

Doctor of Philosophy in Mechanical Engineering

Advisor: Muralidhar K. Ghantasala
All advising is done by appointment in the Engineering Advising Office located in room E-102 Floyd Hall (Call 269-276-3270).

The Doctor of Philosophy in Mechanical Engineering is designed to intensify student knowledge and comprehension in the various disciplines of the subject, with emphasis on original research in a chosen area of specialty.

Admission Requirements
In addition to the general admission requirements for a doctoral degree at Western Michigan University, a Bachelor of Science or Master of Science in Mechanical Engineering or a related engineering discipline will be required. Students with a Master of Science in mathematics or in a natural science discipline may also be admitted if they have a Bachelor of Science in Mechanical Engineering or a related engineering discipline. The Bachelor of Science or Master of Science should be from a university recognized and approved by the Graduate Committee of the department. Evidence of scholarship and potential for independent research in mechanical engineering must be presented to the Graduate Committee. The level of achievement in mathematics and science courses, which are prerequisites for success in doctoral studies in engineering, will also be considered when evaluating the application. The applicant must also submit the results of the general Graduate Record Examination, a Statement of Purpose, as well as three recommendation letters. Prior to being admitted, the student must identify a member of the department's graduate faculty who has agreed to advise the student's research.

Program Requirements
The main accomplishment of the Ph.D. student should be an original, high quality research. The program is oriented toward that achievement. The course work and number of credit hours that a student will be required to take depend on the individual qualifications, level of preparation for independent research, and the needs for successful accomplishment of the dissertation.

At least 30 credit hours of coursework *beyond the master's level* must be taken by a Ph.D. student. Of these 30 credits, 15 may consist of a combination ME 7100 - Independent Study (up to six credit hours) and ME 7350 - Graduate Research (up to nine credit hours). In addition, 15 credit hours of dissertation research credit must be taken (ME 7300). At least 12 of the 30 non-research credit hours must be taken from the graduate courses of the Department of Mechanical and Aerospace Engineering.

For those students starting their doctoral studies after the completion of their bachelor's degree, at least 54 credit hours of coursework beyond the bachelor's level must be taken. Of these 54 credits, 15 may consist of a combination ME 7100 - Independent Study (up to six credit hours) and ME 7350 - Graduate Research (up to nine credit hours). In addition, 15 credit hours of dissertation research credit must be taken (ME 7300). Students who choose to discontinue their doctoral studies after completing 30 graduate credits, may be awarded a master's degree. The 54 credit hours of courses must be 5000, 6000 and 7000-level graduate courses. At least 40 0f the 54 hours of coursework included for Ph.D. credit must be MAE department courses.

To ensure adequate preparation for the graduate research subject, enrollment in all courses must be approved by the doctoral advisor. A minimum grade point average of 3.25 is required in the doctoral studies. These graduation requirements complement the general university requirements.

Within the first year of graduate level study at WMU, the student should choose a Doctoral Dissertation Committee consisting of four members of the graduate faculty, including the doctoral advisor and at least one member from outside the MAE department. The doctoral student must acquire (through coursework and/or work experience) and demonstrate in a comprehensive examination competency in his/her research area. A comprehensive exam must then

be taken to evaluate the depth acquired by the student in his/her research area of interest, and to determine the adequacy of preparation toward dissertation research. This exam is administered by the Dissertation Committee.

For students starting with a master's degree, this examination should be conducted before completion of 15 credit hours of coursework. For students starting with a bachelor's degree, this examination should be conducted before completion of 39 credit hours of coursework.

Details of the Ph.D. study process may be obtained from the Department Graduate Advisor or on the web page of the Department of Mechanical and Aerospace Engineering located at wmich.edu/mechanical-aerospace/academics/phd .

Practical Training

As part of their 30 credit hours of course work, doctoral students who have had less than 6 months of prior industrial work experience in the US may choose to register in up to 3 credits of ME 6990 in order to pursue practical training off-campus in industrial and/or other settings. To be eligible, students must be registered in the MAE department, must have completed at least 6 credits toward their doctoral degree, and must have approval of their faculty advisor and Graduate Programs Director or Department Chair. Students may choose to register for 1 credit of ME 6990 at a time, up to 3 semesters. These students will be classified as having full-time status for the purpose of loan deferments and insurance eligibility. International students must contact the International Services and Student Affairs Office before requesting department approval in order to enroll in ME 6990.

College of Fine Arts

www.wmich.edu/finearts

Daniel Guyette
Dean

Scott R. Irelan
Associate Dean

Julie Rickert
Advising Director
(269) 387-4672
julie.rickert@wmich.edu

Academic Units:
Art
Dance
Music
Theatre

Vision

The college will be a national leader in the preparation of artists, practitioners, teachers, and scholars through educational and creative excellence.

The college holds as its core values:

- Teaching through the integration of theory and practice
- Rigorous student/faculty engagement
- Faculty who are practicing artists
- Student engagement with arts professionals
- A diverse, inclusive and collaborative environment
- The intersection of artistic tradition and innovation
- Contributions to, and partnership with, our communities

Mission

The College of Fine Arts fosters, integrates, and promotes the academic, and artistic excellence of its departments and schools.

Art, Gwen Frostic School of

, Director
Main Office: R2110 Richmond Center
Telephone: (269) 387-2436
Fax: (269) 387-2477

Karen Bondarchuk
William Charland
Christina Chin
Cat Crotchett
William Davis
Richard dePeaux
Nicholas Kuder
Adriane Little
Nichole Maury
Ginger Owen
Vince Torano
Patricia Villalobos

The philosophy underlying the Gwen Frostic School of Art's courses and programs is to establish an awareness and understanding of the visual arts to gain a liberal arts education, and likewise, that a liberal education is a necessary part of a professional artist's training. To that end, programs in Art seek to meet the objectives of three different types of students: those who have an interest in simply taking courses in the field for personal enjoyment and growth, those with professional ambitions in the various areas of practice and teaching, and those liberal arts oriented persons who seek a major in the general field of the visual arts.

The various programs offered by the Gwen Frostic School of Art are designed to promote the education of good artists and artists-teachers and to increase the artistic awareness among students in other areas. Extracurricular activities include many exhibitions, lectures by visiting artists, and a student-operated gallery.

The purpose of graduate study in the Gwen Frostic School of Art is to advance: Individual studio and scholarly talents, interests, and philosophies, used creatively both to expand and preserve our cultural heritage; professional studio competence exemplified by a significant body of work; the student's potential to solve contemporary problems in all aspects of the visual arts and to explore and address new questions and issues; professional competence in the dissemination of knowledge, including logical, clear verbal and written presentation of aesthetic ideas in teaching and other contexts; scholarly competence in the organization, evaluation, and interpretation of knowledge.

The Master of Arts in Art Education is designed to address the needs of art educators for advanced preparation in their discipline.

Western Michigan University is an accredited member of the National Association of Schools of Art and Design and subscribes to the recommendations of this organization.

Master of Arts in Art Education

Advisors: Nick Gauthier
2104 Richmond Center

The online Master of Arts in Art Education addresses the need of new and established art educators interested in advanced preparation, research, leadership, and advocacy. The 30-hour program includes 18 credit hours of study in art education and 12 credit hours chosen from a range of complementary disciplines. Designed to be completed in three years of sequential coursework, the individualized curriculum provides opportunities for study in contemporary theory, classroom practice, research methods, and technology, with a focus on application in the student’s own particular setting.

Delivered entirely online, this program is appropriate for are educators in a variety of contexts, including schools, museums, community-based organizations, alternative settings, and unaffiliated scholarship. Program requirements culminate in a personalized research project and graduate thesis.

Admission Requirements

1. An undergraduate degree with a major in art education or its equivalent as deemed appropriate by the admissions committee.
2. Transcript(s) showing all coursework completed prior to application.
3. A statement of intent outlining your educational philosophy and reasons for seeking admission to a graduate program in art education.
4. A current resume.
5. Three letters of recommendation from professional sources.

Program Requirements

Art Education courses (6 courses, 18 hours)
ART 6510 - Art Education Theory Credits: 3 hours
ART 6520 - Recent Topics in Art Education Credits: 3 hours (to be repeated once for a total of 6 credit hours)
ART 6530 - Research in Art Education Credits: 3 hours
ART 7000 - Master's Thesis Credits: 1 to 6 hours (to be repeated once for a total of 6 credit hours)

Elective Courses (4 courses, 12 hours)
Chosen from the following:
ED 6000 - Fundamentals of Measurement and Evaluation in Education Credits: 3 hours
ED 6360 - Advanced Instructional Strategies for Elementary Teachers Credits: 3 hours
ED 6700 - Authority and Autonomy in Schooling Credits: 3 hours
EDLD 6740 - School Community Relations and Cultural Competence Credits: 3 hours
EDT 5030 - Special Topics for Instructional Technology Applications Credits: 1-3 hours
Topics for EDT 5030:
Google Applications in Education Credits: 3 hours or
2nd Life/Virtual Community Credits: 3 hours
EDT 5410 - Foundations of Instructional Technology Credits: 3 hours
(Or previous title EDT 5410 - Telecommunication for Teaching and Learning Credits: 3 hours)
EDT 5420 - Teaching with Technology: Design and Development for Learning Credits: 3 hours
EDT 6440 - Instructional Technology Tools and Development Credits: 3 hours
SOC 4540 - Juvenile Delinquency Credits: 3 hours
SPED 4270 - Learners with Disabilities in Elementary and Middle School Programs Credits: 3 hours
SPED 4290 - Learners with Disabilities in Secondary Education Programs Credits: 3 hours
SPED 6380 - Applications of Behavior Analysis in Special Education Credits: 3 hours

Dance

Megan Slayter, Chair
Main Office: 3107 Dalton Center
Telephone: (269) 387-5830
Fax: (269) 387-5820

Nina Nelson

Music, School of

Bradley Wong, Director

Main Office: 2146 Dalton Center
Telephone: (269) 387-4667
Fax: (269) 387-1113
music-grad@wmich.edu

Christopher Biggs
Scott Boerma
John Campos
Alexander Cannon
Lisa Coons
Martha Councell-Vargas
Jennifer Fiore
Lin Foulk
Gregory Jasperse
David Little
Kenneth Prewitt
Carl Ratner
Edward Roth
David S. Smith
Kenneth H. Smith
Robert White

Master of Arts in Music

The Master of Arts in Music degree is a graduate research degree which culminates with a written thesis and a public presentation (lecture or lecture/recital). Possible areas of focus for the thesis include (but are not limited to) music history, music theory, ethnomusicology, historical performance practice, music technology, and interdisciplinary subjects relating to music with other fields. The program is intended for students with a strong interest in scholarly research and should not be considered a substitute for a Master of Music in Performance degree. The benefits include a stronger preparation for graduate studies after Western and a more diverse portfolio for future teaching positions. The M.A. in Music degree is primarily intended as part of a 5 year accelerated degree program combined with a Bachelor of Music degree, but it may be completed as a stand-alone 2 year graduate degree.

Admission requirements for the M.A. in Music Program:
1. Successful completion of Bachelor of Music degree (or Bachelor of Arts in Music).
2. A minimum undergraduate GPA of 3.00.
3. A minimum GPA of 3.25 for all music theory, history, and aural skills courses, with no grade less than a “C” at the 1000-level and no grade less than a “B” at the 2000-level or above.
4. A portfolio of three scholarly papers which demonstrate the ability to conduct research and write at a level appropriate for a Master’s Thesis.

General degree requirements for M.A. in Music:
MUS 6100 – Research Methods Credits: 3 hours
Music History – 2 courses, at least 1 at the 6000-level Credits 4 – 6 hours
Music Theory – 2 courses, at least 1 at the 6000-level Credits 4 – 6 hours
Music Ensemble – 5000- level Credits: 2 hours
Professional Electives – must be approved for admission to candidacy Credits: 7 – 9 hours
MUS 7000 – Master’s Thesis, see options below Credits: 6 hours

Professional Electives:

The Professional Electives are expected to support the thesis topic and should generally include at least two additional 6000-level courses in music history and/or theory beyond the general requirement above. Other types of graduate-level music courses and even courses from other departments are possible if they can be justified as relevant to the thesis topic. Reading ability in at least one foreign language may also be required depending on the nature of the subject. All electives must be approved by the School of Music faculty before they can be applied toward the degree.

Thesis Options:
All thesis options involve a written document and some kind of public presentation. The thesis committee will consist of an advisor, who serves as chair of the committee, and two other committee members. The thesis defense will include an oral comprehensive exam.

A) Written Thesis + Lecture
This thesis option has two parts. Part I is a substantial written thesis dealing with some historical, theoretical, or other scholarly aspect of music, written under the guidance of a faculty member. Part II is a public lecture presenting some portion of the written thesis.

B) Composition + Thesis Essay
This thesis option has two parts. Part I is an extended composition for instrumental, vocal, and/or computer-implemented media, approved by the department, and written under the guidance of a faculty member. Part II is a significant essay dealing with some historical, theoretical, or analytical aspect of music related to the composition. Part I or Part II (or both) must be presented in a public recital or lecture.

Candidates selecting this thesis option must be accepted by the composition faculty into MUS 6620 – Seminar in Music Composition and are subject to additional composition area requirements. This option is not regarded as equivalent to a Master of Music in Composition degree; it is a research degree with a composition component as part of the scholarship.

C) Lecture/Recital + Thesis Essay
This thesis option has two parts. Part I is a full-length lecture/recital with accompanying program notes. Part II is a significant essay dealing with some historical, theoretical, or analytical aspect of music, related to the recital.

Candidates selecting this option must be accepted by the studio area faculty into MUS 6000 – Applied Music and are subject to additional studio area requirements. This option is not regarded as equivalent to a Master of Music in Performance degree; it is a research degree with a performance component as part of the scholarship.

D) Creative Project + Thesis Essay
This thesis option has two parts. Part I is a substantial creative project (e.g., multi-media project, computer program, CD recording, or website) approved by the department, and written under the guidance of a faculty member. Part II is a significant essay dealing with some historical, theoretical or analytical aspect of music related to the project. Part I or Part II (or both) must be presented in a public lecture

Master of Arts in Music (Accelerated)

This is an accelerated graduate degree program (AGDP) which combines a Bachelor of Music degree (or a Bachelor of Arts in Music) with a Master of Arts in Music. To begin the program, qualified undergraduate music students can be admitted into the accelerated degree program and take approved graduate-level coursework in history and theory. These courses count as advanced placement toward the M.A. degree and can be used to substitute for theory/history and professional music elective requirements in the B.M. The university limits the total number of graduate credits used in the AGDP to twelve (12) and restricts enrollment to undergraduates of senior standing (i.e., 88 total credits). School of Music policy does not restrict AGDP students to only one calendar year between initial enrollment in the AGDP and completion of the baccalaureate degree. In addition, undergraduates admitted to dual enrollment status with the Graduate College, may take additional graduate-level courses for graduate credit only (i.e., counting toward the M.A., but not toward the B.M.). The student can apply for admission into the master's program following completion of the bachelor's degree, and complete the remaining graduate coursework in their fifth year.

Admission Requirements for AGDP Status:

Applications to the accelerated degree program may be submitted by students meeting the following requirements:

1. A minimum GPA of 3.0 based on at least 30 undergraduate credit hours earned at Western Michigan University.
2. A minimum GPA of 3.25 in core music theory, history, and aural skills courses completed at the time of application, with no grade less than a “C” at the 1000-level and no grade less than a “B” at the 2000-level.
3. A Personal Statement in which the student discusses their reasons for choosing the program and their primary area of interest (e.g., history, theory, etc.). They should also outline career goals, and identify those skills and knowledge areas they feel must develop in order to achieve those goals.

Departmental application must be submitted to the chair of the Academic Area. The deadline is February 15 to be eligible to enroll in graduate courses in the following fall semester; October 15 to be eligible to enroll in graduate courses in the following spring semester. Applicants who are in their final semester of completing the core may apply for provisional admission pending successful completion in accordance with requirement 2 above.

After departmental approval students must apply online through the Office of Admissions-graduate admissions to the Music Accelerated Graduate Degree Program. After university admission, the student's record will indicate the AGDP status. Please note that acceptance by the university does not guarantee departmental approval.

Continuation of AGDP Status:

Students admitted to AGDP status can continue to enroll in approved graduate-level courses provided that they continue to meet the following requirements:

1. A minimum undergraduate GPA of 3.0 overall (music and non-music) courses.
2. A minimum GPA of 3.25 for all core music theory, history, and aural skills, with no grade less than a “C” at the1000-level and no grade less than a “B” at the 2000-level.
3. Completion of any stated prerequisites for the specific courses.
4. No grade less than a “B” earned for all graduate-level courses to be applied to the master’s degree.

Eligibility will be verified by WMU transcripts following each semester.

Dual-Enrollment Admission:

A senior may also apply to admissions for dual-enrollment admission if they meet the following requirements:

1. A minimum GPA of 3.0 or better for the two years prior to admission date.
2. No more than 15 credit hours remaining for completion of the bachelor’s degree.

Once granted dual-enrollment status, the student may enroll in approved graduate-level coursework which would apply toward the master’s degree only. No graduate credit earned in this way may be used to meet undergraduate requirements.

Application to Candidacy in the M.A. in Music Program:

The following are the application requirements for the final year of the master’s degree:

1. Successful completion of the Bachelor of Music degree (or Bachelor of Arts in Music).
2. A minimum undergraduate GPA of 3.0.
3. A minimum of 12 graduate credit hours in music, including MUS 6100 (or equivalent), with no grade less than a “B”.
4. A portfolio of three scholarly papers (from previous coursework) which demonstrate the ability to conduct research and write at a level appropriate for a master’s thesis.

5. A master's thesis proposal which discusses the thesis topic and outlines the coursework completed to date and the remaining courses to be taken to prepare for the thesis and complete the degree.
6. A thesis advisor's signature.

Applications must be submitted to the chair of the Academic Area by February 15 of the senior year. It is recommended that a student seek out a thesis advisor in the fall of the senior year to ensure adequate time to prepare the proposal.

Master of Music

Advisors: David Loberg Code (music-grad@wmich.edu),
Room 2144, Dalton Center
Coordinator of Graduate Studies

Edward A. Roth (edward.roth@wmich.edu)
Room 2307, Dalton Center
Graduate Advisor: Music Therapy

The Master of Music is designed to enhance the student's teaching, performing, research, and creative abilities in music. The School of Music offers course work leading to a Master of Music degree in five different areas of concentration: Composition, Conducting, Music Education, Music Therapy, and Performance. Western's School of Music is accredited by the National Association of Schools of Music and all areas of concentration carry curriculum approval from that accrediting association. The Music Therapy program is approved by the American Music Therapy Association.

Admission Requirements
A Bachelor of Music degree, or its equivalent, including 60 semester hours of acceptable work in music, is required for admission. Students are admitted to graduate study in music on the basis of transcripts and Entrance Examinations. Exceptions to admission requirements may be granted if competency can be demonstrated through Entrance Examinations.

Entrance Examinations are administered prior to entry to the graduate music program. Areas of examination may include performance (i.e., auditions), music history/literature, music theory, functional piano, conducting (including aural skills), and portfolio reviews. The areas in which the student will be tested are determined by the choice of area of concentration.

Program Requirements
The graduate advisor works closely with each student in planning and implementing a degree program that will accommodate the student's professional needs and interests. Using the results of the Entrance Examinations and a review of the first 6-10 semester hours of course work, the graduate advisor is able to provide information to the student regarding probable success in their program, and any time limitations that may apply. The program of study in each of the five degree paths are as follows:

Composition (Minimum of 30 hours)

Admission Requirements/Procedures
Applicants should submit a composition portfolio for review by the composition faculty. This should include three to four original works involving sound that are representative of the student's creative output and demonstrate his/her ability to compose for a variety of instruments and/or media. Applicants should submit scores and recordings if available.

Detailed instructions for submissions are available at http://www.wmich.edu/composition under the Graduate Studies link. Students must also complete the Entrance Examinations in music theory and music history/literature before the end of the first semester of study.

Major Concentration
1. Required courses (12 hours)
MUS 6100 - Introduction to Research in Music Credits: 3 hours
MUS 6620 - Seminar in Composition Credits: 6 hours
(minimum of 3 semesters, 6 hours total needed)
MUS 7000 - Master's Thesis Credits: 6 hours
(minimum 6 hours total) Including oral exam.

2. Cognate music studies (Credits 8-12 hours)
Applied music, history/literature, musicology, theory, jazz studies. Must include at least one 6000-level course.

3. Electives to make a total of at least 30 semester hours. Must include a 6000-level music theory and a 6000-level music history course, unless already required in the program

Conducting (Minimum of 30 hours)

Admission Requirements/Procedures
1. Bachelor's degree in music or its equivalent including sixty (60) semester hours of acceptable work in music.

2. Two years of conducting experience in public school or equivalent experience recommended.

3. A pre-screening video demonstrating the applicant's conducting skill must be received on or before February 1. Applicants who pass this initial screening will be invited for a conducting audition prior to March 15.

4. A live audition will be administered on the Western Michigan University campus by three full-time members of the conducting faculty, with one being outside the applicant's conducting area. Applicants will a) conduct an appropriate University ensemble on a work or on works to be selected in consultation with the appropriate conducting faculty member; b) demonstrate aural perception and score reading skills; and c) Choral applicants must demonstrate keyboard competency, singing proficiency, and diction proficiency (English, French, Italian and German).

~ Applicants will be informed of their audition results within ten (10) days of their audition date. Applicants must be accepted to the conducting program prior to their first semester of enrollment.

5. The Entrance Examinations in music history/literature and theory must be completed prior to the applicant's first semester of enrollment. Applicants must achieve a passing score in each area of the examination. Remediation may be prescribed as a result of deficiencies in any of the audition/Entrance Examination areas. Undergraduate courses prescribed to remedy deficiencies will not count toward degree requirements.

Concentration Requirements
1. Core Requirements:
MUS 6100 - Introduction to Research in Music Credits: 3 hours
MUS 6640 - Form in Music Credits: 3 hours
MUS 6700 - Seminar in Musicology Credits: 3 hours
or
MUS 6790 – Composers Credits: 3 hours
MUS 6900 - Graduate Recital Credits: 2 hours Including oral exam.

2. Area Requirements:
MUS 5000 - Applied Music Credits: 1 to 2 hours, Credits: 4 hours needed over two semesters
MUS 5300 - Advanced Choral Conducting Credits: 2 hours (for instrumental conductors only)
or
MUS 5310 - Advanced Instrumental Conducting Credits: 2 hours (for choral conductors only)
MUS 5670 - Orchestration Credits: 2 hours
MUS 5810 - Choral Music Literature Credits: 2 hours
or

MUS 5820 - Wind Music Literature Credits: 2 hours
MUS 6000 - Applied Music Credits: 1 to 4 hours, Credits: 4 hours needed over two semesters
MUS 6070 - Conducting Master Class Credits: 1 hour, Credits: 2 hours needed over two semesters

3. Cognate:
Choose from either:

History/Literature Cognate:
MUS 6700 - Seminar in Musicology Credits: 3 hours (already required above)
or
MUS 6790 - Composers Credits: 3 hours (already required above)
MUS 5810 - Choral Music Literature Credits: 2 hours (already required above)
or
MUS 5820 - Wind Music Literature Credits: 2 hours (already required above)
Additional 5000- or 6000-level history elective Credits: 2 to 3 hours

OR

Music Theory Cognate:
MUS 6640 - Form in Music Credits: 3 hours (already required above)
MUS 5670 – Orchestration Credits: 2 hours (already required above)
Additional 5000- or 6000-level history elective Credits: 2 to 3 hours

(Additional cognates are possible and may be added above and beyond the two listed above.)

Music Education (Minimum of 30 hours)

The Master of Music in Music Education is currently offered only through the 4 Summer Music Education Program.

Admission Requirements/Procedures
A Bachelor of Music degree, or its equivalent, with a major in music education, and a teaching certificate are required for admission. Students must also complete the Entrance Examinations in music theory and music history/literature before the end of the first semester of study.

Concentration Requirements
1. Required courses:
MUS 6110 - Introduction to Empirical Research in Music Credits: 3 hours
MUS 6420 - Philosophy of Music Education Credits: 2 hours
MUS 6500 - Seminar in Music Education Credits: 2 hours
And Either:
Culminating option (choose a, b, or c - Every student is required to register for one of these culminating projects, each of which includes an oral exam. For students anticipating doctoral studies, a thesis is strongly recommended.)

a) MUS 6810 - Research in Musical Behavior Credits: 2 hours
or
MUS 6910 - Special Project in Music Education Credits: 2 hours
b) MUS 7000 - Master's Thesis Credits: 6 hours
(minimum 6 hours total)
c) eight (8) hours of pre-approved graduate courses, including written comprehensive exam.

2. Electives in music education (Credits 5-8 hours)

3. Cognate music studies (Credits 8-10 hours)
Theory, history/literature.

4. Electives to make a total of 30-36 semester hours. Must include a 6000-level music theory and a 6000-level music history course, unless already required in the program.

Music Therapy (Minimum of 30 hours)

Admission Requirements/Procedures
A Bachelor of Music degree or its equivalent (60 hours of music courses) and a major in music therapy are required for admission. Applicants must submit three letters of recommendation. Students who have a Bachelor of Music degree, but do not have a major in music therapy, may complete the required undergraduate courses, including the six-month internship, for Board Certification while the graduate program is in progress. This undergraduate credit, however, will not apply to the graduate degree. Undergraduate degree equivalency requirements may be obtained from the Director of Music Therapy in the School of Music.

Upon entrance to the program, the student will take Entrance Examinations in theory, history/literature, and functional piano. Information derived from these examinations plus that derived from student's transcripts and initial interviews will be used to determine the program of study.

Concentration Requirements
1. Required courses:
MUS 6110 - Introduction to Empirical Research in Music Credits: 3 hours
MUS 6800 - Seminar in Music Therapy Credits: 2 hours
MUS 6810 - Research in Musical Behavior Credits: 2 hours
MUS 7000 - Master's Thesis Credits: 6 hours
(minimum 6 hours total)
The student must have completed the six-month internship required for Board Certification prior to enrolling in MUS 7000, Master's Thesis, and MUS 7120, Professional Field Experience.)
MUS 7120 - Professional Field Experience Credits: 2-12 hours (Credits: 2 – 4 hours needed)

2. Elective music courses (Credits: 6 – 9 hours).

3. Non-music electives (Credits: 6 - 9 hours)
Electives may be selected from one or more of the following departments and including at least one course in statistics: Alcohol and Drug Addiction, Anthropology, Counselor Education and Counseling Psychology, Evaluation, Family and Consumer Sciences, Measurement and Research, Occupational Therapy, Psychology, Sociology, Special Education, Speech Pathology and Audiology, Education and Professional Development, Blindness and Low Vision Studies, and Holistic Health.

Performance (Minimum of 30 hours)

Admission Requirements/Procedures
An audition for the performance faculty will determine if the student will be permitted to pursue this major area of concentration. Contact the appropriate faculty for specific audition requirements. Sight-reading may be requested. Vocal majors must demonstrate a proficiency in French, German, and Italian diction. Deficiency course work will not apply toward the degree. Students must also complete the Entrance Examinations in music theory and music history/literature before the end of the first semester of study.

Concentration Requirements
1. Required courses:
MUS 6000 - Applied Music Credits: 1-4 hours
(minimum 8 hours total)
MUS 6100 - Introduction to Research in Music Credits: 3 hours
MUS 6900 - Graduate Recital Credits: 2 hours Including oral exam.

2. Cognate music studies (Credits 8-12 hours)

Composition, conducting, history/literature, musicology, theory, jazz studies. Must contain at least one 6000-level course.

3. Ensemble requirements (Credits 2-6 hours)
A minimum of two (2) credits of chamber ensembles and two (2) credits of conducted ensembles. (Keyboard majors are required to enroll in a minimum of two (2) credits of chamber ensembles.) A maximum of six (6) credits of ensembles may be applied toward the Performance degree requirements.

4. Electives to make a total of at least 30 semester hours. Must include a 6000-level music theory and a 6000-level music history course, unless already required in the program.

Certificate Program in Music Performance
The Certificate Program in Music Performance is a highly selective, non-degree graduate program for the specialized training of the gifted and accomplished performer in preparation for competitions, auditions and the development of a performance career. The program of study includes private instruction, solo performance, experience in both large ensembles and chamber music, musicianship, and entrepreneurial workshops. It may include non-performance music courses.

Admission Requirements
To be accepted into the Certificate Program in Music Performance an applicant must have earned a bachelor's degree (or equivalent) from an accredited institution, and must have an overall grade point average of at least 3.0 in the last two years of undergraduate work.

Applicants must present an audition demonstrating an exceptional level of performance ability. Audition requirements are determined by the individual studio.

A live audition on Western Michigan University's campus is required for unconditional acceptance into the program; however, a recent high-quality video recording may be submitted for conditional acceptance. A student admitted conditionally must perform a live audition before the end of the first semester of study in order to continue in the program.

The completion of Graduate Program Reference forms by three individuals.

Applicants must submit a Graduate Admissions Application through the Office of Admissions.

International students must apply through International Admissions and Services.

Program of Study
MUS 6000 - Applied Music Credits: 1 to 4 hours
Credits: 6 hours needed
MUS 6900 - Graduate Recital Credits: 2 hours
Credits: 4 hours needed (two recitals)

Major Ensembles (Credits 2 hours)
MUS 5100 - Symphonic Band Credits: 1 hour
MUS 5110 - University Orchestra Credits: 1 hour
MUS 5120 - University Chorale Credits: 1 hour
MUS 5130 - Jazz Orchestra Credits: 1 hour

Chamber/Collaborative Ensembles (Credits 2 hours)
MUS 5140 - Instrumental Chamber Music Credits: 1 hour
MUS 5150 - Advanced Jazz Combo Credits: 1 hour
MUS 6140 - Chamber Music Ensemble Credits: 1 hour
MUS 6170 - Opera Workshop Credits: 2 hours

Music Electives (Credits 2 hours)
5000- or 6000-level pending prerequisites and advisor approval.

Additional Requirements

1. Certificate students must be in residence for a minimum of two semesters.
2. The program is designed to be completed in one year; the maximum amount of time allowed by Western Michigan University for the completion of any graduate certificate program is six years.
3. Students wishing to take graduate-level courses in theory and/or history must establish eligibility by passing the Graduate Entrance Examination in those areas, or successfully completing the appropriate review courses.
4. Undergraduate courses may be taken but will not count toward the required 16 hours of graduate credit.
5. No transfer credits from other institutions are allowed.

Theatre

Joan Herrington, Chair
Main Office: 1105 Gilmore Theatre Complex
Telephone: (269) 387-3224
Fax: (269) 387-3222

Lofton Durham

College of Health and Human Services

Earlie Washington
Dean

Ann Tyler
Associate Dean

Nancy Cretsinger
Director of Academic and Student Services

Academic Units:
College of Health and Human Services
    Evaluation
    Interdisciplinary Health Sciences
Blindness and Low Vision Studies
Bronson School of Nursing
Interdisciplinary Health Programs, School of
    Gerontology
    Health Informatics and Information Management
    Integrative Holistic Health and Wellness
    Interdisciplinary Health Services
Occupational Therapy
Physician Assistant
    Alcohol and Drug Abuse
    Clinical Trials Administration
Social Work
Speech, Language and Hearing Sciences

Blindness and Low Vision Studies

James Leja, Chair
Main Office: 4464 CHHS Bldg.
Telephone: (269) 387-3455
Fax: (269) 387-3567
URL: www.wmich.edu/visionstudies/

Dawn Anderson
Elyse Connors
Dae Kim
Helen Lee
Robert Wall Emerson
Jennipher Wiebold

The Department of Blindness and Low Vision Studies offers four master's degree programs (the master's degree program in Teaching Children Who Are Visually Impaired is taught in the department but officially offered by Special Education and Literacy Studies). The programs in Orientation and Mobility for Adults, Vision Rehabilitation Therapy, orientation and Mobility for Children, and Teaching Children Who Are Visually Impaired are approved by the Association for Education and Rehabilitation of the Blind and Visually Impaired. The Council on Rehabilitation Education accredits the program in Rehabilitation Counseling.

It is our vision to strengthen our leadership positions in pre-service instruction and research in the field of visual impairment to enhance the seamless integration of individuals with visual impairments into their desired roles in society and to facilitate their socio-economic and vocational equality.

The Mission of the Western Michigan University Department of Blindness and Low Vision Studies is to offer instruction, research, and service in an effort to prepare professionals to serve persons with visual impairments. We are dedicated to the utilization of best practices, to the responsible use of human and economic resources, to the advancement of people with disabilities in society, and to playing a significant global role.

We are committed to excellence in pre-service personnel preparation in order to facilitate dignity, independence, and respect among individuals who are blind or have low vision. To that end, we base our academic programs on the following assumptions:

- Support of self-worth and self-determination are essential in rehabilitation and education.
- Individualized assessment and instruction are essential for success in rehabilitation and education.
- Individuals with impairments have the potential to achieve the same quality of life as all individuals.
- Specialized training among blindness and low vision professionals is superior to generalized training.

The programs are designed to prepare individuals for entry-level positions in Orientation and Mobility (specializing in adults or children), Vision Rehabilitation Therapy, Rehabilitation Counseling/Teaching, and Teaching Children with Visual Impairments/Orientation and Mobility in public and private blindness agencies, in schools, and in rehabilitation facilities. Each of the Orientation and Mobility and the Vision Rehabilitation Therapy programs require 39 semester hours of course work. The Rehabilitation Counseling/Teaching program requires 76 semester hours of course work. The program in Teaching Children Who Are Visually Impaired requires 44 semester hours of coursework and the program in Orientation and Mobility for Children requires 37 semester hours. Curriculum guides for the four programs are available from the department office.

The professional preparation for students entering any of the four degree programs described below (plus the TCVI program officially offered in Special Education and Literacy Studies) includes academic study on campus, simulated disability experiences, a research project, field practice or comprehensive examination, and an off-campus supervised clinical field experience. Federal grants from the United States Department of Education and Rehabilitation Services Administration may be available to help provide students enrolled in most masters' programs with tuition assistance and stipend awards. In addition, scholarships are available on a competitive basis.

Admission Requirements and Procedures

Admission to a Master of Arts program in the department is based upon undergraduate academic record, appropriate goals, related experience, interpersonal and communication skills, emotional maturity, and functional independence. The following link will take you to the Blindness and Low Vision Studies Department Application available online at www.wmich.edu/visionstudies/academics/apply. This page provides links to the programs offered through the department and program admissions requirements. The "Start or Continue your Application" button appears at the end of each program page. For specific questions or assistance completing the application, please contact: Office of Admissions at (269) 387-2000 - for domestic application changes or International Admissions at (269) 387-5865 for international application changes. . The rehabilitation counseling and rehabilitation counseling/teaching programs are offered jointly between the Department of Blindness and Low Vision Studies and The Department of Counselor Education and Counseling Psychology. The following link will take you to the rehabilitation counseling program application: wmich.edu/grad/admissions/single.php?id=29.

Not every applicant who meets minimum admission requirements can be admitted; the department reserves discretion in admission of the most highly qualified applicants.

The department strives to create an atmosphere conducive to the concerns of diverse populations, and to integrate these concerns into programs and course offerings.

Distance Education

The department offers the opportunity for pursuing some of its degrees via distance education format. Currently, the programs in Teaching Children with Visual Impairments, Orientation and Mobility for Adults, Orientation and Mobility for Children, and Vision Rehabilitation Therapy are available. The distance education program is designed for individuals who are currently working in the field (or related field) seeking an advanced degree. Most didactic lecture-based courses are presented in an online format, while the experiential skills courses are compressed into one or two summertime sessions requiring students to undertake coursework on WMU's main campus. All distance education offerings require off-campus clinical field experience. Contact the respective program advisor for details.

Master of Arts in Orientation and Mobility

Advisor: Dae Shik Kim

The 39 hour Orientation and Mobility (OMOM) degree program prepares specialists who teach adults who have blindness or low vision to travel independently, safely, and efficiently in their homes and communities.

Required courses for the OMOM program are:

BLS 5770 - Services for Persons Who Are Blind or Have Other Disabilities Credits: 1 to 2 hours
Credits: 1 hour needed
BLS 5880 - Psychosocial Aspects of Disability Credits: 2 hours
BLS 5890 - Medical and Functional Aspects of Disability Credits: 2 hours
BLS 5900 - Physiology and Function of the Eye Credits: 2 hours
BLS 5915 - Braille for Orientation and Mobility Specialists Credits: 1 hour
BLS 5920 - Orientation and Mobility with Children Credits: 3 hours
BLS 5950 - Introduction to Orientation and Mobility Credits: 2 to 4 hours
Credits: 4 hours needed
BLS 5960 - Electronic Devices Credits: 1 hour
BLS 5970 - Principles Low Vision Credits: 2 hours
BLS 6010 - Small “N” Research: Design and Analysis Credits: 3 hours
BLS 6020 - Gerontology in Orientation and Mobility and Rehabilitation Teaching Credits: 2 hours
BLS 6040 - Issues in Travel Credits: 2 hours
BLS 6050 - Practice in Low Vision Credits: 1 hour
BLS 6100 - Assisted Research Credits: 1 to 6 hours
Credits: 2 hours needed
BLS 6940 - Principles of Orientation and Mobility Credits: 3 hours
BLS 6950 - Practicum in Orientation and Mobility Credits: 1 to 3 hours
Credits: 2 hours needed
BLS 7120 - Professional Field Experience Credits: 2 to 12 hours
Credits: 6 hours needed

Master of Arts in Orientation and Mobility for Children
Advisor: Dawn Anderson

The 37 hour Orientation and Mobility for Children (OMCM) degree program prepares Orientation and Mobility (O&M) specialists to work with children. This program includes instruction in the O&M curriculum with an emphasis in preparing children, both with and without additional disabilities, to move safely and independently within a variety of environments such as their home, school, and local community. In addition, this degree provides focus on areas such as body image, sensory-motor skills, concept development, cortical visual impairment, and how to effectively work in a school setting. Graduates are eligible to become certified Orientation and Mobility Specialists (COMS). Students may choose to combine this degree program with preparation as a teacher of children with visual impairments to attain dual competency.

Required courses for the OMCM program are:
BLS 5900 - Physiology and Function of the Eye Credits: 2 hours
BLS 5905 - Physiology and Performance in Blind Children Credits: 2 hours
BLS 5915 - Braille for Orientation and Mobility Specialists Credits: 1 hour
BLS 5920 - Orientation and Mobility with Children Credits: 3 hours
BLS 5945 - Itinerancy and Effective School Collaboration Credits: 2 hours
BLS 5950 - Introduction to Orientation and Mobility Credits: 2 to 4 hours
Credits: 4 hours needed
BLS 5960 - Electronic Devices Credits: 1 hour
BLS 5970 – Principles of Low Vision Credits: 2 hours
BLS 6010 - Small "N" Research: Design and Analysis Credits: 3 hours
BLS 6040 - Issues in Travel Credits: 2 hours
BLS 6050 - Practice in Low Vision Credits: 1 hour
BLS 6060 - Adaptive Sports Activities for Visually Impaired Children Credits: 1 hour
BLS 6100 - Assisted Research Credits: 1-6 hours
Credits: 2 hours needed
BLS 6940 - Principles of Orientation and Mobility Credits: 3 hours
BLS 6950 - Practicum in Orientation and Mobility Credits: 1 to 3 hours
Credits: 2 hours needed
BLS 7120 - Professional Field Experience Credits: 2 to 12 hours
Credits: 6 hours needed

Master of Arts in Vision Rehabilitation Therapy
Advisors: Helen Lee, Elyse Connors

The 39 hour Vision Rehabilitation Therapy (VRTM) degree program prepares students to provide instruction to individuals who have blindness or low vision in skills for employment and independent living. Instruction is provided in adaptive communications, visual skills training, low vision technologies, assistive as well as mainstream computer technologies, personal management, home management, and leisure time activities.

Master of Arts in Rehabilitation Counseling/Teaching
Advisor: Jennipher Wiebold

The Rehabilitation Counseling (CERM) and Rehabilitation Counseling/Teaching programs (RCTM) are jointly administered by the Department of Blindness and Low Vision Studies and the Department of Counselor Education and Counseling Psychology. Please submit application for the Rehabilitation Counseling (Counselor Education: Rehabilitation Counseling) and Rehabilitation Counseling/Teaching Counselor Education: Rehabilitation Teaching) programs through the Department of Counselor Education and Counseling Psychology in APPLY NOW.

Rehabilitation Counseling (CERM)
The Rehabilitation Counseling (CERM) stand along degree option is a 53 credit hour program. Graduates are prepared for employment in public and private rehabilitation settings serving persons with disabilities. As rehabilitation counselors, graduates assist clients/consumers with adjustment to disability counseling; independent living skills training; career development counseling; vocational counseling and skills acquisition; and, job placement, modification and retention services. CERM graduates receive a single Master of Arts degree in Counselor Education: Rehabilitation Counseling.

Rehabilitation Counseling/Teaching (RCTM)
The 76 credit hours Rehabilitation Counseling/Teaching (RCTM) degree program option prepares rehabilitation counselors that are specialized in blindness and low vision. RCT's provide a full range of vocational rehabilitation counseling services that assist clients/consumers with adjustment to disability counseling; independent living skills training; career development counseling; vocational counseling and skills acquisition; and, job placement, modification and retention services. Graduates are prepared for employment in public and private setting serving persons with blindness or low vision that provides both rehabilitation counseling and vision rehabilitation therapy services. Vision rehabilitation therapy services serve people with blindness and low vision by providing instruction in the following skills for employment and independent living, including communications, adapted computer technology, personal management, home management, minor household repairs, and leisure time activities. Rehabilitation Counseling/Teaching graduates receive two Master of Arts degrees (M.A. Counselor Education: Rehabilitation Counseling and M.A. Vision Rehabilitation Therapy).

Required Courses
The 76 credit hours Rehabilitation Counseling/Teaching (RCTM) program requires the satisfactory completion of the following:

BLS 5770 - Services for Persons Who Are Blind or Have Other Disabilities Credits: 1 to 2 hours
Credits: 2 hours required
BLS 5840 - Computer Technology in Rehabilitation Credits: 3 hours
BLS 5860 - Job Development and Placement Credits: 3 hours
BLS 5880 - Psychosocial Aspects of Disability Credits: 2 hours
BLS 5890 - Medical and Functional Aspects of Disability Credits: 2 hours
BLS 5900 - Physiology and Function of the Eye Credits: 2 hours
BLS 5910 - Braille and Other Tactual Communication Systems Credits: 3 hours
BLS 5930 - Methods of Teaching Adaptive Communications Credits: 2 hours
BLS 5970 – Principles of Low Vision Credits: 2 hours
BLS 6010 - Small "N" Research: Design and Analysis Credits: 3 hours
BLS 6020 - Gerontology in Orientation and Mobility and Rehabilitation Teaching Credits: 2 hours
BLS 6050 - Practice in Low Vision Credits: 1 hour
BLS 6100 - Assisted Research Credits: 1 to 6 hours
Credits: 2 hours required
BLS 6360 - Teaching for Independent Living Credits: 4 hours
BLS 6640 - Principles of Rehabilitation Teaching Credits: 3 hours
BLS 6910 - Practicum in Rehabilitation Teaching Credits: 1 to 2 hours
Credits: 2 hours required
BLS 7120 - Professional Field Experience Credits: 2 to 12 hours
Credits: 2 hours required
CECP 5200 - Foundations of Rehabilitation Counseling Credits: 3 hours
CECP 6020 - Group Dynamics and Procedures Credits: 3 hours
CECP 6030 - Tests and Measurement Credits: 3 hours
CECP 6040 - Counseling Techniques Credits: 3 hours
CECP 6050 - Professional Issues and Ethics Credits: 3 hours
CECP 6070 - Multicultural Counseling and Psychology Credits: 3 hours
CECP 6080 - Counseling and Life Span Development Credits: 3 hours
CECP 6100 - Career Development: Theory and Practice Credits: 3 hours
CECP 6110 - Theories of Counseling Credits: 3 hours
CECP 6120 - Counseling Practicum Credits: 4 hours

CECP 6130 - Field Practicum Credits: 1 to 6 hours
Credits: 2 hours required
CECP 6220 - Psychoeducational Consultation Credits: 3 hours

Practicum
The Rehabilitation Counseling/Teaching program includes two community based clinical practicum experiences (BLS 6910, CECP 6120) and two 600 hour supervised internships (BLS 7120, CECP 6130).

Accreditation
The Rehabilitation Counseling (CERM) program is accredited by the Council on Rehabilitation Education (CORE). The Rehabilitation Counseling/Teaching (RCTM) program is accredited by both the Council on Rehabilitation Education and the Association for the Education and Rehabilitation of the Blind and Visually Impaired (AER). Graduates of the rehabilitation counseling and rehabilitation counseling/teaching programs are eligible to become certified rehabilitation counselors through the Commission on Rehabilitation Counselor Certification (CRCC). Graduates of the Rehabilitation Counseling/Teaching (RCTM) program are also eligible to become certified vision rehabilitation therapists (CVRT) through the Academy of Certification of Vision Rehabilitation and Education Professionals (ACVREP). Graduate of the rehabilitation counseling and rehabilitation counseling/teaching programs are also eligible for Michigan Licensure as Professional Counselors (LPC).

Master of Arts in Blindness and Low Vision Studies (Accelerated)

www.wmich.edu/visionstudies/academics/accelerated

The Accelerated Graduate Degree Program (AGDP) in blindness and low vision studies (BLS) provides an opportunity for students in the Bachelor of Science in Interdisciplinary Health Studies degree program (BSIHS) to accumulate credits towards completion of a master's in blindness and low vision studies while still enrolled as an undergraduate student in the BSIHS program. Undergraduate students admitted to the BLS accelerated degree program, with senior standing, may count up to 12 , but no fewer than 6 credit hours of 5000 and/or 6000 level courses for graduate credit. These designated courses may be used in completion of both the bachelor's and master's degree in blindness and low vision studies within 24 months after completing their BSIHS degree.

This program will allow an undergraduate student in the BSIHS program an opportunity to complete an accelerated master's degree program in orientation and mobility for adults and/or vision rehabilitation therapy.

Application to the Accelerated Program
A prospective student who meets the eligibility requirements (see Criteria for Admission) must set a meeting with the BSIHS advisor and the graduate BLS advisor to develop plans of work for the bachelor's and master's degree programs.

Before admission to the AGDP can be finalized, students must submit the standard application for admission to the Graduate College including:

1. An application
2. Application fee
3. Copy of all transcripts
4. A plan of graduate work, signed by the prospective student, the undergraduate program director and the graduate program director
5. Undergraduate GPA (at the time of application) of 3.3 or higher
6. A biographical statement about why applicant is choosing blindness program.

The plan of graduate work for the master's degree must clearly indicate:

1. The 5000 and 6000 level courses (a maximum of 12 graduate credit hours) that will be counted for both the bachelor's and master's degrees.
2. The graduation date for the master's degree that meets the time limit for the AGDP (i.e., obtaining a masters degree in blindness and low vision studies within 24 months of completing the bachelor's degree).

Any changes to the AGDP plan must be submitted in writing and approved by the graduate program advisor and the graduate dean.

Criteria for Admission to the AGDP program

Permission to pursue an AGDP does not guarantee admission to the Graduate College. Admission is contingent on meeting and following eligibility requirements at the time of entering the graduate program:

1. Students must have completed a minimum of 88 and a maximum of 96 credit hours in their undergraduate programs, including credits earned from advanced placement.
2. Transfer students must meet the University requirements for transferring credits from another institution.
3. Students must have a minimum accumulated grade point average (GPA) of 3.3 at WMU and 3.3 in blindness and low vision studies courses.
4. International students must clarify their visa status with the Office of International Admissions and Services before submitting an admission application.

Admission to the AGDP does not guarantee admission to the Graduate College. However, successful completion of an undergraduate degree under AGDP (see Requirements for Participation and Graduation below) will ensure admission to the Graduate College.

Requirements for Participation and Graduation

Students must complete the bachelor's degree prior to entering the master's program. Students in the AGDP may not elect to by-pass the bachelor's degree.

Students will be allowed to count only a maximum of twelve (12) 5000 and 6000 level credits taken during their undergraduate studies towards their master's degree. These credits will be waived toward their master's degree.

AGDP students enrolled in the Bachelor of Science in Interdisciplinary Health Services must take BLS 3050 before applying.

Students must receive a grade of "B" or better in the 5000 and/or 6000 courses taken during their undergraduate studies. Courses with a grade of "CB" or below cannot be counted towards their master's degree.

Students who do not meet the grade criterion of 3.3 will have the earned grade applied to their undergraduate program only, assuming the earned grade meets requirements for the undergraduate program. Students who do not meet the grade criterion as part of the AGDP must apply for readmission to the graduate program.

No more than 12 hours of graduate work may be counted towards the requirements of the student's bachelor's degree.

Students must complete the master's degree within 24 months from completion of the bachelor's degree. If the master's is not completed within this time, none of the 5000 or 6000 level courses specified in the plan of graduate work will count towards the master's degree. The graduate program advisor may grant an extension to this in special cases.

Continuing Eligibility

It is the responsibility of the student to recognize his/her eligibility status.

A student completing the bachelor's degree requirements with an accumulated GPA of less than 3.3 is automatically terminated from the AGDP.

A student who does not follow the approved plan of graduate work may become ineligible to participate in the AGDP.

A student who is ineligible to participate in (or withdraws from) the AGDP no longer qualifies for waiving courses specified in the plan of graduate work toward a master's degree. These courses, however, may be counted toward the student's bachelor's degree upon the discretion of the undergraduate advisor.

The graduate advisor shall inform a student who becomes ineligible to participate in the AGDP, in writing. A copy of this letter shall be sent to the Graduate College.

Withdrawal

A student may withdraw from an approved AGDP at any time by informing the director of the undergraduate program and the graduate advisor, in writing. A copy of this request to withdraw will be send to the Graduate College for approval.

Eligible Courses for the AGDP

To select courses for the AGDP, students will work with their undergraduate and graduate advisor to determine which credits in the current undergraduate curriculum the AGDP credits will replace. The following is the list of the 5000 and 6000 level courses from which students will elect their 12 credit hours for the AGDP administered by the Department of Blindness and Low Vision Studies:

BLS 5770 - Services for Persons Who Are Blind or Have Other Disabilities Credits: 1-2 hours
BLS 5880 - Psychosocial Aspects of Disability Credits: 2 hours
BLS 5890 - Medical and Functional Aspects of Disability Credits: 2 hours
BLS 5900 - Physiology and Function of the Eye Credits: 2 hours
BLS 5950 - Introduction to Orientation and Mobility Credits: 2-4 hours
BLS 5970 - Principles of Low Vision Credits: 2 hours
BLS 6020 - Gerontology in Orientation and Mobility and Rehabilitation Teaching Credits: 2 hours
BLS 6050 - Practice in Low Vision Credits: 1 hr. (must be taken in the same semester as BLD 5970)

Bronson School of Nursing

Mary Lagerwey, Director
3466 CHHS Bldg.
Telephone: (269) 387-8150
Fax: (269) 387-8170

Kelly Ackerson
Karen Bergman
Yvonne Ford
Kelley Pattison
Lisa Singleterry
Mary Ann Stark
Sally Vliem
Linda Zoeller

The Western Michigan University Bronson School of Nursing offers a Bachelor of Science in Nursing (BSN) and a Master of Science in Nursing (MSN).

Master of Science in Nursing

M.S.N. Coordinator: Kelly Ackerson
3462 CHHS Bldg.

The graduate program in nursing builds upon the baccalaureate entry into professional nursing, providing both academic and practice experiences basic to obtaining competencies for advanced professional nursing. The purpose of the Master of Science in Nursing (M.S.N.) online program is to prepare nurses with advanced education in the discipline of nursing and scholarship for their chosen field of practice.

The graduate program in advanced professional nursing is designed to meet accreditation requirements of the national accreditation nursing bodies. The M.S.N. program received initial accreditation from the Commission on Collegiate Education in Nursing (CCNE) in September 2008 and recently received re-accreditation until 2023. Emphasis on learning within an interprofessional environment is included in keeping with recommended competencies for health professionals from the Institute of Medicine (IOM).

The master's degree program requires a minimum of 36 credit hours taken within 12 courses (three hours each). All courses are delivered in an online format. The program is designed to be completed within seven semesters.

<u>Admission Requirements</u>
Applicants must complete the university's Graduate online application before admission consideration to the M.S.N. program will be conducted. Individuals are admitted for study beginning only in the fall semester. Students are expected to be proficient in use of MS Word, PowerPoint, and online resources (Internet, library resources, discussion boards) to participate in class. Admissions decisions are announced on a continuous basis; applicants are encouraged to apply as early as possible. Not every applicant who meets the minimum admission requirements can be admitted; the department reserves discretion in admission of the most highly qualified applicants. Specific admission requirements are outlined below:

1. Evidence of an earned B.S.N. or B.S. degree with a major in nursing from an accredited program in nursing. Nurses with a baccalaureate degree in another discipline will be considered on an individual basis;
2. A grade point average of at least 3.0 out of 4.0 in the last 60 credit hours of the undergraduate nursing studies;
3. Completion of the following prerequisites:
    - Undergraduate course in descriptive and beginning inferential statistics
    - Undergraduate course in research design
    - Undergraduate course in health informatics

4. Current unencumbered license to practice as a Registered Nurse (RN) in one of the 50 U.S. states or territories;
5. Submission of scores on TOEFL for students whose undergraduate degree was obtained internationally with minimum score of 80;
6. Evidence of personal and professional qualifications for graduate study, as reflected in
    - Submission of scores on TOEFL for students whose undergraduate degree was obtained internationally with minimum score of 80;
    - Response on written statement related to advanced professional nursing
    - Current resume or curriculum vitae
7. Other assessment procedures as indicated.

Program Requirements

In order to graduate from the M.S.N. program, students must complete graduate core courses, support courses, and relevant specialty courses in their chosen track (addiction, gerontology, or nurse educator), with a minimum overall GPA of 3.0 or better (up to 12 hours may be transferred in from master's level nursing course work on which the student earned a grade of "B" or better). Students are expected to manifest throughout the program, behavioral and professional competencies consistent with the ANA Code of Ethics.

Required courses in the program are the following:

Core Courses:

NUR 5300 - Theoretical Foundations of Nursing Practice Credits: 3 hours
NUR 6320 - Health Care Policy, Organization & Financing Credits: 3 hours
NUR 6400 - Professional Inquiry: Qualitative and Quantitative Methods Credits: 3 hours
NUR 6410 - Methods for Measuring Quality in Health and Educational Systems Credits: 3 hours
NUR 6420 - Quality and Safety in Promoting Health Credits: 3 hours

Support Courses:

NUR 6010 - Advanced Pathophysiology Credits: 3 hours
NUR 6020 - Advanced Physical Assessment Credits: 3 hours
NUR 6030 - Advanced Pharmacology Credits: 3 hours

Specialty Courses in chosen track:

Addiction:

NUR 6640 - Field Practicum Credits: 3 hours

Select three ADA courses from the following:
ADA 6060 - Causes of Substance Abuse Credits: 3 hours
ADA 6110 - Physical Aspects of Addictive Drugs Credits: 3 hours
ADA 6115 - Applied Neuropsychopharmacology of Addictive Drugs Credits: 3 hours
ADA 6330 - Diversity and Ethical Issues in Addictions Credits: 3 hours
ADA 6340 - Recovery Oriented Systems of Care Credits: 3 hours
ADA 6400 - Co-Occurring Disorders and Addictions Credits: 3 hours
ADA 6410 - Addiction in Family Systems Credits: 3 hours

Gerontology:

NUR 6640 - Field Practicum Credits: 3 hours

Select three GRN courses from the following:
GRN 6700 - The Study of Human Aging Credits: 3 hours
GRN 6800 - Global Issues and Cultural Perspectives on Aging Credits: 3 hours
GRN 6810 - Aging Health and Social Services Credits: 3 hours
GRN 6900 - Special Topics in Gerontology Credits: 1 to 6 hours

Nurse Educator:

NUR 6600 - Curriculum and Teaching of Theory in Health Disciplines Credits: 3 hours
NUR 6610 - Clinical Teaching and Evaluation in Health Disciplines Credits: 3 hours
NUR 6620 - The Scholarship of Teaching in a Clinical Discipline Credits: 3 hour
NUR 6630 - Practicum in Teaching Credits: 3 hours

Interdisciplinary Health Programs (School of)

, Director

Paula Andrasi
Robert Bensley
Lori Gray
Kathryn Lewis Ginebaugh
Michele McGrady
Shannon McMorrow
Mark St. Martin
Vivian Valdmanis
Delores Walcott
Robert Wertkin

Master of Public Health
The Master of Public Health (MPH) is a generalist degree that prepares students in the five core areas of public health: biostatistics, environmental health sciences, epidemiology, health services administration, and social and behavioral sciences. It has a focus on leadership and preparing individuals to play a role in shaping the future of public health. The program uses a cohort-based learning model. It is delivered using a hybrid model with the majority of the work being done in a distance format. It is 46 credit hours in length and is designed to be completed in 24 months. It includes a practicum designed to provide students with applied, practical experience in a community or public setting. It also includes a culminating experience in which students identify a significant public or community health issue and then plan and implement a project that provides evidence of their ability to synthesize and integrate public health knowledge, skills, and competencies.

Requirements
MPH 6000 - Public Health Biology Credits: 3 hours
MPH 6004 - Public Health Policy and Administration Credits: 4 hours
MPH 6012 - Epidemiology Credits: 4 hours
MPH 6016 - Environmental Health Sciences Credits: 4 hours
MPH 6020 - Case Studies in Public Health Credits: 2 hours
MPH 6024 - Public Health Planning and Evaluation Credits: 4 hours
MPH 6028 - Public Health Communication and Marketing Credits: 3 hours
MPH 6032 - Health Education and Behavior Credits: 4 hours
MPH 6036 - Public Health Preparedness Credits: 2 hours
MPH 6040 - Public Health Informatics Credits: 2 hours
MPH 6044 - Public Health Practicum I Credits: 3 hours
MPH 6048 - Public Health Practicum II Credits: 1 hour
MPH 6052 - Integrative Project I Credits: 1 hour
MPH 6056 - Public Health Leadership Credits: 3 hours
MPH 6060 - Integrative Project II Credits: 1 hour
MPH 6064 - Public Health Law and Ethics Credits: 2 hours

Certificate Program in Gerontology
The Western Michigan University Graduate Certificate in Gerontology enhances the knowledge and skills of individuals working with or studying older adults and aging processes. Gerontologists improve the quality of life and promote the well-being of persons as they age within their families, community and society through research, education and application of interdisciplinary knowledge of the aging process and aging populations. Students in the WMU certificate program learn about the biological, social and psychological foundations of human aging with a focus on global and cultural variations. Students apply their knowledge and skills in a project prior to earning the certificate.

The Graduate Certificate in Gerontology, offered through the College of Health and Human Services, can be earned as an independent certificate or used to supplement other graduate education. This may include students who are enrolled in programs related to health and human services, preparing for careers in public service and program administration, and those in basic and applied science fields who are interested in the study of aging. Related graduate degrees include biological sciences, counseling psychology, sociology, public administration, social work, music therapy, occupational therapy and family and consumer sciences. Course are online and can be completed in less than two years.

Required Courses: 15 credit hours
GRN 6700 - The Study of Human Aging Credits: 3 hours
GRN 6800 - Global Issues and Cultural Perspectives on Aging Credits: 3 hours
GRN 6810 - Aging Health and Social Services Credits: 3 hours
GRN 6900 - Special Topics in Gerontology Credits: 1 to 6 hours
(Credits: 3 hours required)
GRN 7110 - Gerontology Project Credits: 2 to 6 hours
(Credits: 3 hours required)

Certificate Program in Integrative Holistic Health and Wellness (18 hours)
Main Office: Room 2400 College of Health and Human Services
Telephone: (269) 387-2650
Western Michigan University's Integrative Holistic Health and Wellness (IHHW) program offers a graduate certificate that can be pursued as an independent certificate or as a supplement to other graduate training. The certificate complements and supports the coursework of related fields, enabling students to work within their chosen profession from a holistic perspective that may enhance career opportunities. Students in the helping professions such as social work, counseling, psychology, theology, occupational therapy, health studies, nursing, education, and the arts will especially benefit from this program. Students who earn the graduate certificate will understand the philosophy of holism (the interconnectedness of body-mind-spirit) and the connection between their personal journey and their expression of this in the world of relationships and work.
Please be aware that financial aid for the integrative holistic health and wellness graduate certificate is only available if you are pursuing another graduate degree at Western Michigan University.

Application
IHHW uses an online application system that can be accessed at: www.wmich.edu/holistic/academics/grad/apply. Within the online application system, applicants must provide general information (including educational history details), as well as specific program requirements listed below. Applicants must also request official transcripts, and any required graduate test and/or language proficiency official scores, be sent to WMU.

1. A resume or curriculum vitae (CV) is required; please submit within the online application system.
2. This program does not require a graduate test. Note: International applicants may have to provide evidence of English language proficiency. More information can be found within the online application.
3. The program requires a letter of recommendation from someone who can speak to your readiness for graduate work, communication skills, and appreciation of diversity.
4. Please prepare a written statement which covers the following information and attach it with the online application:

- Identify your major reasons for seeking admission to the Integrative Holistic Health and Wellness Graduate Certificate Program.
- Identify two personal or professional goals.
- How do you see your participation in the program assisting you in reaching your goals?
- Explain how and when you plan to use this training.
- Describe any current or past activities that demonstrate your personal commitment to wellness.
- List any holistic certifications or modalities in which you are trained.
- Have you completed the undergraduate minor in Integrative Holistic Health and Wellness?

Deadlines
Applications are accepted on an ongoing basis. However, the application must be complete (i.e. all official transcripts and required documents received) two weeks prior to the start of any given semester/session or the application will be deferred to the following semester/session. Once a semester/session has started, all applications will be deferred to the following semester/session.

Additional Information
Please select degree you are seeking in the academic intent section of the application so that it can be routed to the correct department. If you have any questions, please review the website below for program and contact information. Integrative Holistic Health and Wellness Program - College of Health and Human Services.

Professional Fieldwork
HOL 6700/HOL 7120 is a 180 hour professional field or internship experience in Integrative Holistic Health and Wellness to complete the graduate certificate program. Your field experience can be completed in one semester or up to one year. If the 180 hour internship is not completed within one semester, the student may receive an incomplete grade with the approval of the instructor or advisor. This incomplete grade may then be removed and replaced with a "credit/no credit" grade as soon as all of the 180 hours of internship are completed within one year.

Students may complete their 180 hours of internship field experience in Integrative Holistic Health and Wellness by selecting one or a combination of the following areas:

- Research
- Teaching courses and seminars
- Program development and evaluation
- Clinical work

Those graduate students already enrolled in a master's degree or doctoral degree program at WMU or at any other fully accredited university, may use their required internships within their programs to satisfy the requirements for HOL 6700 (master's level) or HOL 7120 (doctoral level) as long as all of the holistic health certificate course requirements are fulfilled as stated and a component from holism is included in the internship. The field experience must be approved by both the degree program and certificate program and requirements for both programs successfully completed.

Required courses:
HOL 5310 - Introduction to Holistic Health Credits: 3 hours
Must be taken if student has not completed the undergraduate minor in IHHW offered at Western or another holistic course of study that is approved by the Program Coordinator. NOTE: if the student does not need to take HOL 5310 then s/he must take a three (3) credit elective in its place.
HOL 6500 - Seminar in Holistic Methods Credits: 3 hours
HOL 6700 - Professional Field Experience Credits: 1 to 6 hours
OR
HOL 7120 - Professional Field Experience Credits: 2 to 12 hours

Choice of nine (9) credits from the following:
HOL 5300 - Special Topics in Holistic Health Credits: 1 to 4 hours
HOL 5301 - Meditation to Enhance Living Credits: 1 hour
HOL 5302 - Advanced Meditation to Enhance Living Credits: 1 hour
HOL 5303 - Tai Chi to Enhance Living Credits: 1 hour
HOL 5304 - Yoga to Enhance Living Credits: 1 hour
HOL 5305 - Mindfulness Theory and Skills Credits: 3 hour
HOL 5320 - Holistic Approaches to Personal Relationships Credits: 3 hours
HOL 5321 - Holistic Health Coaching Credits: 3 hours
HOL 5330 - Holism and Community Credits: 3 hours
HOL 5340 - Holistic Health and Spirituality Credits: 3 hours
HOL 5350 - Holistic Approaches to Stress Credits: 3 hours
HOL 5360 - Wellness Skills for Health Professionals Credits: 3 hours

HOL 5370 - Health and Humor Credits: 3 hours
HOL 5380 - Eastern Thought and Practice Credits: 3 hours
HOL 5500 - Introduction to Holism and Expressive Arts Credits: 3 hours
HOL 5510 - Holistic Approaches to Healing Through Visual Art Credits: 3 hours
HOL 5520 - Healing through Movement Credits: 3 hours
HOL 5530 - Holistic Strategies for Illness and End of Life Credits: 3 hours
HOL 5540 - Love and Forgiveness Credits: 3 hours
HOL 5550 - Successful Aging-Holistic Perspectives Credits: 3 hours
HOL 5980 - Readings in Holistic Health Credits: 1 to 4 hours
HOL 6910 - Spirituality and the Therapeutic Process Credits: 3 hours
HOL 6970 - Independent Study in Holistic Health Credits: 1 to 4 hours

Grade Requirements:
Students in the graduate certificate program should maintain at least a 3.0 GPA and may be placed on probation should they receive a 2.0 or lower in any individual class. Students will need to comply with university standards regarding successful completion of their graduate education.

Certificate Program in Holistic Approaches to Enhance Living
The Integrated Holistic Health and Wellness program in now offering 9 credit specialty certificates on topical areas in holistic health. This specialty certificate is meant for graduate students in health and human service degrees who would like to have special training in a particular area of holistic health but are unable or disinterested in taking the entire certificate in Integrative Holistic Health and Wellness. They are also meant for students who want to increase their understanding of the need for self-care and enhance their self-care activities.

Requirements for Graduate Specialty Certificates

All students interested in completing a 9 hour graduate specialty certificate must take:
HOL 5310 - Introduction to Holistic Health
in order to receive an orientation to and understanding of the philosophy of holistic health. Depending on the specialty area the student wishes to pursue, they will then take 6 more credits including a 3 credit required course for the area and 3 credits of selected electives.

Should a student wish to complete a second specialty certificate, then they will need to take an extra 3 credits of the selected electives for that specialty area in lieu of
HOL 5310 - Introduction to Holistic Health

Finally, should a student wish to complete a third specialty certificate, then they will need to take
HOL 6500- Seminar in Holistic Methods
instead of
HOL 5310 - Introduction to Holistic Health

If, after completing three specialty certificates, the student wishes to receive the Graduate Certificate in Holistic Health, they must complete an approved field experience and take
HOL 6700 - Professional Field Experience

Admission Process for Graduate Specialty Certificates in Integrative Holistic Health and Wellness Program

All student interested in the Graduate Specialty Certificates in Integrative Holistic Health and Wellness must demonstrate that they have been admitted to the graduate college. They must then complete an application indicating the Graduate Specialty Certificate that they expect to pursue. These can be obtained online at http://wmich.edu/grad/admissions/single.php?id=88. Students need to possess an overall graduate GPA of 3.0 and achieve at least a 3.0 in their certificate classes.

Holistic Approaches to Enhanced Living (9 credit hours)
HOL 5310 - Introduction to Holistic Health Credits: 3 hours

And
6 credits of any Holistic elective courses at the 5000 or 6000 Level

Note:
No HOL class may be repeated for credit if more than one specialty certificate is taken.

Certificate Program in Holistic Approaches to Mindfulness
The Integrated Holistic Health and Wellness program in now offering 9 credit specialty certificates on topical areas in holistic health. This specialty certificate is meant for graduate students in health and human service degrees who would like to have special training in a particular area of holistic health but are unable or disinterested in taking the entire certificate in Integrative Holistic Health and Wellness. They are also meant for students who want to increase their understanding of the need for self-care and enhance their self-care activities.

Requirements for Graduate Specialty Certificates

All students interested in completing a 9 hour graduate specialty certificate must take:
HOL 5310 - Introduction to Holistic Health
in order to receive an orientation to and understanding of the philosophy of holistic health. Depending on the specialty area the student wishes to pursue, they will then take 6 more credits including a 3 credit required course for the area and 3 credits of selected electives.

Should a student wish to complete a second specialty certificate, then they will need to take an extra 3 credits of the selected electives for that specialty area in lieu of
HOL 5310 - Introduction to Holistic Health

Finally, should a student wish to complete a third specialty certificate, then they will need to take
HOL 6500- Seminar in Holistic Methods
instead of
HOL 5310 - Introduction to Holistic Health

If, after completing three specialty certificates, the student wishes to receive the Graduate Certificate in Holistic Health, they must complete an approved field experience and take
HOL 6700 - Professional Field Experience

Admission Process for Graduate Specialty Certificates in Integrative Holistic Health and Wellness Program

All student interested in the Graduate Specialty Certificates in Integrative Holistic Health and Wellness must demonstrate that they have been admitted to the graduate college. They must then complete an application indicating the Graduate Specialty Certificate that they expect to pursue. These can be obtained online at http://wmich.edu/grad/admissions/single.php?id=88. Students need to possess an overall graduate GPA of 3.0 and achieve at least a 3.0 in their certificate classes.

Holistic Approaches to Mindfulness (9 credit hours)
HOL 5310 - Introduction to Holistic Health Credits: 3 hours
HOL 5305 - Mindfulness Theory and Skills Credits: 3 hours
And
HOL 5301 - Meditation to Enhance Living Credits: 1 hour
Plus
HOL 5302 - Advanced Meditation to Enhance Living Credits: 1 hour
OR
HOL 5380 - Eastern Thought and Practice Credits: 3 hours

Note:
No HOL class may be repeated for credit if more than one specialty certificate is taken.

Certificate Program in Holistic Approaches to Spirituality and Healing

The Integrated Holistic Health and Wellness program in now offering 9 credit specialty certificates on topical areas in holistic health. This specialty certificate is meant for graduate students in health and human service degrees who would like to have special training in a particular area of holistic health but are unable or disinterested in taking the entire certificate in Integrative Holistic Health and Wellness. They are also meant for students who want to increase their understanding of the need for self-care and enhance their self-care activities.

Requirements for Graduate Specialty Certificates
All students interested in completing a 9 hour graduate specialty certificate must take:
HOL 5310 - Introduction to Holistic Health
in order to receive an orientation to and understanding of the philosophy of holistic health. Depending on the specialty area the student wishes to pursue, they will then take 6 more credits including a 3 credit required course for the area and 3 credits of selected electives.

Should a student wish to complete a second specialty certificate, then they will need to take an extra 3 credits of the selected electives for that specialty area in lieu of
HOL 5310 - Introduction to Holistic Health

Finally, should a student wish to complete a third specialty certificate, then they will need to take
HOL 6500- Seminar in Holistic Methods
instead of
HOL 5310 - Introduction to Holistic Health

If, after completing three specialty certificates, the student wishes to receive the Graduate Certificate in Holistic Health, they must complete an approved field experience and take
HOL 6700 - Professional Field Experience

Admission Process for Graduate Specialty Certificates in Integrative Holistic Health and Wellness Program

All student interested in the Graduate Specialty Certificates in Integrative Holistic Health and Wellness must demonstrate that they have been admitted to the graduate college. They must then complete an application indicating the Graduate Specialty Certificate that they expect to pursue. These can be obtained online at http://wmich.edu/grad/admissions/single.php?id=88. Students need to possess an overall graduate GPA of 3.0 and achieve at least a 3.0 in their certificate classes.

Holistic Approaches to Spirituality and Healing (9 credit hours)
HOL 5310 - Introduction to Holistic Health Credits: 3 hours
HOL 5340 - Holistic Health and Spirituality Credits: 3 hours
HOL 6910 - Spirituality and the Therapeutic Process Credits: 3 hours

Note:
No HOL class may be repeated for credit if more than one specialty certificate is taken.

Certificate Program in Holistic Approaches to Stress Management

The Integrated Holistic Health and Wellness program in now offering 9 credit specialty certificates on topical areas in holistic health. This specialty certificate is meant for graduate students in health and human service degrees who would like to have special training in a particular area of holistic health but are unable or disinterested in taking the entire certificate in Integrative Holistic Health and Wellness. They are also meant for students who want to increase their understanding of the need for self-care and enhance their self-care activities.

Requirements for Graduate Specialty Certificates

All students interested in completing a 9 hour graduate specialty certificate must take:
HOL 5310 - Introduction to Holistic Health
in order to receive an orientation to and understanding of the philosophy of holistic health. Depending on the specialty area the student wishes to pursue, they will then take 6 more credits including a 3 credit required course for the area and 3 credits of selected electives.

Should a student wish to complete a second specialty certificate, then they will need to take an extra 3 credits of the selected electives for that specialty area in lieu of
HOL 5310 - Introduction to Holistic Health

Finally, should a student wish to complete a third specialty certificate, then they will need to take
HOL 6500- Seminar in Holistic Methods
instead of
HOL 5310 - Introduction to Holistic Health

If, after completing three specialty certificates, the student wishes to receive the Graduate Certificate in Holistic Health, they must complete an approved field experience and take
HOL 6700 - Professional Field Experience

Admission Process for Graduate Specialty Certificates in Integrative Holistic Health and Wellness Program

All student interested in the Graduate Specialty Certificates in Integrative Holistic Health and Wellness must demonstrate that they have been admitted to the graduate college. They must then complete an application indicating the Graduate Specialty Certificate that they expect to pursue. These can be obtained online at http://wmich.edu/grad/admissions/single.php?id=88. Students need to possess an overall graduate GPA of 3.0 and achieve at least a 3.0 in their certificate classes.

Holistic Approaches to Stress Management (9 credit hours)
HOL 5310 - Introduction to Holistic Health Credits: 3 hours
HOL 5350 - Holistic Approaches to Stress Credits: 3 hours
And
HOL 5305 - Mindfulness Theory and Skills Credits: 3 hours
OR
HOL 5370 - Health and Humor Credits: 3 hours

Note:
No HOL class may be repeated for credit if more than one specialty certificate is taken.

Occupational Therapy

Carla Chase, Interim Chair
Main Office: 3430 CHHS Building
Telephone: (269) 387-7260
Fax: (269) 387-7262

Ann Chapleau
Diane Dirette
Kieran Fogarty
Nancy Hock
Debra Lindstrom
Maureen Mickus
Michelle Suarez

The Department of Occupational Therapy offers three graduate programs which lead to the Master of Science: The 4 + 1 program for current and transfer students, the graduate professional program (entry level) for non-therapists—i.e., those with a post-professional baccalaureate degree in an area other than occupational therapy—and the graduate program for certified therapists (advanced level).

Master of Science in Occupational Therapy

The Graduate–Professional Program
This twenty-eight month program of combined academic and clinical education is intended for the student who has a baccalaureate degree in an area of study other than occupational therapy. It consists of 72 semester hours with 42 semester hours in professional undergraduate courses and 30 semester hours of graduate courses. The Graduate Professional Program is offered through two sites, the main campus in Kalamazoo, Michigan and through the WMU Grand Rapids, Michigan location.

Accreditation Status
The entry-level occupational therapy master's degree programs are accredited by the Accreditation Council for Occupational Therapy Education (ACOTE), of the American Occupational Therapy Association (AOTA), located at 4720 Montgomery Lane, Suite 200, Bethesda, MD 20814-3449. ACOTE's telephone number c/o AOTA is (301) 652-AOTA. Graduates of this program will be eligible to sit for the national certification examination for occupational therapists administered by the National Board for Certification in Occupational Therapy (NBCOT). After successful completion of the exam, the individual will be an Occupational Therapist, Registered (OTR). In addition, most states require licensure in order to practice; however, state licenses are usually based on the results of the NBCOT Certification Examination. Note that a felony conviction may affect a graduate's ability to sit for the NBCOT certification examination or obtain state licensure.

Admission Requirements
To be eligible for regular admission to this program, each applicant must present evidence of the following criteria:

1. An earned bachelor's degree from an accredited college or university.
2. A cumulative grade point average of 3.0 or better in the most recent 60 hours of undergraduate and graduate academic course work.
3. Official transcripts for all college work.
4. All prerequisite courses must be completed at the time of application to the occupational therapy graduate program. Students may be enrolled in OT 2020: Orientation to Occupational Therapy at the time of application.
5. Departmental approval.

Because admission is considered competitive, the academic criteria listed above should be considered as minimum standards.

Please note the following:

1. In the admission process, a formula is employed that assigns points for GPA and for the other admission topics. Admission to the program is based on the compilation of all points.
2. Admission to the University does not guarantee admission to the professional occupational therapy curriculum. Official transcripts from all colleges and universities attended must be sent to the University Admissions Office in time to be processed prior to the department deadline.
3. Occupational therapy is a profession that is regulated on national and state levels, and everyone who wishes to practice as an occupational therapist is required to pass the NBCOT Certification Exam after graduating from an accredited program.
4. Individuals who have been convicted of a felony or who have been charged with a felony and convicted of a misdemeanor, while not prohibited from taking the NBCOT certification examination, may not be able to practice based on state laws.

Prerequisite Course Work

The following courses (with the WMU equivalent noted in parentheses) are required prerequisites for enrollment in the professional occupational therapy courses. All prerequisite courses must be completed at the time of application to the occupational therapy graduate program. Students may be enrolled in OT 2020: Orientation to Occupational Therapy at the time of application.

1. Human Growth and Development through the Life Span (HSV 2250* or equivalent).
2. A course in orientation to occupational therapy (OT 2020*).
3. One course in General Psychology (PSY 1000 – General Psychology)
4. One course in Abnormal Psychology (PSY 2500 – Abnormal Psychology)
5. English composition (Proficiency 1 of General Education Requirements).
6. Eight credit hours of biological sciences, including human anatomy and physiology (BIOS 1910, or BIOS 2110 and 2400).

Program Requirements

Prior to the first semester of the professional program, admitted students are required to either

- pass the Research Readiness Self-Assessment in Health (RRSAH-WMU) proficiency exam with a score of 75% or above **or**
- enroll in and successfully complete HSV 3650: Information Literacy in the Health Sciences during the first semester of their OT coursework.

The graduate professional program consists of 72 semester hours in the following areas:

1. Completion of 42 hours of professional occupational therapy education. This 42-hour sequence of undergraduate professional education is designed to prepare the student to treat clients with various disabilities, and to be eligible for certification.

2. Completion of 30 hours of graduate courses. This 30-hour component includes the following:
OT 5730 - Assistive Technology Credits: 3 hours
OT 5800 – Advanced Clinical Application of OT Clinical Reasoning Credits: 3 hours
OT 6330 - Administration of Occupational Therapy Credits: 3 hours
OT 6400 - Theory in Occupational Therapy Credits: 3 hours
OT 6600 - Research in OT I Credits: 3 hours
OT 6610 - Research in OT II Credits: 3 hours
OT 6860 - Graduate Seminar Credits: 3 hours
OT 6900 - Fieldwork Level II Credits: 3 – 12 hours
OT 6910 - Fieldwork Level II Credits: 3 – 12 hours
Elective Credits: 3 hours

Fieldwork requirement

Six months of full-time fieldwork is required as a student therapist in two clinical practice sites. Western Michigan University utilizes fieldwork sites primarily in Michigan and the mid-west states with some sites throughout the

United States. All fieldwork must be completed within 24 months following the completion of academic course work.

Benchmarks for all students admitted to the Occupational Therapy Graduate Professional Program

1. Students will complete all required OT courses with a grade of "C" or better.
2. Students may repeat only one required professional course, and that course only once, to attain a grade of "C" or better. Note that a withdrawal from a course is considered an enrollment.
3. Students who fail to attain a grade of "C" or better in a professional course will be placed on departmental probation.
4. Students who do not successfully complete departmental probation will be dismissed from the program.
5. A second unsuccessful enrollment will result in dismissal from the program.
6. The student must manifest emotional and professional behavior as described in the Occupational Therapy Department, Professional Behavior Policy.
7. The student must comply with the Occupational Therapy Department Policy on Criminal Background Check.
8. The student must comply with the Occupational Therapy Department Policy on Drug Screening.

Fieldwork Remediation and Continuance Policy

1. Successful completion of OT 4750 is a prerequisite for OT 4820.

2. Students who receive a failing grade in fieldwork:
The following courses are subject to the academic policy for remediation and continuance, and will repeat the experience in a similar setting.

Level I
(OT 4750, OT 4820)
OR

Level II
(OT 6900, OT 6910) are subject to the academic policy for remediation and continuance, and will repeat the experience in a similar setting.

3. Successful completion of all professional and prerequisite course work is required for:
OT 6900

4. Successful completion of all undergraduate course work required for graduation is required for:
OT 6900 and OT 6910.

5. Students who fail fieldwork, or who are asked to withdraw are subject to review in accordance with the departmental remediation and continuance policy.

The Graduate Post Professional Program (Program Currently Inactive)
This advanced level program for the certified occupational therapist leads to the Master of Science in Occupational Therapy and is designed to enhance growth in professional leadership potential by developing skills in administration, program development, theories and practice, professional issue identification and resolution, and research.

Admission Requirements
To be eligible for regular admission to this program, each applicant must present evidence of the following criteria:

1. An earned bachelor's degree from an accredited college or university.
2. A cumulative grade point average of 3.0 or better. (By policy of the Graduate College, students admitted with less than a 3.0 GPA are admitted on probation.)
3. Certified as an occupational therapist by NBCOT.

Because admission is considered competitive, the academic criteria listed above should be considered minimum standards.

Admission Procedure
To apply, the applicant must complete both the Graduate College application for admission and the departmental application. Admission is on a rolling basis.

Program Requirements

This 30-hour component includes the following:

OT 5730 – Assistive Technology Credit: 3 hours
OT 6000 - Advanced Clinical Practice in Occupational Therapy Credits: 3 hours
OT 6400 - Theory in Occupational Therapy Credits: 3 hours
OT 6600 - Research in OT I Credits: 3 hours
OT 6610 - Research in OT II Credits: 3 hours
OT 6860 - Graduate Seminar Credits: 3 hours

Grade Requirements
An overall grade point average of at least 3.0 (A=4.0) is required for graduation from the graduate program. Students will complete all required departmental courses with a grade of "C" or better. Subsequent courses cannot be taken until prerequisites are completed successfully. Honor point deficiencies acquired in credits earned at Western Michigan University cannot be made up by any credits earned at another university.

Please read the WMU Graduate College Catalog for information on other requirements for the completion of a master's degree.

Certificate in Low Vision Rehabilitation for OT

Anne Riddering, MS, OTRL Certificate Program Coordinator
College of Health and Human Services
Advising: Sarah Anderson, MA
Phone: (269) 387-2656

Since 1922, WMU occupational therapy program has been a leader and innovator in the field, and our graduates have made significant contributions throughout the nation and the world. In 2012 we celebrated our 90th Anniversary, commemorating a tradition of excellence and committing to a bold future.

The department offers a Graduate Certificate in Low Vision Rehabilitation for board certified occupational therapists. The aim of this program is to acquire competencies in assessment and intervention principles for clients with low vision while incorporating occupational therapy theory and evidence based research from the vision rehabilitation field. The certificate program builds a foundation and provides in-depth, hands-on training to serve the unique needs of the individual with vision loss, the impact on occupational performance, and in interventions and compensatory techniques for daily occupations to help a person adapt to their vision loss. Assignments throughout the program will assist students with networking in an interprofessional environment within their professional community. In addition to acquiring the graduate certificate, graduates will be eligible to apply for advanced certification in vision rehabilitation from the American Occupational Therapy Association.

This 16 credit hour graduate level program consists of a combination of online and onsite clinical training courses as follows:

Required Courses:
OT 6335 - Low Vision Rehab for OT I: Foundations of Rehabilitation Credits: 4 hours
OT 6435 - Low Vision Rehabilitation for OT II: OT Assessment and Intervention Credits: 3 hours

OT 6535 - Low Vision Rehabilitation for OT III: Advanced Assessment and Intervention Credits: 3 hours
OT 5735 - Cognition and Visual Perception in Occupational Therapy Credits: 3 hours
OT 6635 - Low Vision Rehabilitation for OT IV: Theory and Practice Credits: 3 hours

Physical Therapy

Stacie Fruth, Chair
Main Office: CHHS Bldg.
Telephone: (269) 387- 7367

Physician Assistant

Denise Bowen, Interim Chair
Main Office: 3425 CHHS Bldg.
Telephone: (269) 387-5311
Fax: (269) 387-5319

David Areaux
Amy Curtis
Susan King-Barry
Tiffany Lee
C. Dennis Simpson
Kathy Tuinhoff
Phillip Walcott
Evelyn Winfield

Master of Science in Medicine
Advisor
2125 CHHS Bldg.

The Department of Physician Assistant offers a professional entry-level program leading to the Master of Science in Medicine. This program is solely intended as a full-time professional education curriculum, accredited by the Accreditation Review Commission on Education for the Physician Assistant (ARC-PA), allowing graduates to sit for the Physician Assistant National Certifying Examination (PANCE) administered by the National Commission on Certification of Physician Assistants (NCCPA), required by all states for licensure to practice.

Admission Requirements
To be eligible to apply for admission, prospective applicants must present evidence of the following:
1. Earned academic bachelor's degree from an accredited institution, with a grade point average of 3.0 or better in the most recent 60 hours.
2. Completion of one course in developmental psychology (lifespan).
3. Completion of one upper division course in biochemistry.
4. Completion of one course in microbiology with a lab.
5. Completion of one course in human anatomy.
6. Completion of one upper division course in human physiology.
7. Completion of one course in introductory statistics.
8. Completion of 1,000 hours of direct patient contact hours acceptable to the department.

Due to the competitive nature of this program, the above should be viewed as minimum standards.

Admission Procedures
To apply, the applicant must complete the application to the Central Application Service for Physician Assistants (CASPA). In addition, applicants must also complete the Western Michigan University Physician Assistant supplemental application (Deadline: Dec 1). After a review of applications, selected candidates are invited to participate in an interview session. Candidates for admission are selected from among those interviewed. Applications must be completed no later than December 1 of each year for the full-time class beginning the following fall. Admissions decisions will be based on weighted scoring of academic history, healthcare experience, and information gleaned from essays, letters of recommendation, and interviews, and will be limited by available space. After candidates are invited to join the Physician Assistant Program they will fill out the University's Graduate Application for Admission. This step does not need to be completed unless you are offered a seat in the program.

Program Requirements
The graduate professional program consists of 95 semester hours taken in prescribed sequence over a continuous 24-month time period. The first year consists of 48 hours of primarily classroom education, while the second year

consists of 47 hours of primarily clinical placement education. Each student must complete all MDSC course offerings (listed elsewhere) and satisfy all the department's professional standards criteria to meet graduation requirements.

Social Work, School of

Héctor L. Díaz, Director
4434 CHHS Bldg.
Telephone: (269) 387-3171
Fax: (269) 387-3183

Donald Cooney
Linwood Cousins
Richard Grinnell
Jennifer Harrison
Gary Mathews
Linda Reeser
Mary Ellen Sartoris
Dee Ann Sherwood
Yvonne Unrau
Karen VanDeusen

Master of Social Work

Director of Admissions and Student Services
Amy Vliek
Room 4430, CHHS Building
(269) 387-3201

The Master of Social Work program in professional social work is designed to prepare students for direct service and leadership positions in the field of social work. The program is accredited by the Council on Social Work Education. The curriculum is structured as an integrated and sequential set of conceptual and practicum educational experiences. In preparing students for practice, the School of Social Work recognizes a variety of theoretical paradigms and values and welcomes the challenge and benefits of intellectual and philosophical diversity. It supports students in their personal synthesis of these paradigms and values. In addition, the School stresses development and dissemination of social work knowledge and practice skills.

All students must demonstrate mastery of a set of competencies and practice behaviors, as required by our accrediting body, the Council on Social Work Education. The graduate program prepares students for specialized and advanced levels of practice. It also incorporates a foundation curriculum, built on a liberal arts base. The foundation has two goals: 1) To provide students with the knowledge, values, and skills leading to an informed perspective on the profession of social work; and its service delivery systems, and 2) to prepare students for entry into the concentrations.

There are two concentrations in the graduate program: 1) Interpersonal Practice and 2) Policy, Planning, and Administration. These concentrations build on the foundation curriculum and are the vehicles through which students learn the specific advanced skills of their chosen area of concentration.

The Interpersonal Practice concentration prepares students to become informed practitioners and leaders in working with individuals, families, and groups. Practice courses in the concentration are designed to provide expert competencies in interpersonal practice. Such competencies include the ability to assess situations, carry out appropriate interventions, and evaluate one's own practice framework, strategies, and results when working with clients. The School of Social Work also offers a specialization in Child Trauma as part of its Master of Social Work Program.

The Policy, Planning, and Administration concentration has four essential components: 1) Organizational leadership and management, 2) program planning, 3) analytic tools and technology, and 4) policy practice. The desired outcome of the Policy, Planning, and Administration concentration is the empowerment of practitioners to facilitate changes in organizational, community, and societal structures and processes that contribute to a just distribution of opportunities and resources.

The School of Social Work offers a 15-credit specialization in trauma across the lifespan. This specialization is available to MSW students who elect the Interpersonal Practice concentration. The specialization consists of nine credits of elective courses focused on trauma (these are applied to the nine credits of electives required for the MSW degree) and a concentration-level field placement (6 credits, applied to the 6 credits of concentration-level field placement required for the MSW degree) that meets criteria for trauma-informed practice. Three of the nine elective credits would be met by taking one course: SWRK 6500 - Core Concepts of Child Trauma. Students who wish to pursue the trauma specialization may need to travel to Kalamazoo or Grand Rapids campus locations to complete the full nine credits of trauma-related elective courses required for the specialization.

In addition, graduate social work students have an opportunity to participate in social work-related graduate certificate programs. Included are Alcohol and Drug Abuse (SPADA), Integrative Holistic Health and Wellness, Nonprofit Leadership and Administration, and School Social Work.

Admission Requirements

Applicants for graduate study in social work must complete an online application that can be obtained through the WMU Graduate College. A link to this application can also be found in the School of Social Work's home-page. In addition to the University's requirements for admission to a master's degree program, the following criteria will be considered:

1. Evidence of adequate academic preparation for graduate study in social work. This includes consideration of undergraduate performance, liberal arts academic background, and proficiency in professional writing. Normally a minimum undergraduate GPA of 2.50 is required for admission into the 60 credit MSW program.
2. Evidence of personal qualifications considered desirable for successful social work practice. These include motivation for a human service profession, personal maturity, and leadership ability.
3. Students who have earned a Bachelor of Social Work from a CSWE accredited program within six years of application may apply to the 39-hour, Advanced Standing Program. Applicants must meet the following criteria:

- B.S.W. degree from a CSWE accredited program that was awarded not more than six years prior to the date of application to the WMU School of Social Work
- Overall grade point average of 3.0
- No more than one B.S.W. course below a “B.” Any B.S.W. course below a “B” will require retaking an equivalent course in the M.S.W. curriculum
- One year of full-time post-B.S.W. human service work experience is recommended
- One of the three letters of recommendation must be from the applicant’s B.S.W. program field instructor or faculty liaison.

Full time and extended study students must declare their concentration during the spring semester of their first year of study. Advanced standing students will start their concentration coursework during fall semester.

Applicants may seek admission to either the main campus program or the extended university campuses (Grand Rapids Regional Campus and Southwest Campus program). The application deadline for the Kalamazoo full-time advanced standing program and the part-time advanced standing program in Grand Rapids is January 15. Admission is granted for the summer II session only for advanced standing students. All classes at the Grand Rapids campus convene during evening hours. Due to the rigorous demands of this program, those who plan to be employed full-time should apply to the Grand Rapids part-time advanced standing program.

The application deadline for the Kalamazoo full-time and all extended study programs is March 15. Admission is granted for the fall semester only for applicants to the full-time and extended study programs. Full-time students begin their program in the fall semester and proceed for two calendar years. Extended study students begin their program in the fall semester and proceed for thirty-eight months. Due to the demands of this program, those who plan to be employed full-time should apply to the extended study programs.

Program Requirements

1. The successful completion of 60 hours of credit is required for the conventional master's degree in social work. The degree program includes the following course credits:

- Required Foundation Courses in the School of Social Work (21 hours)
- Required Concentration Courses in the School of Social Work (15 hours)
- Elective Courses in Social Work or in other University departments (9 hours)
- Field Education (12 hours: 6 in the Foundation and 6 in the Concentration)
- Advanced Social Work Research (SWRK 6420 for 3 hours)

2. Students admitted to the advanced standing program complete a minimum of 39 credit hours of required graduate courses.

3. Field Education: Graduate field education is an essential component of social work education and provides students with an opportunity to integrate classroom learning with practice in the field. All full-time and extended-study students are required to complete two field placements for a total of 900 hours over a two-year period during the fall and spring semesters. All advanced-standing students are required to complete one field placement for a total of 500 hours during the fall and spring semesters. The field placement is considered a required course and is taken concurrently with required course work according to the advanced-standing, full-time or extended plan of study. Students are also encouraged to explore the School of Social Work's trauma specialization and the university's certificate programs, some of which have concurrent field placement requirements. Foundation field is graded according to the regular University grading structure, and Concentration field is graded Credit/No Credit.

4. One academic year of full-time study (up to 30 credit hours), including first-year field education, may be accepted for transfer from other accredited graduate schools of social work if the credits were earned with degree status. Anyone seeking admission as a second-year student should request an application packet and complete all application procedures. Where transfer credit and equivalency are being requested, the applicant's documentation will be reviewed by the school’s curriculum committee and/or the Director of Admissions and Student Services.

5. Students may take up to 9 hours of credit under Non-degree Guest status before admission is offered. An additional 3 hours of credit under non-degree status (up to a maximum total of 12 non-degree hours) may be taken and transferred in after the student receives an offer of admission. Please contact the Director of Admissions and Student Services in the School of Social Work for information regarding available classes for Guest Students.

Program Options

Kalamazoo Full-time and Grand Rapids Part-time Advanced-Standing Program

Students who have earned a Bachelor of Science of Social Work degree from a CSWE accredited program within six years of application may apply to the 39 credit hour, 12 month full-time or 22 month part-time advanced-standing program.

The full-time advanced-standing program was established in 1996 and the part-time advanced-standing in 2006. Both programs consist of 39 credit hours. In the advanced-standing programs, all foundation courses are waived. However, students take two specially designed bridge courses that prepare them for entry into the advanced concentrations, and complete a 500-hour field placement between fall and spring semesters.

Kalamazoo Full-time Program

The 60 credit hour graduate program requires 20 months of study. Depending on the concentration chosen, students take 12-15 credit hours during each semester and six credit hours in the summer I session. Due to the rigorous demands of this program, those who plan to be employed full time should apply to the extended-study program.

Sequentially ordered, the courses are scheduled to complement and build upon field education experiences. Students must follow the program schedule as written by the School of Social Work. Variations are possible only with advisor approval.

Extended-study Programs

Financial and other considerations may make full-time study difficult for some students. To meet this need, the School of Social Work offers an Extended-study program whereby students may complete the M.S.W. degree with course work in 32-34 months. Students attend evening classes and are expected to meet the same course and degree requirements as full-time students. Applicants may seek admission to either the Kalamazoo campus, the Grand Rapids campus, or the Southwest campus.

Field education takes place Fall and Spring semesters in the second and third years of the program. For those employed in a human service agency, it may be possible to arrange for a work-study field practicum in the location that would satisfy one of the two required placements. In such situations however, it is necessary for the field education agency to have clear policies and procedures to ensure that the field experience is completely separate from the student's regular employment. For further information you may go to:
http://www.wmich.edu/sites/default/files/attachments/u57/2013/graduate-student-handbook-2012-13.pdf

Grand Rapids Extended-study Program

Classes at this location, offered in the evening, are primarily foundation and interpersonal practice courses. Grand Rapids students who wish to pursue a Policy, Planning and Administration concentration must travel to the Kalamazoo campus for the five concentration classes. Field placements are usually available in the students' home communities.

Southwest - Benton Harbor Extended-study Program
Classes at this location are offered in the evening and consist of foundation, interpersonal practice, and elective courses. Southwest students who wish to pursue a Policy, Planning and Administration concentration must travel to Kalamazoo campus for five concentration courses. Field education takes place fall/spring semesters in both the second and third years of the program. Placements are available for the greater Southwest area.

Degree Partnership Program
Juris Doctor and Master of Social Work
Thomas M. Cooley Law School and Western Michigan University

The School of Social Work of Western Michigan University (SSW-WMU) and the Thomas M. Cooley Law School (TMCLS) cooperate in the delivery of the Master of Social Work degree and a Juris Doctor degree. Both schools offer their existing J.D. and M.S.W. degrees independently and cooperate in a manner that will permit eligible students in one institution's degree program to incorporate course work from the other institution's program.

General Provisions
All degree requirements of TMCLS and SSW-WMU are unaffected by the degree partnership program. Each institution admits students, conducts graduation audits, and exercises control over its respective academic programs independently. Admission to either the MSW degree or the JD degree does not guarantee admission to the other program. Students in this joint degree program will be able to take a limited number of courses to satisfy degree requirements for both programs. As a result, students will be able to complete the graduation requirements for both degrees faster than if they attempted to complete both degrees separately.

Students admitted to each school will be assigned an advisor that will help them develop a cooperative plan of study.

Financial Aid
Financial aid is available to a limited number of qualified students. Information regarding the various types of available assistance may be obtained by contacting the Office of Student Financial Aid or the Director of Admissions and Student Services in the School of Social Work.

Speech, Language and Hearing Sciences

Ann Tyler, Interim Chair
Main Office: 4470 CHHS Bldg.
Telephone: (269) 387-8045
Fax: (269) 387-8044

Judith Seymour, Administrative Assistant II
4476 CHHS (Oakland Campus)

Jan Bedrosian
Cary Cekola
Robin Criter
Teresa Crumpton
Sandra Glista
James M. Hillenbrand
Kathryn Hillenbrand
Yvette Hyter
Bharti Katbamna
Mary Peterson
Linda Shuster
Stephen Tasko

Master of Arts in Speech Pathology and Audiology
Sarah Bowlby, Administrative Assistant I
Room 4477 (SPPA), CHHS Bldg.

The Master of Arts in Speech Pathology and Audiology, which is accredited by the Council on Academic Accreditation in Audiology and Speech-Language Pathology of the American Speech-Language-Hearing Association (ASHA), provides academic and practicum experiences central to the development of clinical competence in the evaluation and treatment of language, speech, and hearing disorders. Students completing the degree program are generally expected to meet the standards for certification of clinical competence by ASHA. The master's degree program consists of a minimum of fifty credit hours. Supervised clinical practice is required during every term of full-time registration and includes at least two assignments to off-campus practicum sites, in addition to evaluation and therapy responsibilities in the Charles Van Riper Language, Speech and Hearing Clinic.

Admission Requirements
Students are admitted for full-time study beginning only in the fall semester. The application deadline is January 15 of the year in which the student wishes to enroll for the fall semester; applicants are advised to complete the application process as early as possible and must apply through the Communication Sciences and Disorders Centralized Application Service. Not every applicant who meets minimum admission requirements can be admitted; the department reserves the right to admit the most highly qualified applicants. Specific admission requirements are outlined below:

1. A grade point average of at least 3.0 in the last 60 credit hours of undergraduate study.
2. Completion of an undergraduate major, or equivalent undergraduate course sequence, in Speech-Language Pathology and Audiology. The student who has not completed these requirements as an undergraduate will need to do so before enrolling in departmental graduate courses.
   a.Undergraduate preparation must include courses that provide information on basic human communication processes. There should be at least one course in phonetics, one course in speech and language development, and one course in the science of speech and hearing.
   b. Undergraduate preparation must also include coursework that provides basic information on speech, language, and hearing disorders.
3. Completion of course work or transcript credit is required in each of the following areas: (a) biological science, (b) statistics, (c) physical sciences (physics or chemistry); and (d) behavioral sciences. The student who has not

completed this course work as an undergraduate will need to do so as a graduate student in order to meet ASHA standards for clinical certification.
4. A grade point average of at least 3.00 in all undergraduate speech pathology and audiology course work.
5. Submission of scores on the General Test of the Graduate Record Examination.
6. Submission of scores on the TOEFL.

7. Evidence of personal and professional qualifications considered necessary for successful professional practice, as reflected in the following documents:

a. Three letters of recommendation from individuals able to comment on the applicant's academic and practicum achievements and potential for successful graduate work.

b. Statement of purpose for seeking graduate degree.

Program Requirements

Specific program requirements are as follows:
1. Completion of a core of required courses specified by the department. The usual sequence of courses takes two academic years plus two summer sessions (six terms of enrollment).
2. ASHA certification requirements are normally a part of the master's degree program. The student must complete at least 375 hours of supervised clinical practicum plus 25 hours of observation for a total of 400 hours. Under certain circumstances a student may have reason to seek the master's degree without qualifying for ASHA clinical certification; students interested in such an arrangement must consult with their graduate advisors.
3. Students must demonstrate emotional and behavioral characteristics which, in the judgment of the departmental faculty, will support development of their professional competence. Behavior to the contrary may lead to dismissal from the program.
4. As an option, a Master's thesis (six hours) or one or more independent research registrations may be applied toward degree requirements by students who demonstrate research aptitude and interest. Students anticipating study toward a doctoral degree are encouraged to show the ability to conduct a research project.

Doctor of Audiology

Advisor: Bharti Katbamna
Room 4484, CHHS Bldg.

The four-year post baccalaureate program in audiology provides academic and practicum experiences leading to the Doctor of Audiology (Au.D.) Degree. The program prepares practitioners in audiology and meets the accreditation standards of the Council on Academic Accreditation of the American Speech-Language-Hearing Association (ASHA). Students who complete the program will meet the requirements for the American Speech-Language-Hearing Association's Certificate of Clinical Competence and/or state licensure. The Au.D. program consists of a minimum of 112 credit hours. Supervised clinical practice is required during every term of full-time registration and includes at least four assignments to off-campus sites in addition to assignments in the Charles Van Riper Language, Speech and Hearing Clinic.

Admission Requirements

For applicants with a bachelor’s degree from an accredited college or university: Students are typically admitted for full-time study beginning only in the fall semester. The application deadline is January 15 of the year in which the student wishes to enroll for the fall semester; applicants are advised to complete the application process as early as possible. Not every applicant who meets minimum admission requirements can be admitted; the department reserves discretion in admission of the most highly qualified applicants. Specific admission requirements are outlined below:

1. A grade point average of at least 3.0 in the last 60 credit hours of undergraduate study.
2. Undergraduate preparation including completion of:

a. course work or transcript credit in each of the following areas: (a) biological science, (b) statistics, (c) physical sciences (physics or chemistry), and (d) behavioral sciences;

b. course work or transcript credits that provides information on basic human communication processes (course work or transcript credit in speech and language development and the science of speech and hearing); and

c. course work or transcript credit in speech, language and hearing disorders.

Note: The course work noted above is typically included in undergraduate degree programs in audiology and speech-language pathology. Students with undergraduate degrees in other disciplines are encouraged to apply and may be able to include some of this preliminary course work in their graduate programs. Previous volunteer or practicum experience in a healthcare setting is recommended.
3. A grade point average of at least 3.0 in all undergraduate audiology and speech-language pathology course work.
4. Competitive scores on the General Test of the Graduate Record Examination (GRE).
5. Submission of scores on the TOEFL.
6. Evidence of personal and professional qualifications considered necessary for successful completion of a doctoral program and for successful professional practice, as reflected in:

a. three letters of recommendation from individuals able to comment on the applicant's achievements and potential; and
b. statement of purpose for seeking the graduate degree.

For applicants holding a graduate degree with a master's degree in audiology from an accredited college or university.
1. Grade point average of at least 3.0 in the previous graduate work.
2. Competitive scores on the General Test of the Graduate Record Examination (GRE).
3. Evidence of personal and professional qualifications considered necessary for successful professional practice, as reflected in:

a. three letters of recommendation from individuals able to comment on the applicant's achievements and potential for successful graduate work and professional practice in audiology; and
b. statement of purpose for seeking the degree.

Applicancy Requirements
Applicants must submit official transcripts of all previous undergraduate and graduate work, scores on the General Test of the Graduate Record Examination, TOEFL scores if necessary, three letters of recommendation, evidence of any professional certification or licensure, and written responses to a departmental questionnaire-application. Application is made through the Communication Sciences and Disorders Centralized Application Service (CSDCAS). Admission is based on evaluation of the requested credentials, the availability of doctoral committee members, and availability of practicum. Not every applicant who meets minimum admission requirements can be admitted; the department reserves discretion in admission of the most highly qualified applicants.

Although applicancy status is typically determined before students begin graduate study at Western Michigan University, the audiology faculty will conduct regular reviews of all doctoral students in audiology to monitor progress toward completion of the program. Any student not making satisfactory progress may be dismissed from the program with the approval of the department's Education and Coordinating Committee. The faculty review will consider grades, practicum performance, progress toward completion of the scholarly project, and demonstration of personal and professional characteristics suitable for professional practice in audiology.

Candidacy Requirements
For applicants with a bachelor's degree from an accredited college or university: Doctoral students should submit a permanent program of study form to their advisor prior to beginning the fourth year externship. At the beginning of the externship the student should have successfully completed the research tools requirement, all required course work, and the scholarly project. Exceptions will be considered on an individual basis. To be admitted to candidacy, the student must have satisfactorily earned or completed the following:
1. An overall grade point average of 3.0 or better;
2. Approval of the scholarly project. (The project advisor will award a final grade of credit or no credit for the project.) In the event of failure, the project may be revised and re-evaluated once, and this must be done within one term before the end of the internship;
3. All research tool requirements;
4. All course requirements other than professional field experience, and independent research;
5. A passing score on formative assessments associated with academic courses and practica;
6. A summative examination to be determined by the faculty (Examination for the ASHA Certificate of Clinical Competence in Audiology and/or an examination administered by the department with a passing score); and
7. A three-year residency (three years of full-time study).

For applicants holding a graduate degree with a master's degree in audiology from an accredited college or university: Candidacy requirements will be similar to those for applicants with a bachelor's degree, but the practicum requirements and the examination for the CCC-A will typically have been completed prior to enrollment in the Au.D. program.

Graduation Requirements
Most students will enter the program with a bachelor's degree. These students must complete 112 semester credit hours, including a minimum of 58 semester hours of classroom instruction, a minimum of six (6) credit hours in independent research, and 48-52 semester hours of practicum. Students must successfully complete the academic and practicum requirements for the American Speech-Language-Hearing Association's Certificate of Clinical Competence and/or state licensure.

A shorter program leading to the Au.D. is possible for students holding a master's degree earned from an accredited college or university and ASHA's Certificate of Clinical Competence in Audiology (CCC-A) or state licensure in audiology. Students who hold the master's degree will already have successfully completed the course and practicum requirements and have received a passing score on the examination for the ASHA CCC-A. The length of this shorter degree program, typically at least 40 and not more than 50 semester hours beyond the master's degree, will be determined by the advisor in consultation with the student and will depend upon the content and currency of the course work taken for the master's degree and the needs of the student. The typical program includes credits covering professional practice, research tools, independent research, and at least four credit hours of practicum.

Doctor of Audiology (Accelerated)
An audiology concentration in the B.S. in Interdisciplinary Health Services (IHS) program is available for Western Michigan University undergraduate students who wish to apply for the professional doctorate in audiology through an accelerated graduate degree program (AGDP). Undergraduate students with senior standing can take up to 12 credit hours of designated 5000 and/or 6000 level courses for graduate credit which can be counted toward both the Bachelor's degree and the graduate degree. The 12 credit hours in the AGDP would count toward the B.S. in IHS and toward the Au.D. program at Western.

The following graduate courses represent 12 credit hours to be taken in the fourth year of the IHS program by students in the AGDP, as well as by first year graduate students from other programs:

SPPA 6030 - Anatomy of Audition and Balance Credits: 2 hours
SPPA 6210 - Diagnostic Audiology I Credits: 4 hours
SPPA 6220 - Hearing Aids Credits: 3 hours
SPPA 5801 - Pediatric Audiology Credits: 3 hours

Another course in the Au.D. program, will be taken by undergraduates for 3 credit hours of undergraduate credit, counting toward the 122 hours required for the B.S. degree:

SPPA 5800 - Psychoacoustics Credits: 3 hours

Admission to the AGDP may occur during the third year of undergraduate study. Application must be made by the January 15 deadline, through the Graduate College and the Department of Speech, Language and Hearing Sciences during the Spring Semester of the third year of undergraduate study so that students will be eligible to take specified graduate courses in the following Fall Semester. Admission to the AGDP is competitive and is limited to the most qualified applicants. Students must complete the GRE and submit scores, as well as a personal statement and three letters of recommendation. Students must achieve a grade of "B" or better in each of the graduate courses being counted for the undergraduate degree, and students must maintain a minimum 3.0 GPA throughout their baccalaureate program. Students who successfully complete only the undergraduate portion of the AGDP will receive undergraduate credit for the 12 credit hours of 5000 and/or 6000 level courses selected for the AGDP. Students who successfully complete the Au.D. program will also receive graduate credit for those courses.

Interdisciplinary Programs – College of Health and Human Services

Doctor of Philosophy in Interdisciplinary Health Sciences

2584 CHHS Bldg.
Telephone: (269) 387-7990
Fax: (269) 387-8912

The Doctor of Philosophy in Interdisciplinary Health Sciences (I.H.S.) is designed to prepare Health and Human Service professionals for careers in research, teaching, and leadership. Several national commissions, including the Pew Health Professions Commission and the National Commission on Allied Health, have challenged higher educational institutions to respond to fundamental changes in health and related systems by designing more flexible curricula, removing disciplinary boundaries, and increasing research. The College of Health and Human Services has met this challenge by developing a three-strand curriculum - research, policy and service delivery, and pedagogy - all with a focus on interdisciplinary approaches to problem solving. In order to meet the needs of working professionals, the courses are delivered through a hybrid of e-learning modalities and intensive on-campus weekend and summer sessions. Students enter the program as a cohort once every two years (in even years) and can complete the didactic sequence in two years. Comprehensive examinations and dissertation research can be completed in an additional two to three years.

Admission requirements
Students are admitted to the program as a cohort every two years, in even numbered years, based on a competitive written application and face-to-face interview process. Applicants to the program are expected to meet, at a minimum, the entrance requirements of the Graduate College and to document:
1. Two years of professional experience in a field relevant to health and human services.
2. Master's degree with a minimum graduate grade point average of 3.25/4.00.
3. Completion of the Graduate Record Examination.
4. Completion of at least one graduate level course in statistical methods, with a minimum of a grade B within the past 10 years (can be completed after acceptance and prior to first enrollment).
5. Computer competency in databases, word-processing, spreadsheets, and Internet use.

Application must be made through the WMU online graduate application system. This allows all students (domestic and international) to submit required information into one system. The PhD program in Interdisciplinary Health Sciences uses a competitive admissions process, based on information provided about the student's academic and clinical background, and content and writing skills observed in their narrative statements. Letters of recommendation from three academic or professional sources also are required. Finalists participate in on-campus interviews. Approximately 12 applicants are invited to enroll with each cohort, including no more than three from any one discipline.

Program Requirements
Required courses are presented in sequential order, so that the didactic portion of the curriculum can be completed in two years. Students are required to:

1. Attend a week-long, on-campus Orientation session in Summer II session of the student's year of admission during which they are familiarized with the program expectations and the University's resources and complete their first course (IHS 6240).

2. Complete, with a 3.25 grade point average, a total of 64 semester hours of credit as follows:

Research and Statistics Courses (25 hours)
IHS 6240 - Scientific Inquiry in Interdisciplinary Health Sciences Credits: 1 hour

IHS 6300 - Designing and Conducting Health and Human Services Research Credits: 3 hours
IHS 6280 - Statistics I in Interdisciplinary Health Sciences Credits: 3 hours
IHS 6360 - Statistics II in Interdisciplinary Health Sciences Credits: 3 hours
IHS 6310 - Grant Proposal Development and Management Credits: 3 hours
IHS 6260 - Qualitative Research Concepts in Interdisciplinary Health Sciences Credits: 3 hours
IHS 6350 - Evidence-Based Practice and Interdisciplinary Research in Health and Human Sciences Credits: 3 hours
IHS 7350 - Research Practicum Credits: 1 to 6 hours Credits: 6 hours needed

Policy and Service Courses (9 hours)
IHS 6250 - Health and Human Services Organization and Delivery Systems Credits: 3 hours
IHS 6270 - Health and Human Services Policy and Politics Credits: 3 hours
IHS 6330 - Ethics and Law in Health and Human Services Credits: 3 hours

Pedagogy Courses (8 hours)
IHS 6290 - College Instruction and Assessment Credits: 2 hours
IHS 6320 - Innovative Pedagogy and Instructional Design Credits: 3 hours
IHS 7130 - Practicum in College Teaching in Health and Human Services Credits: 3 hours

Pre-dissertation Seminar (1 hour)
IHS 6970 - IHS Pre-Dissertation Seminar Credits: 1 to 6 hours Credits: 1 hour needed

Dissertation Research (12 hours)
IHS 7300 - Doctoral Dissertation Credits: 1 to 12 hours Credits: 12 hours needed

*Total 64 hours***
**Note that this is the minimum number of hours to complete the program. Students are required to maintain residency by enrolling in at least one credit hour per session or semester after completing the required course sequence at the end of summer II session beginning their third year in the program. If they take longer to complete their comprehensive examinations or dissertation, they will take more than 64 hours to complete the degree.

3. Successfully complete a 4-part Comprehensive Examination.
Comprehensive examinations are performance-based and include the submission of (1) a research paper for publication, (2) policy analysis (with oral defense), (3) competitive grant proposal, and (4) teaching portfolio describing development and delivery of a university level course.

4. Maintain residency after completing all required academic courses by registering for at least one credit hour of pre-dissertation seminar (IHS 6970) or, if eligible, dissertation (IHS 7300) every semester including both summer sessions until graduation, starting in fall semester at the beginning of the third year following admission to the program.

5. Successfully complete a doctoral dissertation.
The dissertation entails completion, written documentation, and oral defense of a research project approved by the student's dissertation committee. Students may elect to use the traditional five-chapter format or prepare three stand-alone journal articles with an introduction and conclusion chapter to constitute the five chapter dissertation.

Financial Assistance
The College of Health and Human Services offers financial support through half-time doctoral research associateships for a limited number of students during their academic coursework. Contact the program director for details.

Certificate Program in Alcohol and Drug Abuse
C. Dennis Simpson, Director
Room 2400, College of Health and Human Services
Telephone (269) 387-3340

Advising
Room 2125, College of Health and Human Services
Telephone (269) 387-2656

Western Michigan University's Specialty Program in Alcohol and Drug Abuse (SPADA) provides professional education for all those who are interested in the substance abuse field. Multidisciplinary in nature, SPADA provides a balanced orientation to theory and practice, considers a breadth of contemporary issues, and emphasizes a variety of methods for dealing with the problems of substance abuse.

SPADA offers a Graduate Certificate in Alcohol and Drug Abuse which can be earned as an independent certificate or can be used to supplement graduate education in related fields such as biological sciences, counseling psychology, occupational therapy, psychology, public administration, social work, and sociology, as well as other related disciplines. Specifically, the graduate certificate may be earned in one of three ways; as a post-baccalaureate certificate, in conjunction with a graduate degree, or to complement an earned graduate degree. Courses are offered at the main campus as well as the regional locations of Grand Rapids, Lansing, and Traverse City. For more information about which courses are being offered, please visit the websites for these perspective regional locations. Courses are also offered online. Please visit the website of Extended University Programs for information about which courses are being offered.

Graduates of SPADA are prepared to serve the profession in ways that address the personal, social and economic costs of the use and abuse of psychoactive substances.

Required Courses: 21 credit hours
ADA 6110 – Physical Aspects of Addictive Drugs Credits: 3 hours
ADA 6115 – Applied Neuropsychopharmacology of Addictive Drugs Credits: 3 hours
ADA 6330 – Diversity and Ethical Issues in Addictions Credits: 3 hours
ADA 6700 – Field Practicum Credits: 3 hours

Select one of the following:
ADA 6060 – Causes of Substance Abuse Credits: 3 hours
or
CECP 6340 – Causes of Substance Abuse Credits: 3 hours
or
SWRK 6530 – Causes of Substance Abuse Credits: 3 hours

Select one of the following:
ADA 6340 – Recovery Oriented Systems of Care Credits: 3 hours
or
CECP 6360 – Recovery Oriented Systems of Care Credits: 3 hours
or
SWRK 6550 – Recovery Oriented Systems of Care Credits: 3 hours

Complete one of the following three course options:
ADA 6400 – Co-Occurring Disorders and Addictions Credits: 3 hours
ADA 6410 – Addiction in Family Systems Credits: 3 hours
ADA 6420 – Clinical Supervision of Addiction Services Credits: 3 hours

Graduate College

Susan Stapleton
Dean

Christine Byrd-Jacobs
Associate Dean

The Graduate College offers a wide variety of programs leading to the master's, specialist, and doctoral degrees.

Accelerated degree programs allow eligible students the opportunity to complete both an undergraduate degree and a master's degree in less time because the student may begin taking graduate courses while still an undergraduate. During their senior year of their undergraduate careers, students in the accelerated program may substitute up to 12 credit hours of graduate course work for undergraduate course work. Once they enter graduate school, they're able to quickly move through their master's degree (or Au.D.) requirements because they've already taken several graduate classes. Accelerated degrees are offered for the following master's programs: Aerospace Engineering; Blindness and Low vision Studies – Orientation and Mobility; Chemical Engineering; Civil Engineering; Communication; Computer Engineering; Computer Science; Earth Science; Electrical Engineering; Family and Consumer Sciences; Industrial Engineering; Mechanical Engineering; Music; Paper and Printing Science; Spanish; Statistics; and Vision Rehabilitation Therapy. The Au.D. in Audiology is also offered as an accelerated program.

The Master of Arts is awarded in the following programs: Art Education; Biological Sciences; Career and Technical Education; Coaching Sport Performance; Communication; Comparative Religion; Counseling Psychology; Counselor Education; Earth Science; Economics, Applied; Educational Foundations; Educational Leadership; Educational Technology; English; Evaluation, Measurement, and Research; Family and Consumer Sciences; History; Literacy Studies; Mathematics; Mathematics Education; Medieval Studies; Music; Organizational Learning and Performance; Orientation and Mobility; Philosophy; Physical Education; Physics; Political Science: Practice of Teaching; Psychology; Science Education; Sociology; Spanish; Special Education; Special Education and Orientation and Mobility; Speech; Spirituality, Culture and Health; Sport Management; Teaching: Teaching Children With Visual Impairments and/or Orientation and Mobility; Teaching English to Speakers of Other Languages; and Vision Rehabilitation Therapy.

The University also offers the Master of Science in the following areas: Accountancy; Aerospace Engineering; Applied and Computational Mathematics; Athletic Training; Biological Sciences; Chemical Engineering; Chemistry; Civil Engineering; Computer Engineering; Computer Science; Electrical Engineering; Engineering Management; Exercise Physiology; Geography; Geosciences; Industrial Engineering; Manufacturing Engineering; Mechanical Engineering; Nursing; Occupational Therapy; Paper and Printing Science; Physician Assistant; and Statistics.

Other master's degrees include Social Work (MSW); International Development Administration (MIDA); Public Affairs and Administration (MPA); Public Health (MPH).

In addition:

The Specialist in Education is offered in Educational Leadership.

The Doctor of Education is offered in Special Education.

The Doctor of Audiology is offered in Audiology.

Joint Juris Doctor and Master of Public Administration degrees are offered in partnership with the WMU Thomas M. Cooley Law School.

The WMU Homer Stryker M.D. School of Medicine offers an M.D. Degree.

The Doctor of Philosophy is offered in Biological Sciences; Chemistry; Collegiate Math Education; Computer Science; Counseling Psychology; Counselor Education; Economics, Applied; Education and Human Development; Educational Leadership; Electrical and Computer Engineering; Engineering and Applied Sciences; English; Evaluation (Interdisciplinary); Evaluation, Measurement, and Research; Geosciences; History; Industrial Engineering; Interdisciplinary Health Sciences; Interdisciplinary Studies; Mathematics; Mathematics Education; Mechanical Engineering; Paper and Printing Science; Physics; Political Science; Psychology; Public Administration; Science Education; Sociology; Spanish; and Statistics.

Graduate certificate programs are offered in the following areas: Alcohol and Drug Abuse; Applied Hydrology; Applied Statistics-Interdisciplinary, BioStatistics; Early Childhood Special Education; Educational Technology; English as a Second Language; Geographic Information Science; Gerontology; Higher Education and Student Affairs; History of Monastic Movements; Integrative Holistic Health and Wellness; Learning for Sustainability; Low Vision Rehabilitation for the Occupational Therapist; Music Performance; Positive Behavioral Intervention and Supports (PBIS); and Spirituality, Culture and Health.

Please refer to the Graduate Catalog for further information on these programs, as well as on admission and graduation requirements. Or visit the Graduate College website http://www.wmich.edu/grad.

Interdisciplinary Programs – Graduate College

Doctor of Philosophy in Evaluation

The Doctor of Philosophy in Evaluation is a collaborative effort of four colleges – Arts and Sciences, Education and Human Development, Engineering and Applied Sciences, and Health and Human Services - to address society's growing need for Ph.D.-level evaluation specialists who can serve effectively in a variety of disciplines. Society's organizations need evaluation professionals to identify and assign priorities to unmet needs; assess progress and identify areas requiring improvement; assess costs and seek ways to make services more efficient and cost-effective; document and assess outcome; provide credible reports to accrediting/oversight bodies; and, in general, maintain accountability.

Selection criteria for admission applications are academic ability, ability to handle the nontechnical aspects of evaluation, a strong desire to become a "thought leader" in evaluation, a specific interest in the interdisciplinary setting we offer (rather than simply an interest in one of the cognate areas offered), a desire to be challenged, a commitment to (and interest in) being engaging in hands-on learning in evaluation, and ability to follow instructions.

Graduating students will receive their degree from one of the four participating colleges. Each student will tailor their program of study to meet her or his assessed needs and interests, drawing from all courses and other learning experiences available in the four colleges. While each specific course in a student's program may vary from another student's, each student's curriculum will be designed to ensure that the student meets a common set of core competencies in evaluation.

A major focus of the interdisciplinary program will be to develop thought leaders in evaluation, individuals with deep knowledge of evaluation theory, methodology, and practice, with superior skills in practical and critical thinking, and a knack for seeing opportunities for innovation and improvement.

To access the online application for admission, go to: www.wmich.edu/apply/graduate. To access a complete list of admission requirements in pdf format, go to www.wmich.edu/grad/admissions/ click on "Doctorate" and "Evaluation (Ph.D.)" from the drop down menus.

Admission Requirements
All information is to be submitted only within the online application system.

- Application deadlines: Fall semester: June 1; Spring semester: October 1; Applications must be received by February 1 for consideration for graduate assistantship.
- A resume or curriculum vita (CV) is required.
- This program requires the General GRE.
    - Note: International applicants may have to provide evidence of English language proficiency. More information can be found within the online application.
- This program requires three recommendations. Please send email requests for such recommendations from within the online system.
- Provide a written statement that covers the following information, and attach it within the online application: Summarize your experiences in academic, professional, research, creative, or scholarly activities and indicate how these experiences make you an ideal candidate for graduate study in your selected program. Also address how these activities align with the strengths of your chosen program and faculty, and with your professional goals, including future job positions. This statement (double-spaced and between 500 – 1500 words) should demonstrate your communication skills and writing competence.
- Previous written work: provide one (1) writing sample, to be attached within the online application.
- Other program materials: Complete this program's supplemental application program form at: http://www.wmich.edu/grad/admissions/dept-forms/eval-int-reqs.pdf, save it using your last name in the document name, and then submit the saved document within the online application.

Additional information: If you have questions, please review the website at http://www.wmich.edu/evalphd/ for program and contact information.

Program Requirements

General Requirements
In order to graduate, you will need to have:
1. Completed at least 90 hours of course work beyond the baccalaureate, with a GPA of 3.25 or better (up to 36 hours may be transferred in from master's level course work on which the student earned a grade of B or better; in exceptional cases an additional 12 units may be transferred in if the student has completed significant study beyond the master's degree). The course work must include:

- 18-21 credit hours in an approved cognate area
- 12-18 credit hours of research methods courses (no more than 3 units at the basic graduate level)
- 35-39 hours of evaluation courses, including, 5-7 hours of required interdisciplinary evaluation courses; 3-6 hours of program/intervention evaluation; 3-6 hours covering the social, political, and cultural context of evaluation; 12-18 hours of specialized evaluation-related courses; and 9 hours of practical evaluation field experience

2. Passed the comprehensive examination (covering the competencies listed later on this page).
3. Completed successfully a minimum of 12 hours of doctoral dissertation study.
4. Written and successfully defended a dissertation that advances the theory, methodology, and/or practice of evaluation.
5. Demonstrated competency in the two required research tools for this program: needs assessment and evaluation. (Students will fulfill this requirement by completing an entire evaluation of a program, policy, system, organization, intervention, or project according to specifications agreed to with the program director. This requirement will usually be fulfilled as part of the practical experience; however, other options are possible in exceptional cases.)
6. Complied with the program's residency enrollment requirements.
7. Received unanimous agreement by the dissertation committee that you have met all the requirements for achieving the Doctor of Philosophy degree.

Competencies
Each student will be required to demonstrate knowledge of general evaluation theory, methodology, and practice issues, as well as the ability to apply evaluation to his/her chosen area(s) of specialization. The minimum required competencies in evaluation (and brief explanations) are listed below. Specific colleges may have additional requirements.

- Evaluation-Specific Logic and Methodology (definition of relevant values, needs assessment, generation of comprehensive criterion checklists, checklist methodology, setting standards, use of evaluative rubrics, synthesis of findings on multiple criteria, ranking vs. grading vs. scoring, subjectivity/arbitrariness vs. use of expert judgment, bias vs. preference)
- Evaluation Theory and Models/Approaches (descriptive research vs. true evaluation, goal-based/ management-oriented vs. goal-free/consumer-oriented, expert judgment-based, participatory/empowerment vs. independent, theory-based/explanatory, evaluative inquiry, CIPP Model)
- Social, Political, and Cultural Context of Evaluation (psychology of evaluation, politics of evaluation, “kill the messenger,” stakeholder analysis, diversity and multicultural issues)
- Evaluation Planning, Budgeting, Contracting, and Management (defining key tasks, estimating costs, market-based pricing, use of contracting checklists, project management)
- Database Design and Management (setting up a database; use of Excel, Access, and SPSS or SAS; merging data files; generating reports; running analyses)
- Evaluation Reporting and Utilization (effective analysis of client information needs, appropriate communication strategies for different audiences, report writing and layering, oral presentation skills, linking evaluation to decision making, maximizing evaluation utility)
- Meta-evaluation and Evaluation Standards (use of professional standards and checklists for evaluation and meta-evaluation)
- History and Nature of the Evaluation Profession (the roots of the evaluation profession, its development to date, future directions)

Open to Graduate Students Only
EVAL 6000 - Foundations of Evaluation Credits: 3 hours

EVAL 6010 - Interdisciplinary Seminar in Evaluation Credits: 1 hour
EVAL 6970 - Advanced Evaluation: Variable Topics Credits: 1 to 3 hours
EVAL 7100 - Independent Research Credits: 2 to 6 hours
EVAL 7110 - Readings in Doctoral Specialization Credits: 3 hours
EVAL 7120 - Professional Field Experience Credits: 2 to 9 hours
EVAL 7300 - Doctoral Dissertation Credits: 1 to 12 hours

Practical Evaluation Experience
Students must complete 9 credit hours of practical evaluation experience (usually all EVAL 7120; may include 3 units of EMR 6520). This typically involves taking a series of increasingly challenging roles on Evaluation Center projects as the student progresses through his or her degree. Top students will have the experience of directing a nationally significant project before they leave WMU. This hands-on learning will enable students graduating from the program to "hit the ground running" as competent practitioners.

Doctor of Philosophy in Interdisciplinary Studies
Advisor: Susan Stapleton, Graduate Dean, or designee

The interdisciplinary doctorate degree offers flexibility to students with interests outside existing academic boundaries and established programs. The degree is housed in the Graduate College and combines coursework and research in two or more disciplines/programs and may involve more than one college. Each of the disciplines/programs must offer graduate coursework, and at least one of the programs must offer a doctorate. The proposed program of study cannot be available in an existing program. Transcript and diploma will indicate Ph.D. in Interdisciplinary Studies. Additional information may be obtained from the Graduate Dean.

Admission Requirements
Application materials may be obtained from the WMU Admissions Office website:
http://www.wmich.edu/apply/graduate.

The following application materials are required for regular admission to the Interdisciplinary Studies Ph.D. degree program:

1. Bachelor's or master's degree with a minimum grade point average of 3.25/4.00
2. Completion of the general Graduate Record Examination
3. Current curriculum vita
4. Statement of purpose outlining the proposed study plan reflecting the interdisciplinary nature of the degree. The student must consult faculty members in the disciplines involved for guidance. The program of study must justify the need for an interdisciplinary studies program and should address the potential career placement after degree completion.
5. Names of at least two faculty members in the areas of proposed study who have agreed to participate must be listed in the statement of purpose; at least one of these faculty members must consent to serving as dissertation chair. Student must get consent from these faculty members before listing them and these faculty members must obtain the consent of their department chair before agreeing to participate in the supervision of an interdisciplinary studies doctoral student.
6. Three letters of recommendation that address the academic qualifications for the degree program
7. Copies of all transcripts as required by Western Michigan University

Admission decisions will be made by a committee consisting of the graduate dean or designee, at least one faculty member from each of the areas of proposed study, and the department chairs from the areas of proposed study. If an applicant has been dismissed from another doctoral program at WMU prior to applying for the Interdisciplinary Studies Ph.D. degree, a review of their credentials will include evaluation of evidence of personal and academic improvements since the dismissal.

Program Requirements
1. The Interdisciplinary Studies Doctorate requires at least 60 credit hours, with a GPA of 3.25 or better. Students with a relevant master's degree may petition to the Graduate Dean to transfer some credits on their permanent program of study form, but no less than 30 credits plus dissertation credits are taken after admission to the Ph.D.

program. At least half of the credits must be 6000-level or above. At least six hours of 6000-level coursework in each of at least two departments is required. The coursework must include the following:

- A minimum of 32 credit hours of subject knowledge, including at least two classes from each of two or more disciplines/programs.
- At least one credit hour of ethics, which may be offered through an online module.
- At least 15 credit hours of training in research methodology, including research method courses, graduate research credit (GRAD 7350), and demonstrated proficiency in two research tools.
- 12 hours of dissertation credits (GRAD 7300).

2. Supervision of the program of study and research project by a dissertation committee consisting of at least four members from at least two different disciplines/departments, including the dissertation chair or co-chairs. An external member from outside WMU may be included. The dissertation chair or co-chairs and committee will ensure that the standards for their disciplines are met.

3. Successful completion and defense of a research proposal, and other requirements for a comprehensive exam as determined by the disciplines, for advancement to candidacy. The dissertation chair or co-chairs and committee will ensure standards for their disciplines are met.

4. Completion of a dissertation that involves original research that crosses disciplinary boundaries.

5. The student and the dissertation committee will meet at least annually to review the student's progress.

6. Successful oral defense of the dissertation and approval by the dissertation committee.

Certificate Program in Learning for Sustainability (16 credit hours)

The Certificate Program in Learning for Sustainability (LfS) is designed to develop competencies needed to wrestle with complex real-world problems and sustainability challenges. Students will be engaged in learning how to explore the complexity of human cares and situate that inquiry in the context of factors impacting quality of life and the state of the planet. Participants will develop new skills in systems thinking and modeling; understanding and evaluating the ecological and social impacts of transport, housing, energy, food, water, forestry, healthcare, financial, and manufacturing systems; critical and anticipatory thinking; mindfulness; awareness of place; empathy; problem posing and problem solving; planning and decision-making; designing and evaluating interventions to enhance well-being (products, policies, social innovations, enterprises, etc.); transformative change; collaboration; and social learning.

The Certificate Program in Learning for Sustainability is open to all WMU graduate students who wish to augment their program of studies and anyone possessing an undergraduate degree that seeks expertise in sustainability studies (as a stand-alone certificate). The program is designed to dovetail with existing masters and Ph.D. programs and serve as a catalyst for real-world problem solving focused on fundamental conditions impacting the quality of life. Designed to facilitate faculty and student engagement from diverse areas of specialization, the program is intended to draw upon the knowledge and wisdom of all disciplines and to serve as a new model for university-community collaboration and social learning. Centered in the Graduate College, the program functions as a living, learning laboratory for the development of new approaches for teaching and learning about sustainability concepts and principles; design and rapid prototyping of social innovations; design, evaluation, and marketing of green products and services; quality of life/well-being research; modeling, simulating, and testing promising policies; creating public-private partnerships; catalyzing transformative change and collective impact; and training. It is also intended to serve as a regional incubator for those seeking to develop the competencies needed to explore the challenges and promise of a sustainable future, and to contribute to the growth and renewal of vital connections across and between both the academic and wider communities.

The certificate program features a unique approach to cross-college collaboration that draws on best practice research of leading sustainability graduate programs and global research on sustainability core competencies. It will employ evidence-based research, structured learning outcomes, and reflective assessment to facilitate continuous improvement. The program includes one course in the College of Education and Human Development involving philosophical perspectives on education and human flourishing, and two interdisciplinary courses housed in the

Graduate College, which are focused on fundamental dimensions of learning and decision-making that impact efforts to advance improving quality of life for all. In addition, each student will take one elective course from an extensive list of existing cross-college options, typically aligned with each student's area of specialization and graduate study (if they are pursuing an advanced degree). Students will also complete a one credit hour interdisciplinary problem-posing seminar, where they will collaborate in generating, refining, and incubating proposals for sustainability oriented, action research projects. The program culminates in completion of a three credit hour action research-oriented practicum (which for some students will inform or align with ongoing masters or Ph.D. program studies and research).

Admission Requirements

Admission is open to students currently enrolled in graduate programs across the university that meet the requirements below. In addition, post-baccalaureate students unaffiliated with a graduate program may be admitted if they meet the requirements below.

1. Bachelor's degree from an accredited institution.
2. A copy of the applicant's undergraduate transcript.
3a. If currently enrolled in an accredited WMU graduate degree program, the applicant must have a letter of support from their advisor.
3b. If not currently enrolled in an accredited WMU graduate degree program, the applicant must have a letter of support from their employer or someone familiar with their academic or work background.
4. A concise written "statement of purpose" (250 words or less) that outlines the applicant's interest in sustainability and how this certificate's learning outcomes advance their career goals.
5. Congruence of applicant's written "statement of purpose" with the parameters of this degree program.

Program Requirements

The certificate program consists of six classes (16 credit hours):

Required Courses (13 credit hours)

ES 6330 - Education and Human Flourishing Credits: 3 hours
GRAD 6500 - The State of the Planet: Cares and Flourishing in Context Credits: 3 hours
GRAD 6550 - Wise Decision-making: Problem Posing, Problem Solving, and Systems Learning Credits: 3 hours
GRAD 6600 - Interdisciplinary Seminar in Learning for Sustainability Credits: 3 hours
GRAD 6650 - Practicum in Learning for Sustainability Credits: 3 hours

Electives (3 credit hours)

Graduate-level course from student's area of specialization or graduate program Credits: 3 hours

Course Descriptions
By College

Guide to Prefixes	
A-S	College of Arts and Sciences
ACTY	Accountancy
ADA	Alcohol and Drug Abuse
AE	Aerospace Engineering
AFS	Africana Studies
ANTH	Anthropology
APSC	Applied Sciences
ARAB	Arabic
ART	Art
AVS	Aviation Sciences
BCM	Business Communication
BIOS	Biological Sciences
BLS	Blindness and Low Vision Studies
BUS	Business
CCE	Civil and Construction Engineering
CECP	Counselor Education and Counseling Psychology
CEHD	College of Education and Human Development
CFA	College of Fine Arts
CHEG	Chemical Engineering
CHEM	Chemistry
CHIN	Chinese
CHP	Chemical Engineering
CIS	Computer Information Systems
COM	Communication
CORP	Community and Regional Planning
CS	Computer Science
CTE	Career and Technical Education
DANC	Dance
ECE	Electrical and Computer Engineering
ECON	Economics
ED	Teaching, Learning and Leadership
EDLD	Educational Leadership
EDMM	Engineering Design, Manufacturing, and Management Systems
EDT	Educational Technology
EM	Engineering Management
EMR	Evaluation, Measurement and Research
ENGL	English
ENGR	Engineering and Applied Sciences

ENVS	Environmental Studies
ES	Educational Studies
EVAL	Evaluation Center
FCL	Finance and Commercial Law
FCS	Family and Consumer Sciences
FIN	Finance and Commercial Law - Finance
FREN	French
FYE	First Year Experience
GEOG	Geography
GEOS	Geosciences
GER	German
GIST	Global and International Studies
GPS	Graphic and Printing Science
GRAD	Graduate College
GREK	Greek
GRN	Gerontology
GWS	Gender and Women's Studies
HIST	History
HNRS	Honors College
HOL	Holistic Health Care
HPHE	Human Performance and Health Education
HSV	Health Services
IEE	Industrial and Entrepreneurial Engineering
IHS	Interdisciplinary Health Sciences
IME	Industrial and Manufacturing Engineering
INTL	International and Global Studies
IPE	Interprofessional Education
ITAL	Italian
JPNS	Japanese
JRN	Journalism
LANG	World Languages and Literatures
LAT	Latin
LAW	Finance and Commercial Law - Law
LS	Literacy Studies
LWIR	Lewis Walker Institute for Race and Ethnic Relations
MATH	Mathematics
MDSC	Medical Science
MDVL	Medieval Institute
ME	Mechanical Engineering

MFE	Manufacturing Engineering
MGMT	Management
MKTG	Marketing
MPH	Master of Public Health
MSE	Materials Science and Engineering
MSL	Military Science and Leadership
MUS	Music
NUR	Nursing
OCL	Organizational Change and Leadership
OLP	Organizational Learning and Performance
OT	Occupational Therapy
PADM	Public Affairs and Administration
PAPR	Paper Engineering, Chemical Engineering, and Imaging
PEGN	Health, Physical Education and Recreation
PH	Public Health
PHIL	Philosophy
PHYS	Physics
PSCI	Political Science
PSY	Psychology
REL	Comparative Religion
RUSS	Russian
SCI	Science Education
SIGN	American Sign Language
SOC	Sociology
SPAN	Spanish
SPED	Special Education
SPPA	Speech Pathology and Audiology
SPSY	School Psychology
STAT	Statistics
SWRK	Social Work
TEL	Teaching English Learners
THEA	Theatre
UNIV	University Curriculum
WFED	Workforce Education and Development

College of Arts and Sciences

African American and African Studies

AAAS 5100 Foundational Theories in Diversity Leadership The course focuses on developing an understanding of diversity and difference, power and privilege, and oppression. Emphasis will be given on understanding of one's self within these systems as an essential foundation for culturally competent practices in any environment. Students will learn: (i) systems that maintain differential access to power and privilege at the expense of marginalized others, (ii) skills for understanding and interrogating their own multiple social identities (i.e., social locations), (iii) knowledge and skills for appropriate training practices in bias, (iv) strategies for interrupting systems of oppression and other ways to work for the core value of social justice. Students may enroll in their junior or senior year or as part of a graduate program. There are no prerequisites, however, students are encouraged to contact their advisor or the instructor of record before enrolling to make sure this is a good fit. May be repeated for credit. Open to upperclass and graduate students. 3 hours

Anthropology

ANTH 5000 Topics in Archaeology A consideration of the prehistory of a particular geographic area (e.g., the southwestern United States, the Circumpolar) or of selected theoretical problems (e.g., artifact typology, prehistoric ecology). The topic to be studied will be announced each semester. May be repeated for credit under different topics. Open to upperclass and graduate students. 3 hours

ANTH 5030 Anthropology in the Community Students in the course apply anthropological methods and understandings to a community based research and/or service project. The focus of the class rotates among different sites and topics depending upon the semester it is offered. The experiential learning component of this course facilitates student understandings about the relevance of anthropology to problems and projects outside of the university setting and strengthens community connections with the university. May be repeated for credit. Open to upperclass and graduate students. 4 hours

ANTH 5040 Archaeological Research Methods An in-depth exploration of archaeological research methods, emphasizing how archaeologists analyze and interpret the material record. Students learn the complexity of archaeological methods through a practice oriented approach to topics such as research design, sampling, typology, classification, database management, lithic, ceramic, faunal and floral analytical techniques, archaeological illustrations, writing, curation, and collections management. Open to upperclass and graduate students. Prerequisite: ANTH 2100 3 hours

ANTH 5060 The Archaeology of Gender Gender constructs, a critical organizing principle for human interaction, are becoming an important focus for archaeological investigation. This course will explore the multiple ways archaeologists have attempted to use gender relations as a means to gain insights into individual societies. We will follow gender as an archaeological concept historically and conceptually. Participants will explore the attempts and successes of a gendered understanding of the archaeological record. Open to upperclass and graduate students. 3 hours

ANTH 5090 Cultural Resource Management Archaeology Cultural Resource Management is an important aspect of modern American archaeology; it is in this context that most sites are excavated, archaeological data is collected, and where most archaeologists work. The goal of this course is to consider larger issues of Historic Preservation and Cultural Resource Management in archaeology by focusing on topics including the history, politics, and legal structure of preservation, the structure and practical realities of the CRM industry, looting, public presentation and outreach, global heritage, and heritage tourism. Open to upperclass and graduate students. Prerequisite: ANTH 2100 3 hours

ANTH 5220 Poverty, Power, and Privilege This course critically explores anthropological approaches to understanding poverty as well as racial, class, and sexual inequalities. The course emphasizes inequalities within the contemporary United States, but situates those dynamics within an analysis of global processes and conditions. Particular emphasis is placed on analyzing ways that everyday practices, neoliberal social policies, economic restructuring, resistance efforts, and institutional practices play in producing, challenging, and

maintaining structural violence. Feminist, post-structuralist, Marxist, cultural studies, and hegemony studies approaches are covered. Both ethnographic case studies and theoretical analysis are explored to inform collaborative required applied community based anthropological research on power, race, and class relations within the Kalamazoo region. Open to upperclass and graduate students. 3 hours

ANTH 5250 Spirits and Medicine This course explores how healing is linked to belief and in turn how beliefs about well-being, illness, and treatment are culturally prefigured. Students will examine healing practices in the United States and cross-culturally as they relate to belief and consciousness, including western medicine and alternatives, spirit possession and trance, and methods of divination. Open to upperclass and graduate students. 3 hours

ANTH 5300 Research Methods An in depth consideration of the research methods and tools of the modern anthropologist. An emphasis on methods and techniques of data collection, statistical analysis, and graphic presentation of a wide variety of anthropological data. Open to upperclass and graduate students. 3 hours

ANTH 5330 Museums and Material Culture This course comprises: a critical consideration of museum practices, including processes of collection, archives, and exhibition; and critical approaches to material culture more broadly. It is also meant to be an exploratory course, dependent on full engagement between participants – instructor as well as students. We will be actively engaged in a process of discovery in terms of how to understand objects in cultural and historical context, how to critically interrogate a variety of anthropological approaches to objects over time, and how to understand anthropology's responsibility to the public through museum practices. Open to upperclass and graduate students. Prerequisite: ANTH 2100 3 hours

ANTH 5400 Ethnographic Research Methods An exploration of the complexity of ethnographic research methods through a practice oriented approach to training in ethnographic approaches. Students learn a range of qualitative research methods as well as the political, ethical, methodological, and theoretical dilemmas of anthropological fieldwork and writing through supervised fieldwork projects as well as classroom assignments. Open to upperclass and graduate students. 3 hours

ANTH 5450 Topics in Sociocultural Anthropology An intensive study of the cultures of an area of the world or selected problems. Topic will be announced each semester. May be repeated for credit. Open to upperclass and graduate students. 3 hours

ANTH 5500 Human Evolution This course is designed to provide students with an intensive examination of the human fossil record from the initial divergence of the hominid lineage to the origin of modern Homo sapiens. Emphasized in this course will be paleontological theory, issues relating to species definition and recognition, functional anatomical complexes, adaptive processes, and human morphological variation. Open to upperclass and graduate students. 3 hours

ANTH 5550 Topics in Biological Anthropology A consideration of the biological relationships of specific population groups or general problems in human biology (e.g., human genetics, human growth and constitution, palaeopathology, dental anthropology). Topic will be announced each semester. May be repeated for credit. Open to upperclass and graduate students. 3 hours

ANTH 5900 Anthropology as a Profession The course provides a survival guide for the world of professional anthropology. Students will develop the core skills needed to work in academia or applied fields. These skills include creating and maintaining a CV and resume; grant-writing; developing research designs; literature reviews; thesis research; writing proposals; oral and written presentations of research; publication of books; articles and reports; negotiating with ethics boards and other bureaucracies; teaching pedagogy; and course development. The goal of this course is to prepare students to use their anthropological training in whatever career trajectory they hope to pursue; university settings or applied fields such as museums, Cultural Resource Management firms, forensics laboratories, non-profit organizations, etc. Open to upperclass and graduate students. Prerequisites: Junior standing and 12 hours of coursework in Anthropology or instructor approval. 3 hours

ANTH 6010 Seminar in Cultural Anthropology Intensive study of contemporary issues in sociocultural theory. May be elected as a graduate cognate course by students in other disciplines. Open to graduate students only. Restricted to Masters in Anthropology. Prerequisite: Instructor approval. 3 hours

ANTH 6020 Seminar in Archaeology Advanced study in the major problem areas of prehistoric research. May be elected as a graduate cognate course by students in other disciplines. Open to graduate students only. Restricted to masters in Anthropology. Prerequisite: Instructor approval. 3 hours

ANTH 6030 Seminar in Biological Anthropology Advanced instruction and research in the principal problem areas in biological anthropology. May be elected as a graduate cognate course by students in other disciplines. Open to graduate students only. Restricted to Masters in Anthropology. Prerequisite: Instructor approval. 3 hours

ANTH 6040 Integrating Anthropology This course provides an integrative introduction to major themes that cross-cut the anthropological sub-disciplines. Topics such as the evolution of language, Marxist thought, or race and racism will be explored through a combination of guest lectures, readings of primary literature, and seminar-style discussions. Students will be encouraged to explore the nature of anthropological inquiry and to find the linkages between cultural, biological, and archaeological anthropology. Open to graduate students only. Restricted to Masters in Anthropology. Prerequisite: Graduate standing in anthropology. 3 hours

ANTH 6090 Ethnohistory Seminar Ethnohistory is the study of cultures combining research techniques and theoretical approaches from the fields of history and anthropology. This course will survey ethnohistorical research on a hemispheric level, including the United States, Canada, Mexico, Central and South America. We will read works in the areas of culture contact, colonialism, material analysis, historiography, oral history, gender, historical archaeology, ethnography, tribalization, globalization, and modernization. The core of ethnohistory lies in the realization shared by practitioners of the benefits obtained through the use of multiple lines of evidence to study history and culture. Ethnohistorians recognize that documents, archaeological findings, oral histories, and ethnographies can be profitable compared, contrasted, and integrated to elucidate the histories and cultural contexts of groups that have been ignored in conventional historical accounts. Thus, interdisciplinary study is incumbent in ethnohistory. By juxtaposing multiple lines of evidence, the ethnohistorian can at once examine the distant and the local, the general and the particular, bringing human experience into better focus. May be repeated for credit. Cross-listed with HIST 6090. Open to graduate students only. 3 hours

ANTH 6200 Anthropological Theory Students are introduced to anthropological theory as a means of raising questions that are significant to the social sciences in general. The importance of theory to anthropological research across the subdisciplines and a critical understanding of the social world will be emphasized. The course will also focus on the historical and political roots of anthropology through comparing select theorists across the history of anthropological thought. Special attention will be given to current theoretical controversies that continue to define the political and ethical concerns of working with human subjects. Open to graduate students only. 3 hours

ANTH 6900 Archaeological Field School Archaeological investigation of specific problems relating to the prehistory or history of a particular area (e.g., southwest Michigan, Lower Mississippi Valley). Participants will receive instruction in collecting and evaluating background information, creating a research design, and implementing archaeological fieldwork (i.e., logistics, site location survey, mapping, recovering and recording objects from archaeological contexts), and processing and curating data for analysis and interpretation in the laboratory. May be repeated with approval of instructor, but does not count toward M.A. program requirements twice. Open to graduate students only. Prerequisite: ANTH 2100 or approval of instructor. 3 to 6 hours

ANTH 6980 Independent Readings in Anthropology Students may contact a faculty member to undertake independent readings on a specific topic of interest. The student should have some familiarity with the topic in advance. The purpose of the course is to allow the student to gain a greater depth of knowledge in a topic which is not offered in a formal course. May be repeated for credit. Prerequisite: Graduate standing. 1 to 3 hours

ANTH 6990 Independent Research in Anthropology Students may contact a faculty member to conduct research under the guidance of the faculty member. Before the initiation of the research a literature search and a written proposal must be prepared. At the conclusion of the research project, a written report will be submitted to the guiding faculty member. May be repeated for credit. Prerequisite: Graduate standing. 1 to 3 hours

ANTH 7000 Master's Thesis Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/no credit basis. Open to graduate students only. Prerequisite: Department approval. 1 to 6 hours

ANTH 7100 Independent Research Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/no credit basis. Open to graduate students only. Prerequisite: Graduate standing in anthropology and department approval. 2 to 6 hours

ANTH 7120 Professional Field Experience Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/no credit basis. Open to graduate students only. Prerequisites: Completion of master's degree course work, including one methods class; and department approval. 3 to 6 hours

Arts and Sciences

A-S 5100 Topics in Legal Studies This course is part of the accelerated law program run collaboratively with the College of Arts and Sciences and the WMU Thomas Cooley Law School, allowing students to take courses through the Law School that are also included in the accelerated program. Consult a program advisor for additional details. May be repeated for credit. Prerequisite: Instructor approval. 1 to 18 hours

A-S 6990 Cooperative Education and Practical Training Cooperative education, internship or practical training experience during a semester involves full-time planned and supervised work related to the student's major or minor and is performed outside the department, unit or university. This work is to be summarized in a written report. Students enrolled in this course will be classified as having full-time student status for the purpose of loan deferments and insurance eligibility. Students may take up to a maximum of six credit hours in A-S 6990. May be repeated for credit. Open to graduate students only. Prerequisite: Departmental approval. 1 to 6 hours

Biological Sciences

BIOS 5180 Endocrinology An overview of the hormonal regulation of various aspects of animal physiology. Major themes include the control of hormone synthesis/secretion, mechanisms of hormone action and target organ effects. Open to upperclass and graduate students. 3 hours

BIOS 5235 Fermentation This is an introductory course to the discipline of fermentation. Using a combined lecture and assignment strategy, students will be exposed to basic concepts and methods in fermentation. The emphasis will be on a comprehensive overview of brewing, both modern and traditional. Considerable time will be given to understanding the complexities of the biochemistry and genetics of yeasts and what this imparts to the brewing process. The course will culminate with students undertaking a novel research project using learned techniques and processes. Open to upperclass and graduate students. 3 hours

BIOS 5240 Microbial Genetics A lecture/seminar course emphasizing modern microbial genetics, as well as historic keystone experiments. This course focuses on work carried out with bacteria and bacteriophages. Concepts include mutation and selection, recombination and repair, DNA cloning and mutagenesis procedures, regulation of gene expression, differential gene expression in response to environmental stimuli, and genome organizations. Lecture/seminar format. Open to upperclass and graduate students. 3 hours

BIOS 5250 Microbial Ecology The objective of this course is to understand the importance of the role and diversity of microorganisms for life on our planet. Students will integrate concepts from various

disciplines, including microbiology, ecology, chemistry, geosciences, evolution, genetics, and health sciences. Lecture/seminar format. Open to upperclass and graduate students. 3 hours

BIOS 5260 Molecular Biology Laboratory This course is designed to expose students to techniques that are currently being used to manipulate and analyze nucleic acids. Student will gain extensive hands-on experience with restriction mapping, ligations, bacterial transformations, eukaryotic gene-replacements, gel electrophoresis, non-isotopic hybridizations, as well as application of the polymerase chain reaction (PCR). Experimental design, use of appropriate controls and handling of acquired data will be stressed. Open to upperclass and graduate students. 3 hours

BIOS 5265 Proteins as Biological Machines The survey of principles of protein sequence, structure, and biological function. The course will review fundamental aspects of proteins, including amino acid sequence, structure, biological function, and biophysical properties such as solubility, folding, stability, molecular recognition and self-assembly, enzyme catalysis and evolution of protein function with respect to amino acid sequence and structure. Individual case studies of model proteins that have biomedical relevance or applications in diagnostic assays, biopharmaceuticals and nanotechnology, will be presented. The use of molecular graphics and bioinformatics software for visualization and analysis of protein sequence and structure will be emphasized. Open to upperclass and graduate students. 3 hours

BIOS 5270 Cancer Biology This course will cover advanced topics in cellular and molecular biology of cancer. Topics to be covered will include oncogenes, tumor suppressor genes, cell cycle, and pathology. New and developing treatments for cancer will also be discussed. Open to upperclass and graduate students. 3 hours

BIOS 5310 Biology of Aging This course is designed to provide students with an understanding of the aging process. The lectures will emphasize the anatomical, physiological, and molecular changes which occur in cells and organs with aging. Clinical applications are introduced where they provide additional insight into the aging process. Open to upperclass and graduate students. 3 hours

BIOS 5340 Virology This course is designed to provide students with the basic understanding of viruses, their structures and replication strategies. Emphasis is placed on host virus interactions leading to disease processes and cellular alterations in mammalian systems. Viruses are considered as miniature model systems to unify biology at the molecular level. Open to upperclass and graduate students. 3 hours

BIOS 5360 Immunology This course is designed to provide students with the basic understanding of the mammalian immune system at cellular and molecular levels. This course also covers the role of the immune system both in health and disease, and explores the applications of immunological concepts in a variety of biological and biomedical sciences. Open to upperclass and graduate students. 4 hours

BIOS 5440 Global Change Ecology The causes and consequences of global climate change will be the focus of this course. We will examine the most recent predictions about the rate and magnitude of global warming, and the likely consequences for plants, animals, and other components of natural ecosystems, and humans. The last several weeks will be devoted to additional global change issues, including loss of biodiversity, introduced species, ozone depletion, and acid precipitation. Twice during the semester, each student will prepare a detailed illustrated outline and lead a class discussion. Open to upperclass and graduate students. 3 hours

BIOS 5445 Human Ecology Students will examine patterns of distribution and abundance of *Homo sapiens* and the ecological processes that generate these patterns, through lectures, reading, multi-media, interactive discussion and dissemination of research and understanding. We will also consider the concept of carrying capacity and the dynamics of human population change in relation to the human niche and changing patterns of resource availability. Open to upperclass and graduate students. 3 hours

BIOS 5450 Chemical Ecology In this course we will focus on an interdisciplinary appreciation for the ecology of chemically mediated interactions among organisms at different scales of organization

from molecules to ecosystems. Students will engage in lectures, reading, multi-media, interactive discussion and hands-on research projects with presentations. Open to upperclass and graduate students. 3 hours

BIOS 5455 Plant-Herbivore Interactions Interactions between plants and herbivores provide the foundation processes for most observable ecological patterns. These processes have organized patterns of species diversity through evolutionary history as well as contemporary space. In this class we will examine interactions between plants and herbivores over a wide range of scales, from thrips to elephants, that often control the dynamics of other exploitative, competitive and mutualistic processes both within and among trophic levels. The class is interactive with computer simulations, presentations, a grant-writing exercise and discussion of relevant literature. Open to upperclass and graduate students. 3 hours

BIOS 5460 Molecular Phylogenetics and Evolution Molecular Phylogenetics and Evolution is an advanced undergraduate/graduate course designed to provide students with a rigorous exposure to molecular data analysis and literature review. In this course students will learn the principles behind DNA data analysis for evolutionary studies. This will include phylogenetic analyses and studies of molecular evolution. Phylogenetic studies will involve the acquisition of comparative DNA sequence data, sequence alignment, statistical models of nucleotide substitutions, and tree estimation using parsimony, distance, maximum likelihood, and Bayesian methods of tree inference. Uses for phylogenetic data will involve tree-based evaluation of taxonomic classifications, comparative method, ancestral estimation, and character evolution. Part of the phylogenetic inference module will involve the use of parametric simulations to evaluate the performance of selected methods of tree inference as well as for phylogenetic hypothesis testing. For the molecular evolution portion of the course, we will investigate selected examples illustrating the effects of natural selection of DNA sequences. Open to upperclass and graduate students. 3 hours

BIOS 5470 Ornithology Provides an introduction to the scientific study of birds. Using lectures, readings and discussion, students will explore the origin and evolution of birds, anatomy and physiology, flight, migration and navigation, ecology and conservation, and bird behavior. Although aimed at developing an understanding of bird biology, this course also emphasizes fundamental concepts in ecology, evolution, and physiology. Field trips, including at least one all-day Saturday outing, are required. Open to upperclass and graduate students. 3 hours

BIOS 5525 Fish Biology This course is a general study of fishes, their structure, classification, physiology, life histories, ecological relationships, and economic importance. Using a combination of lectures, readings, discussion and field trips, students will explore the biology of fishes, with an emphasis on fish species in the Great Lakes basin. Open to upperclass and graduate students. Prerequisite: Junior standing and at least 12 credits in biology or instructor approval.

3 hours

BIOS 5535 Freshwater Ecology This course provides an introduction to the structure and function of aquatic ecosystems. Lectures and readings introduce the physical, chemical, and biological dynamics of streams, lakes, and wetlands. Emphasis is placed on application of fundamental concepts to problems in conservation and management of aquatic systems and species. Laboratory and fieldwork introduce modern methodological approaches to the study of aquatic ecosystems and the organisms that inhabit them. Two day-long Saturday field trips are required. Field exercises will be conducted largely in local streams, lakes, and wetlands. Open to upperclass and graduate students. 4 hours

BIOS 5545 Human Impacts on Great Lakes Ecosystems Utilizes lecture and multimedia discovery methods to investigate how human activities impact the Great Lakes Environment and how current policy initiatives are attempting to restore Great Lakes Ecosystems and protect human and ecosystem health. EPA's Lakewide Lake Michigan Management Plan (www.epa.gov/glnpo/lamp/lm_2008/index.html) will serve as a guide for environmental issues to be addressed in the course. Open to upperclass and graduate students. 3 hours

BIOS 5590 Neurobiology The substrate of behavior will be examined in this interdisciplinary survey of neural structure and function across molecular, cellular and system levels. There will be a strong emphasis on underlying mechanisms in different animal models. Lecture and discussion will be integrated and supplemented by demonstrations. Topics covered will include: membrane biophysics, synaptic physiology,

transduction and signaling in the visual, auditory, chemical and somatosensory systems, reflexes, simple behavior and plasticity. Open to upperclass and graduate students. 4 hours

BIOS 5593 Biological Basis of Learning and Memory Learning and remembering is mediated by the nervous system and is a fundamental biological phenomenon. The ability to change responses as a result of experience seems to be a prominent feature of all nervous systems and is key for organisms to interact with their environments. Indeed for humans to communicate, think and be who we are requires that we learn and remember our thoughts and representations. This course will explore an overview of learning and memory research with a focus on the biological bases and include studies at the behavioral level, brain and nerve cell levels as well as the molecular foundations of synaptic plasticity thought to underlie both complex and simple learning. Open to upperclass and graduate students. 3 hours

BIOS 5595 Biology of Sensory Systems This course provide an introduction, discussion and analysis of the anatomy, physiology, molecular biology and disease states of developed sensory systems identified in the human body and other animals. Recent sensory systems articles will be utilized to critique, strengthen students scientific reading skills, scientific writing skills and presentation skills. 3 hours

BIOS 5610 Pharmacology The study of the mode of action of drugs in the body. Topics may include, but are not limited to pharmacokinetics, pharmacodynamics, autonomic pharmacology, cardiovascular pharmacology, and renal pharmacology. The course will consist of approximately 50 percent lecture and 50 percent student presentations on selected topics. Open to upperclass and graduate students. 3 hours

BIOS 5620 Bioethics Bioethics seeks to help students reflect intelligently upon and discuss the nature of modern biology as a science and its impact upon our social and governmental discourse. This occurs through classroom and web based discussions of methods and techniques relevant to applications of Biological Sciences and Biomedical Ethics. We focus on issues that rarely are discussed for fear of offending someone. This includes, but is not limited to, euthanasia, abortion, intelligent design, organ transplants, stem cells and gene therapy. Students learn to appreciate the complexity of bioethical issues and the enormity of the responsibility they will carry while providing an unbiased view to the public. Open to upperclass and graduate students. Prerequisites: BIOS 2300, and BIOS 2500; with a grade of "C" or better in all prerequisites. 3 hours

BIOS 5630 Biology of Human Genetic Diseases Explores how human genetic diseases are identified and studied. A primary goal is to understand the molecular basis of information flow in the cell: how a change in the DNA sequence of a gene leads to a specific human disease phenotype. In addition to topics covered in lecture, each student chooses a genetic disease for a research project, and searches the primary scientific literature to find out how the disease-causing mutation alters the biology of the affected cells, tissues or organs to cause disease. Some class time will be spent in the library during which students receive training in researching biological literature. Open to upperclass and graduate students. 3 hours

BIOS 5640 Developmental Genetics A survey of basic literature in genetics supporting both historical and recent findings in developmental biology. Practicum in current molecular and genetic methodology, oral presentations, and writing grant applications. Some review of basic cell biology and gene regulation. Open to upperclass and graduate students. 3 hours

BIOS 5700 General Pathology Designed as a general pathology course, the course blends basic pathological principles with current findings and covers new approaches available in the study of disease pathogenesis at the organismal, cellular and molecular levels. The course will begin with general principles and finish with an integrated approach to understanding diseases in organ systems. Open to upperclass and graduate students. 4 hours

BIOS 5740 Developmental Biology Developmental biology is the study of the formation of a complex, multicellular organism from a single cell, the fertilized egg. The course will present this material from both a classical description and an experimental cellular point of view. In addition to the lecture, laboratory exercises will provide experience in the recognition of the various stages of development and in the culturing and manipulations of embryos. Open to upperclass and graduate students. 4 hours

BIOS 5750 Stem Cells and Regeneration This course is a survey of the literature in stem cell and regeneration research, specifically focusing on model organisms (e.g. planaria, salamanders, frogs, zebrafish, hydra, mice, Arabidopsis). Topics include the role of stem cell regulation, the immune system, scarring, and innervation in regeneration; as well as age dependent-regeneration, the connection between regeneration and cancer, and the regenerative capability of humans. This is an oral intensive course: for each class, student(s) will present findings from assigned readings, followed by class discussion. Students will write a final original research proposal based on course content/discussions. Open to upperclass and graduate students. Satisfies Capstone Requirements. Prerequisites: Instructor approval. 3 hours

BIOS 5970 Topics in Biological Sciences Lectures or seminars in various areas of the biological sciences will be offered. The student's record will indicate the topic studied. May be repeated for credit. Open to upperclass and graduate students. Prerequisite: Departmental approval. 3 to 4 hours

BIOS 6010 Special Investigations (various areas) An independent study in one of the various specialties represented by members of the department. The field in which work is offered will be indicated on the student record. May be repeated for credit up to a maximum of six hours. Open to Graduates students only. Prerequisite: Departmental approval. 2 to 6 hours

BIOS 6050 Biological Sciences Colloquium A series of seminars describing current research in various fields in the Biological Sciences. Reports on these research seminars are required. May be repeated for a total of two hours. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisite: Advisor approval. 1 hour

BIOS 6110 Eukaryotic Cell Biology A study of the structure and function of the organelles and biochemical components of eukaryotic cells. Through lectures and readings in current literature, students will examine the latest information on the working of eukaryotic cells. Open to graduate students only. Prerequisite: A course in biochemistry. 3 hours

BIOS 6120 Prokaryotic Cell Biology Bacterial structure-function relationships are examined in a biochemical context. Current and classical concepts of cell biochemistry are organized around the bacterial cell as a model for understanding energetics, synthesis of cell structures, transport, metabolism, and regulatory mechanisms. Readings will be from the literature and substantial use will be made of review articles in biochemistry and microbiology for lecture topics. One paper will be required. Open to graduate students only. Prerequisites: A course in biochemistry and a course in microbiology or instructor approval. 3 hours

BIOS 6130 Animal Physiology Current concepts and molecular details of modern systems physiology will be examined through lecture, readings from the current literature, discussion, and student presentations. Emphasis will be placed on understanding the mechanisms used by the organ systems of animals to maintain homeostasis. Open to graduate students only. Prerequisite: A course in physiology or instructor approval. 3 hours

BIOS 6140 Plant Physiology An advanced topics course covering the current research emphases on the physiology, molecular biology, environmental biology, biochemistry, and cell biology of plants. Open to graduate students only. Prerequisite: Biochemistry. 3 hours

BIOS 6150 Ecology The structure and dynamics of plant and animal populations are considered with critical evaluations of current concepts. Emphases include the relative roles of competition and trophic interactions in population dynamics and how communities are structured. Applications of ecological concepts will consider aspects of conversation biology, pest control, agroecosystem function, and risks of genetic engineering. Open to graduate students only. Prerequisite: A course in Ecology or instructor approval. 3 hours

BIOS 6160 Evolution Evolution is approached as the all-encompassing theory of biology. Topics range from genetic and molecular issues to adaptation in life histories and behavior. At least one

paper will be required. Course readings will be drawn primarily from journal articles. Open to graduate students only. Prerequisites: A course in genetics and a course in ecology or instructor approval. 3 hours

BIOS 6330 Topics in Biological Sciences Courses in which a selected area of biological sciences is studied in depth. Possible topics will reflect the areas of expertise of the biological sciences faculty. The specific topic dealt with in a given semester will be indicated in the Schedule of Course Offerings and on the student's record. May be repeated for credit. Students may take one or all topics offered for credit. Open to graduate students only. Prerequisite: Department approval. 3 hours

BIOS 6979 Seminars in Biology A series of seminars by course participants summarizing current research in various fields in the Biological Sciences. Course is graded on the presentations of course participants. May be repeated for credit. Graded on a credit/No Credit basis. Open to graduate students only. 1 to 2 hours

BIOS 6990 Laboratory Rotations This course provides credit for Laboratory Rotation requirement of the Ph.D. program. Students will carry out directed studies in a research laboratory different from the laboratory where their thesis research is conducted. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisite: Departmental approval. 1 to 4 hours

BIOS 7000 Master's Thesis Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credits basis. Open to graduate students only. Prerequisite: Departmental approval. 1 to 6 hours

BIOS 7100 Independent Research Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credits basis. Open to graduate students only. Prerequisite: Departmental approval. 2 to 6 hours

BIOS 7120 Professional Field Experience Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credits basis. Open to graduate students only. Prerequisite: Departmental approval. 2 to 12 hours

BIOS 7300 Doctoral Dissertation Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credits basis. Open to graduate students only. Prerequisite: Departmental approval. 1 to 15 hours

BIOS 7350 Graduate Research Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credits basis. Open to graduate students only. Prerequisite: Departmental approval. 2 to 10 hours

Chemistry

CHEM 5070 Ethical Chemical Practice This class addresses ethical standards and professional practice for the conduct of chemists. Students will learn to access and search the scientific literature, develop a set of ethical standards, and maintain a safe laboratory environment in an atmosphere of responsible care. The course will also address responsibilities of the individual professional care. The course will also address responsibilities of the individual professional in group, academic, and industrial settings. Open to upperclass and graduate students. 3 hours

CHEM 5090 Topics in Chemistry A topic is presented in greater depth or from a perspective different from that of a typical undergraduate course. Representative topics, such as pesticides and drugs, industrial chemistry, chemical pollution, etc., according to student interests and requests. May be repeated for credit. Open to upperclass and graduate students. 3 hours

CHEM 5150 Inorganic Chemistry This course, along with CHEM 5700 and CHEM 5750, provides a capstone chemistry experience for undergraduates. The course will present the principles of inorganic

chemistry in terms of its relevance to the "real world" of industry and environmental protection. Topics include symmetry, structure, and bonding, as well as a survey of the descriptive chemistry of the elements. Students are strongly advised to have already completed CHEM 5700 and to be registered simultaneously in CHEM 5750. Open to upperclass and graduate students. 3 hours

CHEM 5200 Instrumental Methods in Chemistry An introduction to the theory and application of modern chemical instrumentation is presented. General topics covered are elementary electronics, electrochemistry, spectroscopy, and other instrumental techniques. This course includes a lecture and a laboratory. Open to upperclass and graduate students. 3 hours

CHEM 5280 Chemical Separations Principles and applications of chemical separations, including distillation, crystallization, extraction, electrophoresis and a variety of chromatographic techniques. Laboratory exercises illustrate typical applications of the methods. Open to upperclass and graduate students. 3 hours

CHEM 5500 Biochemistry I The chemistry, properties, and molecular biology of proteins and nucleic acids. Includes discussions of amino acids, enzymes, and biochemical energetics. Open to upperclass and graduate students. 3 hours

CHEM 5510 Biochemistry I Laboratory This course consists of 5500 plus lab. Experiments involve more advanced techniques and instrumentation than in 3560 laboratory. Emphasis will be on purification and properties of proteins and nucleic acids. Open to upperclass and graduate students. 2 hours

CHEM 5540 Biochemistry II Continuation of 5500. Chemistry and metabolism of carbohydrates and lipids. Metabolism of amino acids and nucleic acids. Open to upperclass and graduate students. 3 hours

CHEM 5700 Advanced Organic Chemistry and Spectroscopy This course, along with CHEM 5150 and CHEM 5750, provides a capstone chemistry experience for undergraduates. The course expands on fundamentals of organic reactions and mechanisms through investigations of molecular structure and reactivity. Students will gain experience in modern spectral interpretation and will learn to use the organic chemical literature and databases. Open to upperclass and graduate students. 3 hours

CHEM 5720 Medicinal Chemistry Contemporary principles of organic chemistry relevant to drug development and action as they apply to biochemical systems. Open to upperclass and graduate students. Prerequisites: CHEM 3770 and CHEM 3780, with a grade of "C" or better in all prerequisites. 3 hours

CHEM 5750 Advanced Chemical Synthesis This course provides a synthetic laboratory experience for undergraduates in conjunction with the CHEM 5700 and CHEM 5150 capstone courses. The fundamentals of synthetic techniques will be exercised through independent synthetic laboratory projects and detailed investigations of molecular structure using modern spectroscopic methods. Students will get hands-on experience with modern spectroscopic instrumentation and will learn to utilize the chemical literature and databases. It is strongly recommended that CHEM 5700 be taken before CHEM 5750 to prepare students for spectral interpretation. Prerequisites: CHEM 3770, 3780, 4310, 5200 or permission of the instructor. 2 hours

CHEM 5900 Special Problems in Chemistry Research work on a problem in chemistry in association with a faculty member. May be repeated once for credit. Graded on a Credit/No Credit basis. Open to upperclass and graduate students. 2 hours

CHEM 5980 Readings in Chemistry In consultation with a faculty member, the student will design a reading list in a specialized area. The student will master the material independently and will prepare a paper or other summary work as agreed with the faculty member. May be repeated up to a total of six hours. Open to upperclass and graduate students. 1 to 4 hours

CHEM 5990 Independent Research Under the direction of a faculty member, highly qualified advanced students or small groups may pursue student-initiated research projects. The results will be summarized in a paper or other work as agreed with the faculty member. May be repeated up to a total of six hours. Open to upperclass and graduate students. 1 to 3 hours

CHEM 6090 Advanced Topics in Chemistry Topics are presented at a more advanced level than that used for undergraduate courses. Representative topics would be Organometallic Chemistry, Theories of Liquids and Solutions, Organic Quantum Chemistry, etc., the offering of which would depend on student interest. May be repeated for credit under different topics. Open to graduate students only. Prerequisite: Department approval. 3 hours

CHEM 6100 Advanced Inorganic Chemistry Covers the principles in inorganic chemistry and the chemical elements. Such topics as extranuclear structure of the atoms, periodic classification of the elements, valency and the chemical bond, complex ions and coordination compounds, acids and bases, and nonaqueous solvents are included in the study of chemical principles. The remainder of the course concerns the chemical elements and their compounds. Open to graduate students only. Prerequisite: CHEM 5150 3 hours

CHEM 6310 Computational Chemistry Introduction to the basic theory and practice of computational chemistry. Topics include molecular orbital theory, molecular mechanics and dynamics simulation, analyses of reactivity, chemical structure, intermolecular interactions and spectroscopic properties, and applications to environmental problems. Open to graduate students only. Prerequisite: CHEM 4310 3 hours

CHEM 6330 Chemical Thermodynamics Includes a review of the three laws of thermodynamics, state functions, activities, partial molar qualities, thermodynamics of solutions, equilibrium, and statistical thermodynamics. Open to graduate students only. Prerequisite: CHEM 4310 3 hours

CHEM 6350 Chemical Kinetics Measurement of reaction rates, reaction rate theory, mechanisms of elementary processes, reactions in solution and on surfaces, complex reactions, application of kinetics to mechanisms, and photochemistry. Open to graduate students only. Prerequisite: CHEM 4310. 3 hours

CHEM 6380 Surfaces in the Environment This course will examine the physical and analytical chemistry of environmentally important interfaces. Topics will include: dry deposition, heterogeneous catalysis, and surface photochemistry in the atmosphere; surface phenomena in liquid-gas exchange; and soil binding of pollutants. Open to graduate students only. Prerequisites: MATH 1230, MATH 1710, CHEM 4300, CHEM 4310, or equivalent. (MATH 2300 recommended.) 3 hours

CHEM 6630 Mechanisms in Organic Chemistry Fundamental principles of advanced organic chemistry that are not generally covered in introductory courses in organic chemistry. Emphasis on structure and bonding, stereochemistry, conformational analysis, reaction energetics, and mechanistic tools. Open to graduate students only. Prerequisites: CHEM 3770 and CHEM 3780. 3 hours

CHEM 6650 Organic Synthesis Survey of reactions that are of value in organic synthesis. Using current chemical literature, the course discusses scope and limitations of important synthetic methods. Open to graduate students only. Prerequisites: CHEM 377 and CHEM 3780. 3 hours

CHEM 6670 Atmospheric Chemistry An examination of the fundamental physical and chemical processes in the lower and middle atmosphere. Relationships with biogeochemical cycles will be investigated, and issues of human influence will be discussed. Open to graduate students only. Prerequisites: CHEM 3770 and CHEM 4300. 3 hours

CHEM 6680 Environmental Organic Chemistry An examination of how the environmental fate of organic compounds is influenced both by the physical and chemical properties of those compounds and by the phases occurring in environmental compartments. Focuses on aquatic systems. Open to graduate students only. Prerequisites: CHEM 3770 and CHEM 4310. 3 hours

CHEM 6900 Special Investigations in Chemistry Research or independent study in one of the specialties of a member of the Chemistry Department. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisite: Consent of Instructor. 1 to 9 hours

CHEM 6950 Graduate Coop/Internship Research or practical training experience outside the department or university. This work is to be summarized in a written report. Instructor approval is required so that students can be assigned to an employer in order to best serve both student and employer. May be repeated for credit up to 6 credit hours. Open to graduate students only. Prerequisite: Instructor approval. 1 to 4 hours

CHEM 7000 Master's Thesis Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisite: Approval of department and Graduate College required to enroll in this course. 1 to 6 hours

CHEM 7300 Doctoral Dissertation Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisite: Approval of department and Graduate College required to enroll in this course. 1 to 15 hours

Communication

COM 5060 Special Topics in Global Communication Study of special topics in global/international communication such as comparative media systems, development communication, Asian/African/South American communication, Governments and Propaganda, Transnational Media Corporations and Communication. May be repeated for credit. Open to upperclass and graduate students. 3 hours

COM 5550 Multimedia Production Designed to help students develop competencies required to produce linear and nonlinear interactive multimedia projects. By the end of the semester students will gain an understanding and appreciation of the steps necessary to produce interactive multimedia projects and the concepts, tools, and techniques involved in the design and delivery of such projects. Open to upperclass and graduate students. 3 hours

COM 5600 Teaching Communication This course provides an overview of the concepts, materials, and methods used in teaching communication courses. The focus will be on the following: (a) philosophies and theories of speech communication, (b) development of instructional strategies and objectives, and (c) development and evaluation of teaching materials. Students will take part in, observe, and evaluate teaching-learning processes. Open to upperclass and graduate students. 3 hours

COM 6010 Introduction to Communication Theory and Research This course introduces the various research paradigms in the field of communication. Through examination of current communication literature, students will examine a broad range of methodologies and approaches to communication theory and research. Open to graduate students only. Restricted to the following: Masters in Communication, Organizational Communication, or Telecommunications Management. 3 hours

COM 6020 Quantitative Communication Research This course provides an introduction to social scientific methods, techniques, and instruments for conducting communication research. The course examines methodologies including evaluation and assessment, experimental and survey research designs and statistical analysis including descriptive and inferential statistics. Open to graduate students only. Restricted to the following: Masters in Communication, Organizational Communication, or Telecommunications Management. 3 hours

COM 6050 Qualitative Communication Research This course will examine the philosophies, methods and techniques used in qualitative research. The focus of the seminar will be on teaching, and putting into practice, specific qualitative methodological processes within the study of communication phenomena. Students will be required to engage in project(s) which develop the ability to write qualitatively as well. Open to graduate students only. Restricted to the following: Masters in Communication, Organizational Communication, or Telecommunications Management. 3 hours

COM 6400 Seminar in Mass Communication Exploration of various topics in mass communication. Possible topics may include the history of film, media criticism, news and public affairs,

international telecommunications, cultural diversity and the media or others. May be repeated for credit under different topics. Open to graduate students only. Restricted to the following: Masters in Communication, Organizational Communication, or Telecommunications Management. 3 hours

COM 6430 Communication , Strategic Planning and Innovation A basic theme found throughout this course is that successful innovation presupposes effective communication between and among all organizational players involved in the development of new products and services. The course will examine the importance of communication to innovation and of innovation (and innovative thinking) to the long-term success of today's business and non-profit organizations. Strategic planning is the set of managerial decisions and actions that determine the long-term performance of a company or organization. Innovation is important because it creates a long-term lasting advantage for an organization. The goal of highly innovative organizations is to make innovation a sustainable, repeatable process. Open to graduate students only. Restricted to the following: Masters in Communication, Organizational Communication, or Telecommunications Management. 3 hours

COM 6450 Mass Communication Students will survey a broad range of mass communication theories that address media production, analysis, and reception. More specifically, the course will examine the development of mass communication as a field of academic study, including the major questions that have guided and challenged research in this area. Traditional and contemporary theoretical perspectives and research will be covered. Open to graduate students only. Restricted to the following: Masters in Communication, Organizational Communication, or Telecommunications Management. 3 hours

COM 6700 Seminar in Interpersonal Communication Exploration of selected topics in interpersonal communication. Possible topics may include gender, micro-organizational communication, intercultural communication, health communication, family communication, dialogue, and community or others. May be repeated for credit under different topics. Open to graduate students only. Restricted to the following: Masters in Communication, Organizational Communication, or Telecommunications Management. 3 hours

COM 6730 Conflict Management Based on the assumption that conflict pervades human life, the course explores the strategies of productive and nonproductive interpersonal conflict within the organizational setting. Theories of conflict are examined, and explanations of the sources, processes and consequences of conflict in relationships and organizations are explored. Open to graduate students only. Restricted to the following: Masters in Communication, Organizational Communication, or Telecommunications Management. 3 hours

COM 6740 Interpersonal Communication Examination of traditional and contemporary theoretical perspectives and research in interpersonal communication. Students will apply theory to interpersonal settings and will critique the contributions and limitations of various theoretical approaches to the understanding of interpersonal relationships. Open to graduate students only. Restricted to the following: Masters in Communication, Organizational Communication, or Telecommunications Management. 3 hours

COM 6800 Seminar in Organizational Communication Exploration of selected topics in organizational communication. Possible topics may include corporate advocacy, public relations, global organizations, training and development, dialogue, climate and culture in organizations. May be repeated for credit under different topics. Open to graduate students only. Restricted to the following: Masters in Communication, Organizational Communication, or Telecommunications Management. 3 hours

COM 6810 Group Communication Processes A study of small group communication as it affects problem solving and decision making procedures. Emphases will be on developing an understanding of how participants in problem solving groups work together and how they can be made more effective through leader facilitation. The student will have practical experience in studying problem-solving and decision-making methods. Open to graduate students only. Restricted to the following: Masters in Communication, Organizational Communication, or Telecommunications Management. 3 hours

COM 6820 Organizational Communication This course examines the historical and contemporary perspectives influential to our understanding of organizing and communication's role in this process.

Students will investigate foundational topics in organizational communication, such as leadership, supervisor-employee relationships, and socialization, as well as examine issues currently affecting organizational communication research and practice, such as emotional labor, self-organizing systems theory, and identity.Open to graduate students only. Restricted to the following: Masters in Communication, Organizational Communication, or Telecommunications Management. 3 hours

COM 6830 Power and Leadership This course examines the role of communication and leadership in organizational settings by exploring current trends in leadership theory and research. Special emphasis will be given to power and leadership. Open to graduate students only. Restricted to Master's in communication. 3 hours

COM 7000 Master's Thesis Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisite: Approved application; department and Graduate College approval. 1 to 6 hours

COM 7100 Independent Research Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisite: Department approval. 2 to 6 hours

COM 7120 Professional Field Experience Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisite: Department approval. 2 to 6 hours

COM 7150 Professional Project in Communication The professional project option is intended for graduate students who desire to extend their academic education by engaging in the development, enactment, and assessment of an applied communication experience. The uniqueness of each student's professional Project enhances theoretical and applied learning and provides an opportunity to evaluate the scope of conceptual understanding and skills mastery acquired in the M.A. program. The professional project may involve workshops, case studies, training, creation of websites, communication assessments and completion of other projects within the context of the student's chosen area of study. Graded on a Credit/No Credit basis. Open to graduate students only. Restricted to Masters in Communication. 3 hours

Community and Regional Planning

CORP 5430 Transportation Planning This course covers the practice of planning multimodal transportation systems including motorized transportation networks (roads, cars, and trucking), public transportation (buses and rail), paratransit, non-motorized transportation (trails, bikes, and pedestrian), airlines and airports, freight (road, rail, water, and air) and information networks. Information processing applications covered in this course include GIS-T and Intelligent Transportation Systems. Open to upperclass and graduate students. 3 hours

CORP 5540 Outdoor Recreation: Resources and Planning (Science credit) Examination of extensive, resource-based outdoor recreation (such as parks, wilderness, wild rivers, hunting and fishing, hiking, etc.) with emphasis upon recreational planning. Topics include supply and demand for outdoor recreation, identification of present and future recreational needs, policy considerations, administration of recreational land uses, and various problems associated with outdoor recreation. Readings, discussion, and student-designed and executed individual studies provide professional orientation. Open to upperclass and graduate students. 3 hours

CORP 5580 Planning Studio A project oriented studio course designed to focus on applied planning and design techniques. Integration and application of skills and knowledge from other courses to "real-life" community-based planning projects. Projects will integrate the physical and human environments: terrain and landscape, natural and cultural context, microclimate, infrastructure and adjacent land uses, economic and environmental impacts, etc. Studio seminars, discussion, and field visits will explore theory and practice in observation, problem formulation, alternatives generation, and plan development and presentation. Open to upperclass and graduate students. 3 hours

CORP 5700 Cities and Urban Systems Study of processes and forms of urban settlement highlighting problems relating to (1) political and geographical realities of urbanized regions, (2) factors in city growth (or decline), (3) the sizes, functions, and geographical distribution of cities, and (4) population patterns in contemporary cities. Activities are designed to provide the student with experience in the use of source materials and methods of analysis utilized in urban geography. Open to upperclass and graduate students. 3 hours

Comparative Religion

REL 5000 Historical Studies in Religion The topic to be announced in the Schedule of Course Offerings. The content of the course will vary from semester to semester. Students may repeat the course for credit as long as the subject matter is different. Topics such as the following will be studied: Zen Buddhism; Buddhism; Taoism; Shinto; New Religions of Japan; Religion in Japanese Literature; Islam in the Modern World; Christian Theology to 1500; Renaissance and Reformation Theology; Mystical Dimensions of Islam. May be repeated for credit. Open to upperclass and graduate students. 2 to 4 hours

REL 5100 Comparative Studies in Religion The topic to be announced in the Schedule of Course Offerings. The content of the course will vary from semester to semester. Students may repeat the course for credit as long as the subject matter is different. Topics such as the following will be studied: Millennium, Utopia, and Revolution; Femininity as a Religious Form; Great Islamic Thinkers; the Hindu Yogas; the Occult Tradition. May be repeated for credit. Open to upperclass and graduate students. 2 to 4 hours

REL 5980 Readings in Religion Research on some selected period or topic under supervision of a member of the Religion faculty. Approval of instructor involved and Chairperson of the Department must be secured in advance of registration. May be repeated for credit. Open to upperclass and graduate students. 1 to 4 hours

REL 6000 Comparative Religion Professional Seminar A systematic study of the most important works in the subfields of comparative religion represented by department faculty. This course will introduce students to issues in and the history of the field of the academic study of religion and prepare them for further course work within the field. Open to graduate students only. 3 hours

REL 6100 Theory and Method An examination of the major theoretical options for understanding and explaining religion in comparative perspective and the major methods employed by theoreticians in their development of such theoretical options. Particular attention will be paid to intellectualist, symbolist, and structuralist, ideological, emotivist, and cognitive method and theory. Open to graduate students only. 3 hours

REL 6150 Pedagogy: Teaching World Religions While learning the content of individual religious traditions and exploring the comparative questions between/among traditions, students will focus on the issues of teaching about religion generally and the problematics of presenting individual traditions. Students will learn how to prepare syllabi, interact with students, and construct exams and assignments. This course will balance content of religious traditions and pedagogical techniques as a way of preparing students to teach basic courses in religion. Open to graduate students only. 3 hours

REL 6200 Advanced Writing Seminar in Religion Advanced study on questions of comparative research on religion with a focus on developing graduate-level writing skills and preparing a writing portfolio. Open to graduate students only. Prerequisite: Instructor approval. 3 hours

REL 6950 Dissertation Tutorial Planning and preparation for the dissertation, including selection of an appropriate topic. The student will work with an advisor to develop a dissertation proposal to be submitted to his/her Ph.D. committee. The tutorial will entail preparation of a preliminary bibliography, readings in basic sources and examination of the ideas and materials related to the subject, selection of essential sources, and sketching of the dissertation outline. (This course is a prerequisite for REL 7300, Doctoral Dissertation). Open to graduate students only. Prerequisite: Department approval. 3 hours

REL 7000 Master's Thesis Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisite: Department and Graduate College approval. 1 to 6 hours

REL 7100 Independent Research Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisite: Department approval. 2 to 6 hours

REL 7120 Professional Field Experience Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisite: Department approval. 2 to 12 hours

REL 7300 Doctoral Dissertation Please refer to the Graduate College section for course description. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisite: Approved application; department and Graduate College approval. 1 to 15 hours

Economics

ECON 5040 Mathematics for Economists This course presents the mathematical material necessary as background for the topics covered in graduate-level economics courses. Topics covered include differential calculus, optimization, comparative statics, and mathematical programming. These techniques are applied to selected economic problems. Open to upperclass and graduate students. 3 hours

ECON 5880 Economic Development An analysis of the economic factors such as population, resources, innovation, and capital formation that affect economic growth. Selected underdeveloped areas will be studied to understand the cultural pattern and economic reasons for lack of development and the steps necessary to promote economic progress. Open to upperclass and graduate students. 3 hours

ECON 5910 Guest Economist Seminar Seminar series on a topic of current interest featuring invited visiting economists. Topics will vary. May be repeated for credit. 1 hour

ECON 5920 Guest Economist Seminar Seminar series on a topic of current interest featuring invited visiting economists. Topics will vary. May be repeated for credit. 1 hour

ECON 5980 Readings in Economics An independent program of study for qualified students to be arranged in consultation with the instructor. Open to upperclass and graduate students. 1 to 3 hours

ECON 6010 Basic Economic Analysis This course is designed to provide students with an understanding of fundamental economic concepts. Students become acquainted with the basic tools that economists use to analyze issues and apply the science of economics. After completing the course, students will be better able to understand and analyze problems from an economic perspective. Students are introduced to basic concepts in the fields of microeconomics and macroeconomics. Knowledge of these concepts is prerequisite for further study in business, public and development administration. Open to graduate students only. Not open to Economics Graduate students. 3 hours

ECON 6030 Advanced Price Theory An advanced study in the logic of the pure theory of production; joint production and joint costs, and introduction to the multiperiodic production theory. Advanced theory of consumer behavior; aggregation problems in product supply, factor demand and consumer demand analysis; review of selected empirical studies on consumer demand analysis; consumer surplus; problems involving optimization over time and under conditions of uncertainty; role of savings in consumer demand theory (utility maximization over time). Open to graduate students only. Prerequisite: MATH 1220 or MATH 1700 or ECON 5040. 3 hours

ECON 6040 Introduction to Mathematical Economics This course is intended to introduce graduate students to the concepts of multivariate calculus and mathematical analysis commonly used in the mathematical analysis of economic problems. Its primary objective is to teach students the rudiments of mathematical programming as they apply to economic theory. Thus, students will also be introduced to selected topics from consumer theory and the theory of the firm. Open to graduate students only. Prerequisites: (MATH 1220 or MATH 1700) and (MATH 1230 or MATH 1710). 3 hours

ECON 6070 Uncertainty and Health Analysis of individual decision making under situations of uncertainty, especially as it pertains to the health setting. Risk topics include expected utility, risk aversion, stochastic dominance, and asymmetric information. Health modeling such as health production and capital, health insurance, health technology and lifestyle choice. Social health issues covered include comparative health care systems, government intervention, and healthcare reform. Open to graduate students only. Prerequisite: ECON 2010 or equivalent. 3 hours

ECON 6090 Seminar in Economics Offers the graduate an opportunity to investigate contemporary problems in economic theory and analysis. Topics will vary. May be repeated up to 18 hours. Open to graduate students only. Prerequisite: Four (4) credit hours of advanced economic theory or instructor approval. 3 hours

ECON 6100 Human Resources I This course is an introduction to human resource economics. Its objective is to provide students with the theoretical background needed to undertake studies relating to human resource and labor problems. Thus, this course will present a general survey of the theory that forms the core of modern labor economics. Open to graduate students only. Prerequisite: ECON 6030 or equivalent. 3 hours

ECON 6110 Human Resources II This course is the second course in a two course sequence required for the Ph.D. field in human resource economics. The objective of this course is to apply theory and quantitative methods to various topic areas in human resource and labor economics, such as discrimination, employment and training policies, income distribution, turnover and migration, unions and collective bargaining, and household production and family decisions. Open to graduate students only. Prerequisite: ECON 6100 3 hours

ECON 6190 Introduction to Econometrics This course is an introduction to econometric models and their use in economic analysis. The course covers multiple reqression models, the implications and treatment of serial correlation and heteroskedasticity. Open to graduate students only. Prerequisite: ECON 6220 or equivalent. 3 hours

ECON 6220 Economic Statistics This course focuses on the theory and practice of testing hypotheses, statistical estimation theory, the basic theory underlying the linear model, and introduction to econometric models, and the nature of difficulties that arise in applying statistical models to economic research problems. Open to graduate students only. Prerequisites: MATH 1220 or MATH 1700 or ECON 5040 or ECON 6040. 3 hours

ECON 6620 National Income Analysis A basic course in economic theory with emphasis on modern theories of output of the economy as a whole and on the uses of these theories as guides to policy. Open to graduate students only. Prerequisites: ECON 4030 and ECON 4060. 3 hours

ECON 6650 Microeconomic Theory I Core ideas in theoretical microeconomics will be introduced. The course will address a number of standard microeconomic topics, including the theories of consumption and production, cost and expenditure functions, market structures, and input demand. Open to graduate students only. Prerequisites: (MATH 1220 or MATH 1700) and (MATH 1230 or MATH 1710). 3 hours

ECON 6660 Microeconomic Theory II This course presents an advanced treatment of consumer and producer theory. It will be composed of selected topics in microeconomic theory, including general equilibrium and welfare analysis. Open to graduate students only. Prerequisites: (ECON 5040 or ECON 6040) and ECON 6650. 3 hours

ECON 6700 Advanced Econometrics I The first course in the advanced econometrics sequence. This course presents sample distribution theory for the estimation and testing of econometric models. Applications will be made to SUR systems, error components, nonlinear regression, limited dependent variables, and sample selection bias. Open to graduate students only. Prerequisite: ECON 6190 3 hours

ECON 6710 Advanced Econometrics II This is the second course in the advanced econometrics sequence. This course considers the specification and evaluation of dynamic econometric models. Both single and multiple time series models are examined. The issue of nonstationarity and the role of vector autoregressions and cointegration are emphasized. Open to graduate students only. Prerequisite: ECON 6700 3 hours

ECON 6750 Macroeconomic Theory I This course develops a general equilibrium macroeconomic model reflecting the recent developments in the literature. Open to graduate students only. Prerequisites: (MATH 1220 or MATH 1700) and (MATH 1230 or MATH 1710). 3 hours

ECON 6760 Macroeconomic Theory II The second course in the Ph.D. level macro sequence. A rigorous analysis of macro theory and macro policy issues with an emphasis on empirical testing. Open to graduate students only. Prerequisites: (ECON 5040 or ECON 6040) and ECON 6750. 3 hours

ECON 6800 International Economics I In this course the interaction of the domestic economy with the international financial world will be studied. Topics include: Exchange rate determination, balance of payments, and the international monetary system. Open to Graduates students only. Prerequisites: ECON 6220 and ECON 6620, or equivalents. 3 hours

ECON 6810 International Economics II This course examines the reasons for and implications of international trade. Topics include: Models of international trade, policies used to influence trade and the welfare effects of international trade policies. Open to graduate students only. Prerequisite: ECON 6030 or equivalent. 3 hours

ECON 6860 Monetary Economics In this course the interaction between macroeconomic activity and the quantity of money in the economy is studied. Both theoretical and empirical models are examined. Topics include empirical evidence on money and output, money and transactions, money and procedures, and interest rates and monetary policy. Open to graduate students only. Prerequisites: ECON 6190 and ECON 6760, or equivalent. 3 hours

ECON 6870 Monetary Policy In this course the interaction between macroeconomic activity and central bank monetary policy is studied. Both theoretical and empirical models are examined. However, the emphasis is on empirical models. Topics include: empirical evidence on money and output, money and public finance, the credit channel of monetary policy, monetary-policy operating procedures, and interest rates and monetary policy. Open to graduate students only. Prerequisites: ECON 6750 and 6190, or equivalents. 3 hours

ECON 6880 Economic Development I An intensive examination of a number of selected key topics in development economics, centering on issues of crucial importance to developing nations. Examples of such issues are primary products, capital formation, technological change, inflation, debt servicing, population, etc. Open to graduate students only. Prerequisites: ECON 2010 and ECON 2020. 3 hours

ECON 6890 Economic Development II This course will concentrate on analysis of development theory and examine its relevance to the problems facing extant developing economies. Different approaches to economic development will be examined using advanced economic theory and methodology. Open to graduate students only. Prerequisites: ECON 6650, ECON 6750 and ECON 6880. 3 hours

ECON 6990 Economics Workshop A workshop designed to deepen a student's understanding of theoretical and empirical economics by discussing the research being conducted by the Department's faculty, economists from other institutions, and Ph.D. candidate graduate students. Topics will vary. May be repeated up to 18 hours. Open to graduate students only. Prerequisites: ECON 6660, ECON 6700 and ECON 6760. 3 hours

ECON 7100 Independent Research Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisite: Approved application. 2 to 6 hours

ECON 7120 Professional Field Experience Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisite: Approved application and department approval. 2 to 12 hours

ECON 7300 Doctoral Dissertation Please refer to the Graduate College section for course description. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisite: Approved application; department and Graduate College approval. 1 to 15 hours

English

ENGL 5220 Studies in American Literature Study of a movement or a recurring theme in American literature, such as romanticism, realism, naturalism, humor, or racial issues. Open to upperclass and graduate students. 3 hours

ENGL 5300 Medieval Literature Readings in the medieval literary tradition. Some Middle English works will be studied in the original; works in Old English and continental literature will be studied mainly in translation. Open to upperclass and graduate students. 3 hours

ENGL 5320 English Renaissance Literature Readings in representative writers of the period 1500-1660. Open to upperclass and graduate students. 3 hours

ENGL 5340 Restoration and Eighteenth Century Literature Readings in representative writers of the period 1660-1800, focusing on the diversity of literary forms in the period. Open to upperclass and graduate students. 3 hours

ENGL 5360 Romantic Literature Readings in poetry and criticism, with emphasis on such writers as Blake, Burns, the Wordsworths, Coleridge, Scott, Byron, the Shelleys, and Keats. Open to upperclass and graduate students. 3 hours

ENGL 5370 Victorian Literature Readings emphasizing such writers as Carlyle, Mill, Dickens, Thackeray, Eliot, Tennyson, the Brownings, and Arnold. Open to upperclass and graduate students. 3 hours

ENGL 5380 Modern Literature Readings in representative writers in the period 1890-1945, not exclusively in British and American literature. Open to upperclass and graduate students. 3 hours

ENGL 5390 Post-Colonial Literature Readings in representative writers from colonial and post-colonial cultures. Open to upperclass and graduate students. 3 hours

ENGL 5400 Contemporary Literature Readings in representative writers who have come to prominence chiefly since 1945. Open to upperclass and graduate students. 3 hours

ENGL 5550 Studies in Major Writers Study of the works of classical, European, British, or American writers. Limited to one or two authors. May be repeated for credit as long as the authors covered are different. Open to upperclass and graduate students. 3 hours

ENGL 5660 Creative Writing Workshop - Fiction A workshop and conference course in the writing of fiction, with emphasis on refinement of the individual student's style and skills. May be repeated for credit. Open to upperclass and graduate students. 4 hours

ENGL 5670 Creative Writing Workshop - Poetry A workshop and conference course in the writing of poetry, with emphasis on refinement of the individual student's style and skills. May be repeated for credit. Open to upperclass and graduate students. 4 hours

ENGL 5680 Creative Writing Workshop - Playwriting A workshop and conference course in playwriting, with emphasis on refinement of the individual student's style and skills. May be repeated for credit. Open to Upperclass and Graduate students 4 hours

ENGL 5700 Creative Writing Workshop – Creative Non-fiction A workshop and conference course in the writing of creative non-fiction, with emphasis on refinement of the individual student's style and skills. May be repeated for credit. Open to upperclass and graduate students. 4 hours

ENGL 5740 Grammar in Teaching Writing Dealing with issues and methods in the teaching of grammar, this course for teachers focuses on using grammar to develop content, style and voice, and skill in revising and editing writing. Open to upperclass and graduate students. 4 hours

ENGL 5750 Icelandic Sagas in Translation Readings in medieval Icelandic literature. This class provides students an opportunity to explore medieval Iceland through its rich mythology, literature, and culture. No previous coursework required in either Old Norse/Icelandic or medieval literature. Open to upperclass and graduate students. 3 hours

ENGL 5760 Introduction to Old Norse An introduction to the fundamentals of Old Norse grammar and language. By translating prose and poetry, students will develop an appreciation of the literature and culture of medieval Iceland as well as a reading knowledge of Old Norse. Open to upperclass and graduate students. 3 hours

ENGL 5770 Advanced Readings in Old Norse A review of the fundamentals of Old Norse grammar and language learned in ENGL 5760 by focusing on longer selections from sagas and poems. This class will further students' knowledge of the language and the literature through discussion of them. Open to upperclass and graduate students. Prerequisite: ENGL 5760 3 hours

ENGL 5820 Studies in Children's Literature A study in depth of significant themes, movements, and types of children's literature. Open to upperclass and graduate students. 3 hours

ENGL 5830 Multicultural Adolescent Literature A course designed to develop an understanding of the cultural diversity of the American experience through multi-cultural oral and written literature for young people. Attention will be paid to developing criteria for selecting and evaluating literature which reflects diversity within the American heritage. Open to upperclass and graduate students. 3 hours

ENGL 5970 Studies in English: Variable Topics Group study of special topics in literature, film, English language, and writing. Many of these special courses are organized around special events or speakers on campus or in the community, or in response to special needs or interests of students. Some topics are announced in the Schedule of Course Offerings; some are added during the semester. Further information and full listing of topics may be obtained from the English Department, sixth floor Sprau Tower. Open to upperclass and graduate students. 1 to 3 hours

ENGL 5980 Readings in English Advanced students with good scholastic records may elect to pursue independently the study of some topic having special interest for them. Topics are chosen and arrangements are made to suit the needs of each student. Approval of English advisor required. May be repeated for credit. Open to upperclass and graduate students. 1 to 4 hours

ENGL 6100 Seminar Study of a problem in literary history or criticism. May be repeated once with the permission of the graduate advisor. Open to graduate students only. Prerequisite: Department approval. 3 hours

ENGL 6110 Literary Forms A study in form and technique in one of the four major literary genres: poetry, fiction, drama, and non-fiction. May be repeated for credit. Open to graduate students only.3 hours

ENGL 6150 Literary Criticism Readings in several significant theorists on the nature of literature, the characteristics of audience response to literature, and principles underlying the analysis and evaluation of literature. Works in at least two genres will be examined in light of these theoretical writings. Open to graduate students only. 3 hours

ENGL 6210 Studies in British Literature The advanced study of selected aspects of British literature. May be repeated once with the permission of the graduate advisor. Open to graduate students only.3 hours

ENGL 6220 Studies in American Literature The advanced study of a topic in American Literary history, such as The American "Renaissance", The 1920's, The Transcendental Tradition in American Literature, Fiction (or Poetry, or Drama) in America, or The Development of Modern American Prose Style. May be repeated once with the permission of the graduate advisor. Open to graduate students only. 3 hours

ENGL 6300 Introduction to Graduate Studies This course is intended to provide graduate students with an introduction to the theory and practice of literary criticism at the professional level. The goal of course readings and discussion generally will be to aid students in the completion of a substantial research project of a kind suitable for publication. Open to graduate students only. 3 hours

ENGL 6330 Professional Writing: Form and Technique A course in writing in the various formats needed by large institutions, whether academic, corporate, or public. Particular emphasis will be placed on the use of the interview to gather information, on preparing speeches, brochures, newsletters, and other publications, and on the techniques of non-personal prose. Open to graduate students only. 3 hours

ENGL 6400 The Nature of Poetry A study of styles, techniques, forms, and conceptions of poetry, involving practice in explication, both oral and written, of individual poems. Open to graduate students only. 3 hours

ENGL 6410 Studies in Modern Poetry An intensive study of work of several modern poets. Open to graduate students only. 3 hours

ENGL 6420 Studies in Drama Selected areas of drama from classical times to the present. Open to graduate students only. 3 hours

ENGL 6440 Studies in the Novel An examination of significant forms and techniques employed in the novel from its beginnings to the modern age. Open to graduate students only. 3 hours

ENGL 6450 Studies in the Modern Novel An intensive study of the works of some important novelists of the twentieth century. Open to graduate students only. 3 hours

ENGL 6520 Studies in Shakespeare: Tragedy Selected tragedies of Shakespeare. Open to graduate students only. 3 hours

ENGL 6530 Studies in Shakespeare: Comedy Selected comedies of Shakespeare. Open to graduate students only. 3 hours

ENGL 6660 Graduate Writing Workshop Any given section of this course will focus on either poetry, fiction, non-fiction, or drama. Course organization will emphasize roundtable discussion of student writing. Course may be taken more than once; a student may elect up to 12 credit hours in one genre and up to 18 hours in all. M.F.A. candidates must take at least 6 hours in their area of specialization. Open to graduate students only. Prerequisite: Department approval. 3 hours

ENGL 6690 Methods of Teaching College Writing A course required of those teaching the freshman composition course, ENGL 1050, for the first time. Establishes the basic structure and methodology for

teaching such a course. Participants prepare assignment sequences for their classes, design appropriate learning activities, and practice evaluating and responding to student writing. Participants are introduced to activities that reflect different theories and approaches to the teaching of composition. Open to graduate students only. 3 hours

ENGL 6760 Old English A course dealing with the grammatical structures of Old English and the sociolinguistic context in which this language was spoken and written, with a view to applying such linguistic study to translating and interpreting pre-1066 English literary texts, both poetry and prose, including Beowulf. Open to graduate students only. 3 hours

ENGL 6770 Middle English A course dealing with the grammatical structures of Middle English and the sociocultural context in which this language was spoken and written, with a view to applying such linguistic study to translating and interpreting Middle English texts, both prose and poetic, Chaucerian and non-Chaucerian, stemming from various regions of English-speaking Britain. Open to graduate students only. 3 hours

ENGL 6780 English Education Seminar Built around a core set of concepts while simultaneously tailored to student participants' interests. Covers a variety of English Education topics. Open to graduate students only. Restricted to graduate students admitted to English Curricula or by approval of the English graduate advisor. 3 hours

ENGL 6790 Studies in Composition Theory A course that examines various approaches to the teaching of composition. Aims to increase awareness of the relationship between theory and practice, acquaint participants with ongoing dialogues within the field, and help them identify and formulate their own professional stances. Attention will be given to the impact on composition theory of scholarship in fields such as classical rhetoric, linguistics, literary theory, cognitive psychology, human development and learning, social constructionism, and ethnology. Open to graduate students only. Prerequisite: Teaching experience. 3 hours

ENGL 6800 Advanced Methods in Teaching Literature A study of theories and methods of teaching literature. Open to graduate students only. 3 hours

ENGL 6900 Scholarship and Writing in the Profession In this seminar students will prepare the capstone essay to be submitted as the culminating requirement for the M.A. in English. The course will include analysis and evaluation of journals and articles in areas relevant to the student's research topic, ``workshop” review and editing of the paper, and preparation for oral presentation and discussion of the student's work in a Master's Colloquium. Open to graduate students only.Prerequisites: ENGL 6300 and prior completion of at least 21 hours of credit toward the Master of Arts in English. 3 hours

ENGL 6910 Research and Scholarship in English Education As reflective practitioners in English classrooms, participants in this seminar will develop a research question, review relevant professional literature, conduct classroom and/or academic research using appropriate research techniques, and present findings orally and in a written paper or report that will be the capstone paper for the MA in English with an Emphasis on Teaching. Open to graduate students only. Prerequisites: Students in the program who have completed at least 24 hours of the course of study and who have completed the core courses, the teaching of English courses, the English language course and the multicultural literature course may enroll. 3 hours

ENGL 6970 Studies in English: Variable Topics Group study of special topics in language, literature, and composition. These special courses and workshops may be offered on campus, in the off-campus centers, or as in-service work in schools. For further information consult the graduate advisor. May be repeated for credit, providing topics vary. Open to graduate students only. 1 to 3 hours

ENGL 6990 M.F.A. Project A collection of short fiction, a collection of poetry, a collection of one-act plays, a full-length play, or a novel. The work presented in fulfillment of this requirement must be judged by a committee of the graduate faculty to be worthy of publication or production; a public reading or performance is required. Open to graduate students only. 3 to 6 hours

ENGL 7000 Master's Thesis Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only.

Prerequisite: Department and Graduate College approval. 1 to 6 hours

ENGL 7100 Independent Research Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisite: Department approval. 2 to 6 hours

ENGL 7110 Readings in Doctoral Specialization In consultation with a faculty member, the doctoral student will design a reading list of 20 to 30 books in a specialized area; students wishing additional guided reading may register a second time. The student will master these works independently and, in consultation with faculty members, select a representative list of approximately 20 works on which to be evaluated in a two-hour oral exam, conducted by a committee of at least two faculty members. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only.Prerequisite: Doctoral candidacy. 3 hours

ENGL 7120 Professional Field Experience Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisite: Department approval. 2 to 12 hours

ENGL 7130 Practicum in Teaching in the Discipline A practicum in teaching in the discipline will be done as collaborative teaching with an experienced faculty member in a broad-based undergraduate course in literature, language, creative writing, or advanced composition. There will be opportunity for both guided praxis and reflection on praxis. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisite: Advisor approval. 3 hours

ENGL 7300 Doctoral Dissertation Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisites: Approved application; department and Graduate College approval. 1 - 15 hours

Environmental Studies

ENVS 5400 Freshwater Policy This course explores the structure and dynamics of the major policies and politics governing management of freshwater resources. Emphasis is on understanding how underlying social valuation systems of economics, ethics and legal theory shape policy choices and evaluating the role of freshwater policies in achieving sustainable solutions. Open to Upperclass and Graduate students Prerequisites: (ENVS 3400 or PSCI 3060) and ECON 3190, with a grade of "C" or better in all prerequisites. 3 hours

Gender and Women's Studies

GWS 5500 Contemporary Feminist Theory An advanced course focusing on the analysis of American and European texts in feminist theory. The course will also consider the relation of these texts to other contemporary theoretical approaches. Open to upperclass and graduate students. Prerequisite: GWS 4010 3 hours

GWS 5970 Issues in Gender and Women's Studies: Variable Topics Group study of special issues in Gender and Women's Studies. Variable topics may address theoretical, critical, or practical issues in the historical or contemporary context. The courses will be offered in response to the special needs and interests of students and may be organized around special events or available guest speakers. May be repeated for credit when topics vary. Open to upperclass and graduate students. 1 to 3 hours

GWS 5980 Readings in Gender and Women's Studies Individual study project available to the advanced student by permission of faculty advisor with departmental approval of project application. May be repeated for credit. Open to upperclass and graduate students. 1 to 4 hours

Geography

GEOG 5000 Advanced Tourism Studies This course uses a multidisciplinary approach to examine the burgeoning tourism industry and addresses some emerging issues in tourism development. Topics include but not limited to cultural tourism, ecotourism, agritourism, and tourism and sustainability. Case studies from different countries will be used to illustrate the topics under discussion. It is a seminar-style course where student participation is expected. May be repeated for credit. Open to upperclass and graduate students. Prerequisite: Instructor approval. 3 hours

GEOG 5010 Introduction to Geographic Information Systems Introduction to basic principles of Geographic Information Systems (GIS) with applications to a variety of problems using established data sources and repositories. Includes fundamental principles of cartographic design and communication. A first course in a curricular sequence developing GIS professional expertise. Open to upperclass and graduate students.
4 hours (3 – 1)

GEOG 5440 Studies in Economic Geography Studies in world and local patterns of agriculture, manufacture, transportation, or retail/service activities. In any term, the course focuses upon one of these four economic sectors.

1. Agriculture. Describes and analyzes agricultural systems throughout the world; focuses on selected crop-livestock systems and the changing character of agricultural land use in the United States.
2. Manufacturing. Examination of theories and strategies of industrial plant location, the relationship of industrialization to regional economic growth and development, and selected industry case studies evaluating the interrelations of locational, economic, technological, and political factors in the respective industry's historic evolution.
3. Transportation. Examination of the historic evolution of transport systems in developed and developing nations, transport factors in location theory, techniques of transport analysis, the urban transport dilemma, and competitive and complementary characteristics of the different transport modes.
4. Retail and Service. Examination of the evolution of the retail and service sector., the geography of retail and service firms, theories and strategies of retail and service firm location, and the relationship between retail and service sector and local economic development.

May be repeated for credit. Open to upperclass and graduate students. 2 to 3 hours

GEOG 5450 Studies in Human Geography Each course listed under this general title is a concentrated study of one of the principal subdivisions of human geography. The scope and principal themes of each specialized field are reviewed, with consideration given to current research on selected problems.

1. Cultural Geography. Techniques of spatial analysis applicable to the study of humans and their environment. The place of origin, diffusion and present distribution of selected cultural patterns will be traced with emphasis given to cultural traits which strongly influence human occupancy of the earth's surface.
2. Historical Geography. Studies of geographic and related features which have combined to influence the course of historical development. This course will concentrate on a particular region and/or period of time during each semester in which it is offered. Each specialization will be designated in the Schedule of Course Offerings .
3. Political Geography. General survey of the principles and the applied aspects of political geography; primary emphasis on the physical and cultural resource bases and conflicts of national states, the assessment of location, boundary delimitation and the territorial sea, politically-organized territories within the administrative hierarchy, and electoral geography.

May be repeated for credit. Open to upperclass and graduate students. 2 to 3 hours

GEOG 5530 Water Resources Management Examination of water resources management with emphasis on the effects of water uses and runoff on water quality and quantity. Topics include water resource systems, estimating consumptive and nonconsumptive water uses and runoff with computer models, and multiple socio-economic and hydrological factors in water resources management. Open to upperclass and graduate students.
3 hours

GEOG 5550 Contemporary Issues in Resources Management Examination of selected contemporary natural resource and environmental problems, such as questions of natural resource adequacy, environmental pollution, energy shortages, political and economic problems related to resource management, and individual studies of local environmental problems. Open to upperclass and graduate students. 3 hours

GEOG 5570 Environmental Impact Assessment Alteration of the natural and human environment for perceived economic and social benefits often has significant adverse consequences. Recognition of this problem is reflected in federal, state, and local laws and regulations requiring environmental impact statements. The course provides an introduction to the analysis and preparation of environmental impact assessments. Open to upperclass and graduate students. 3 hours

GEOG 5630 Surveying Techniques The theory and application of geographic techniques and instruments of field investigations: collection and analysis of field data, preparation and presentation of materials. The course is based primarily upon field operations. The purpose is to introduce students to the capabilities and limitations of traditional surveying techniques and the Global Positioning System (GPS). Students will gain a basic understanding of how satellite-based navigation systems operate and they will put into practice through a series of field exercises. Open to upperclass and graduate students. Prerequisite: GEOG 3010 or GEOG 5010. 4 hours

GEOG 5670 Spatial Analysis Introduction to fundamental principles and procedures of representation and analysis of geographic data, in a variety of applications. The course combines theoretical discussions with practical data analysis. Topics include geographic measurement and representation; methods and software for descriptive and inferential statistics, with emphasis on spatial data analysis; computer mapping techniques; geographic modeling; and exploration of data resources. Open to upperclass and graduate students. Prerequisite: STAT 3660 or STAT 6020. 3 hours

GEOG 5690 Geodatabase Design and GIS Workflows Principles and applications of geographic information systems (GIS). Designing, creating, populating, and using geodatabases and workflows. Emphasis is placed on developing solutions to problems involving spatial entities and attributes by employing logical conceptual analysis using the tools provided by a typical geographic information system. Open to upperclass and graduate students. Prerequisite: GEOG 3010 or GEOG 5010, with a grade of "C" or better. 4 hours (3 – 1)

GEOG 5710 Introduction to Community Development and Planning An introductory survey of community planning and development practices in America. Topics include concepts of community planning and development, evolution and development of planning thought and practice in America, the background of planning and zoning in American municipalities, traditional and contemporary approaches to planning, planning theory, elements of planning law and administration, and ethical issues in planning. Open to upperclass and graduate students. 3 hours

GEOG 5820 Remote Sensing of the Environment An introduction to the physical concepts and methodological foundations of air photo and satellite image interpretation, photogrammetry, and digital image processing. Students are also exposed to the physical principles that underlie electromagnetic radiation and its interactions with the earth-atmosphere system. Students who successfully complete this course will understand the capabilities and limitations of photographic and digital imagery obtained from aircraft and space-borne platforms. Open to upperclass and graduate students. 4 hours (3 – 1)

GEOG 5970 Independent Study Designed for highly qualified majors and graduate students who wish to study in depth some aspect of their field of specialization under a member of the departmental staff. Open to upperclass and graduate students. Prerequisite: Department approval. 1 to 3 hours

GEOG 6090 Studies in Regional Geography An investigation of selected topics in physical and human geography of a region, e.g., Latin America, Anglo-America, Europe. Regional concentration will vary from semester to semester, with the region being indicated at time of enrollment. May also be offered in conjunction with field studies to various areas. May be repeated for credit. Open to graduate students only. Prerequisite: Approval of the graduate advisor. 2 to 3 hours

GEOG 6200 Seminar in Physical Geography A review of current literature and recent developments in several disciplines which form the basis of physical geography. A final research project is required. Since each seminar emphasizes different subject areas, such as landforms, soils, and vegetation, this seminar may be repeated . Open to graduate students only. 2 to 3 hours

GEOG 6240 Seminar in Biogeography This graduate seminar will focus on theoretical and applied biogeography. Traditional concepts in biogeography, such as the physical and biological environmental variables that influence geographic regions and ranges, will be supplemented with current issues in biogeography, including such topics as food security, biodiversity, and global change. Discussion, short excursions, field techniques, GIScience, lecture and lab exercises will be used to explore current research trends in biogeography. Open to graduate students only. 3 hours

GEOG 6250 Climatology This course provides a detailed examination of the science of climatology and offers hands-on experience utilizing climatological data and methods to address environmental problems. Topics to be covered include the physics of climate, global climatic regions, climate feedback processes, paleoclimate and climate change, air pollution climatology, climatological data analysis methods, application of climatic processes and data to a wide variety of environmental problems. Open to graduate students only. Prerequisite: Instructor approval. 3 hours

GEOG 6260 Disaster Management This graduate course will focus on the physical and social dynamics of disaster management. Spatial and temporal variation of disasters and management will be investigated. Disaster planning, including mitigation, preparedness, response, and recovery will be highlighted. Open to graduate students only. 3 hours

GEOG 6280 Data Analysis in Climate Science Examination of characteristics of climate data and quantitative methods for analyzing large volumes of climate data. Topics include properties of climate data, time series analysis and trend test, parametric and non-parametric statistical models for climate weather/climate forecast models, and graphics for climate data presentation. Open to graduate students only. 3 hours

GEOG 6300 Climate Change and Geography This course takes an interdisciplinary approach to analyze paramount climate change issues from geographical perspectives. Topics include climate change science, geography of climate change, spatial analysis, environmental and human impacts of, response and adaptation to climate change at global, regional, and local scales. Case studies from different countries and disciplines will be used to facilitate active student participation in the course. Open to graduate students only. Prerequisite: Instructor approval. 3 hours

GEOG 6610 Geographic Research Problem formulation and research design are introduced in light of modern geographic thought and current practices. Other course emphases are sources of geographic information, search strategies, and the written presentation of research materials. Graduate students in geography are urged to complete this course as soon as possible. Open to graduate students only. 3 hours

GEOG 6620 History and Philosophy of Geography Development of geographic thought since antiquity. Examination of the evolution and development of modern geography as a professional discipline, including its roots, present status, and future directions. Open to graduate students only. 3 hours

GEOG 6650 Seminar in Geography Designed for the advanced student interested in analyzing problems related to various topics in geography. May be repeated once for credit. Open to graduate students only. Prerequisite: Instructor approval. 1 to 3 hours

GEOG 6660 Professional Development Seminar Students participate in selected activities related to professional development. These activities include critiques of professional presentations, participation in professional meetings, and presentations of papers to faculty and colleagues. May be repeated once for credit. Graded on a Credit/No Credit basis. Open to graduate students only. 1 hour

GEOG 6670 Project Management and Programming Principles and applications of GIS project management, including devising an efficient, innovative and practical solution to a real-world problem by acquiring,

and analyzing data using a GIS and advanced techniques in spatial analysis, spatial statistics, and/or cartographic programming. Discussion topics will include professionally relevant issues such as team management, budget and proposal development and customizing GIS with internal and external languages. Open to graduate students only. Prerequisite: GEOG 5010 3 hours

GEOG 6685 GIS and Internet Applications Principles and applications of GIS in the Internet environment. Topics to be covered may include WebGIS application tools, geospatial web services, geospatial mashups, participatory GIS applications, web-based data mining, ArcGIS API for JavaScript, and Mobile GIS. Open to graduate student only. Prerequisite: GEOG 5010 3 hours

GEOG 6690 Advanced GIS Seminar This course extends the focus of GEOG 5690, Geodatabase Design and GIS Workflows, from concepts and procedures to project applications and techniques in both individual projects and in seminar. Each student will be required to determine a Geographic Information Systems (GIS) problem and devise an efficient, innovative, and practical solution using advanced techniques in spatial analysis, spatial statistics, and cartographic programming. This course will increase the exposure to the state of the art in GIS software, theory, and practice. Seminar topics will include professionally relevant issues such as interfaces of GIS with spatial analysis, spatial statistics, remote sensing, and spatial remodeling and customizing GIS with internal and external programming languages, project design, and management. Open to graduate students only. Prerequisite: GEOG 5690. 3 hours

GEOG 6710 Landscape Ecology and Regional Planning This course examines the relatively new field of landscape ecology and how the analysis of landscape spatial structures can be used to improve land-use planning decisions. In landscape ecology, the analysis is based upon a model of interaction of a “mosaic” of “patches”, “corridors”, and “matrixes” on the landscape. Regional ecology extends this analysis to the interaction of landscape mosaics across regions. The seminar will focus on the patterns and changes of these mosaics, analyzing human uses and impacts on the landscape. Open to graduate students only. 3 hours

GEOG 6720 Community Analysis and Planning Techniques Techniques and methods used in community and regional planning analysis with emphasis on social, economic and location analysis. Topics include planning research methods, demographic analysis, and economic analysis. Open to graduate students only. Prerequisite: GEOG 5710 3 hours

GEOG 6730 Seminar in Community Development and Planning A detailed examination of the current practices of community development and planning in America. Topics will include comprehensive planning, community economic development, housing, downtown and neighborhood revitalization, environmental issues, and the community development practitioner. Open to graduate students only. Prerequisite: GEOG 5710 3 hours

GEOG 6820 Advanced Remote Sensing This course focuses on acquisition and interpretation of remotely sensed data, including data collection with several instruments. The main body of this course stresses interactive interpretation of digital image data collected from aircraft or satellites and manipulated within image processing/geographic information system software. Open to graduate students only. Prerequisite: GEOG 5820 3 hours

GEOG 7000 Master's Thesis Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisite: Department and Graduate College approval. 1 to 6 hours

GEOG 7100 Independent Research Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisite: Department approval. 2 to 6 hours

GEOG 7120 Professional Field Experience Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisite: Department approval. 2 to 12 hours

Geosciences

GEOS 5010 Geologic Communications and Presentations A seminar designed to introduce students to and improve student skills in the oral presentation of Geologic information. Students will critique talks given in the weekly departmental seminar. Students will make one oral presentation to a group of students and faculty. Course may be repeated for credit but only one credit will be applied towards major requirements. May be repeated for credit. Open to upperclass and graduate students. Prerequisite: Departmental approval. 1 hour

GEOS 5020 Problems in Geology and Earth Science Individual problems involving topical reading and/or research problems in earth sciences. May be repeated for credit. Open to upperclass and graduate students. 1 to 3 hours

GEOS 5060 Introduction to Soils Properties of natural and engineered soils. Interactions between soils and plants, microorganisms, water, atmosphere, and contaminants. Soil uses, remediation, and conservation. Open to upperclass and graduate students. 3 hours

GEOS 5090 Surface Water Hydrology Hydrology describes the waters of the earth, their occurrence, circulation and distribution, and their reaction with the environment. Emphasis is on quantitative aspects of surface water. Topics include, stream flow, precipitation, evapotranspiration, hydrographs, runoff, probability analysis and modeling. Open to upperclass and graduate students. 3 hours

GEOS 5120 Hydrogeology The study of surface water and groundwater with special emphasis on groundwater movement and relation to the geologic environment. Open to upperclass and graduate students. 3 hours

GEOS 5140 Isotope Hydrology Principles of isotope fractionation. Experimental techniques in isotope ratio measurements: mass spectrometry and laser spectroscopy. Carbon, oxygen, and hydrogen isotope systematics in the hydrologic cycle. Application of stable isotope techniques to study ground water - surface water interaction. Use of nitrogen isotope measurements in understanding ground water nitrogen cycling and fate of nitrate load. Introduction to developments in the application of radioactive dating techniques in hydrology. Open to upperclass and graduate students. Prerequisite: Instructor approval. 3 hours

GEOS 5200 Economic Geology Origin, occurrence, and utilization of metallic and non-metallic mineral deposits, and mineral fuels. Lecture three hours a week. Open to upperclass and graduate students. 3 hours

GEOS 5210 Geological and Environmental Remote Sensing The course provides rigorous (70% of student's effort) hands-on-exercises on the applications of remote sensing techniques in geological and in environmental sciences. The hands-on exercises are primarily based on case studies that were published in peer-reviewed articles, data downloaded from our receiving station, and/or data collected by the students using hand-held VNIR spectro-radiometer. In the process of solving the lab exercise, the students will master image processing techniques. The fundamentals of remote sensing will be covered as well, since the student cannot start dealing with applications unless he or she knows the fundamentals. Throughout the course, the students will work with a wide range of space-borne data sets including CORONA, Landsat MSS, Landsat TM, SPOT, ASTER, SIR-C, SRTM, AVIRIS, ASAR, and ERS.Open to upperclass and graduate students. 4 hours

GEOS 5230 Hazardous Waste Operation and Emergency Response Training in safety procedures for working on hazardous sites. Training in the safe handling of hazardous materials which might be encountered during drilling, soil sampling, or water sampling. Review of State and Federal regulations. Use of personal protection equipment. Satisfies OSHA 40 hour training requirements. Open to upperclass and graduate students. 1 hour

GEOS 5240 Remediation Design and Implementation Principles and techniques for the remediation or cleanup of ground water and soils contamination. Introduction to pump and treat systems, bioremediation, soil vapor extraction, air sparging, and others. Choosing the appropriate system and sizing it for

economical application to a specific site. Field trips required. Open to upperclass and graduate students. 1 hour

GEOS 5250 Surface Geophysics An introduction to the use of those surface geophysical methods used in the investigation of groundwater. Includes shallow seismic, electrical, and magnetic methods; and ground penetrating radar. Open to upperclass and graduate students. 1 hour

GEOS 5260 Principles and Practices of Aquifer Testing Introduction to the methods of aquifer testing with emphasis on step drawdown pump tests, forty-hour pumping test with recovery, slug tests and bail tests data processing, using computer software, water level recorders, data loggers and water level measuring equipment. Open to upperclass and graduate students. 1 hour

GEOS 5270 Principles of Well Drilling and Installation An introduction to hollow-stem auger drilling and well installation, rotary drilling with mud and air, cable tool drilling, monitoring well design, sample collection and description; cuttings, split spoon, and Shelby tube, borehole geophysics, and installation and development of wells. Open to upperclass and graduate students. 1 hour

GEOS 5280 Principles/Practices of Groundwater Sampling/Monitoring An introduction to state-of-the-art techniques for sampling, monitoring, and evaluating groundwater systems and surface water interactions. Includes quality control and assurance procedures, groundwater sampling equipment and procedures, field hydrochemical equipment and procedures, and vadose zone sampling of water and gas. Open to upperclass and graduate students. 1 hour

GEOS 5300 Plate Tectonics and Earth Structure Major tectonic features and internal structure of the earth in relation to plate tectonics, critical examination of the tenets of plate tectonics. Open to upperclass and graduate students. 3 hours

GEOS 5350 GIS Applications in Geological and Environmental Sciences The course provides rigorous hands-on-exercises (based on data from case studies) on the applications of statistical methods, GIS technologies, and other computer-based software to the management, analysis, and display of multidimensional, geological, hydrogeological, and environmental data sets (70% of student effort). The course will cover (30% of student effort) the fundamentals of spatial data analysis and GIS technologies as well, since the students cannot start dealing with applications unless they understand the fundamentals. In addition, students will be required to complete a research project using spatial data sets and acquired expertise. Open to upperclass and graduate students. 3 hours

GEOS 5360 Glacial Geology A study of the mechanics of glacial movement, processes of glacial erosion and deposition, and the distribution of glacial features in space and time. Special emphasis will be placed on the glacial geology of the Great Lakes area. Open to upperclass and graduate students. 3 hours

GEOS 5390 Geologic Mapping Field observations and geologic mapping. Rock-oriented mapping projects will be completed under supervision that requires observations and synthesis of rock descriptions, structural analyses, stratigraphic interpretations, and compilations of the geologic history of assigned study areas. Open to upperclass and graduate students. Prerequisites: (GEOS 3010 or GEOS 3350 or GEOS 5430) and GEOS 4300; or instructor approval. 3 hours

GEOS 5400 Igneous and Metamorphic Petrology Advanced discussion of origins and positions of igneous and metamorphic rocks in light of recent experimental evidence and concepts of global tectonics. Open to upperclass and graduate students. 4 hours

GEOS 5430 Petrology and Petrography The origins of igneous, sedimentary, and metamorphic rocks as interpreted from hand specimens, thin sections, principles of chemistry and physics, and descriptions of examples from around the world. Lecture topics are augmented by weekly laboratory studies and a required field trip. Open to upperclass and graduate students. Prerequisites: GEOS 3350, CHEM 1100 and CHEM 1110. 3 hours

GEOS 5450 Hazardous Waste Remediation Content includes chemical, physical, and biological processes affecting contaminants in the subsurface. Topics include environmental regulations, remediation, site characterization, contaminant characterization, detailed engineering and management considerations related to the design and operation of hazardous waste remediation systems involving water pollution, air pollution, solid waste, and groundwater pollution. Open to upperclass and graduate students. 3 hours

GEOS 5500 Environmental Field Geochemistry Students in this course will be introduced to a variety of environmental field and laboratory analytical techniques, including field sampling protocols, basic aqueous geochemistry techniques, ion chromatography, and UV/Vis spectrophotometry. Using these techniques, students will design and conduct an assessment of water quality in a local environmental system (e.g., eutrophication or salinization of local lakes, or other contamination of local surface or groundwater systems). Students will present their findings to the local community through a written report and an oral/poster presentation. Students may be expected to travel to a local field site and to work outdoors, including in canoes, under a variety of weather conditions. Open to upperclass and graduate students.
Prerequisites: Either (GEOS 3350 or GEOS 2320); or ENVS 2150, CHEM 1100 and CHEM 1110. 3 hours

GEOS 5550 Introduction to Geochemistry An introduction to high and low temperature geochemistry. Topics to be discussed include cosmochemistry, crystal chemistry, thermodynamics and kinetics, aqueous geochemistry, stable and radiogenic isotope geochemistry, organic geochemistry, and biogeochemistry. Open to upperclass and graduate students. 3 hours

GEOS 5600 Introduction to Geophysics Seismology, gravity, geomagnetism, electrical resistivity, and heat measurements applied to the determination of the internal structure of the earth. Two lectures and three hours of practical laboratory-introduction to geophysical instrumentation. Open to upperclass and graduate students. 3 hours

GEOS 5610 Reflection Seismology Reflection seismology and related techniques as applied to petroleum exploration and deep crustal exploration. Theoretical background, data collection, data processing and interpretation will be discussed. Open to upperclass and graduate students. 3 hours

GEOS 5620 Gravity and Magnetic Exploration Gravity and magnetic methods applied to tectonic, mineral exploration, hydrogeologic, and crustal studies. Theoretical background, instrumentation, surveying techniques, data reduction, processing, computer modeling, and interpretation will be discussed. Two lectures and three hours of laboratory, problem solving, and field exercises. Open to upperclass and graduate students. 3 hours

GEOS 5630 Electrical Methods Resistivity sounding and profiling, induced polarization, spontaneous potential, electromagnetic methods using natural and artificial fields. Two lectures and 3 hour laboratory with field studies and laboratory modeling. Open to upperclass and graduate students. 3 hours

GEOS 6000 Hydrogeochemistry Geochemical origin and characteristics of surface water and groundwater; equilibrium thermodynamics, the carbonate system, redox processes, ion exchange, organic compounds and isotopes. Open to graduate students only. Prerequisite: GEOS 5120 or instructor approval. 3 hours

GEOS 6050 Groundwater Modeling Study of groundwater flow and contaminant transport rates using analytical and numerical models. Open to graduate students only. Prerequisite: GEOS 5120 3 hours

GEOS 6110 Advanced Stratigraphy Introduction and application of cycle and sequence stratigraphy from a rock-based perspective. Emphasis on recognizing vertical stacking patterns and sequence hierarchy of depositional units identified from outcrop and subsurface data sets for application to reservoir modeling. A course field trip to modern environments (Florida, Bahamas or Belize) or ancient carbonate systems (Paradox Basin, Utah or Guadalupe Mountains, New Mexico and Texas) may be required. Student projects will

include logging, description, and interpretation of cores and slabs at the mesoscopic level at the MGRRE facility. Open to graduate students only. Prerequisite: GEOS 3350 or department approval. 3 hours

GEOS 6120 Advanced Hydrology Analytical and numerical analysis of groundwater flow and contaminant transport. Topics include well hydraulics, flow in unsaturated soils, multiphase flow, and advection-dispersion. Open to graduate students only. Prerequisite: GEOS 5120 3 hours

GEOS 6130 Wetlands Hydrology Introduction to hydrologic function of wetlands, wetlands classification, and the relationship between hydrology and soil and plants. Emphasis will be placed on the use of these parameters in wetlands delineation. Open to graduate students only. Prerequisite: GEOS 5120 or instructor approval. 3 hours

GEOS 6150 Contaminant Hydrology Theory and field methods related to the transport of contaminants in groundwater. Includes theoretical considerations, case histories, law, analysis of problems, and preparation of hydrogeological reports. Prerequisite: GEOS 5120 3 hours

GEOS 6170 Stable Isotope Geochemistry Application of stable isotopes in the study of hydrologic cycle, global change, and atmospheric processes. Cosmochemical implications of stable isotope systematics in extra-terrestrial samples. Open to graduate students only. Prerequisite: General chemistry. Basic knowledge of physical and organic chemistry. 3 hours

GEOS 6300 Structural Analysis The theory of and methods involved in the geometric, kinematic, and dynamic analysis of deformed rock bodies. All scales of observation are considered from hand specimens to large map areas. Open to graduate students only. Prerequisites: GEOS 4300 3 hours

GEOS 6340 Research in Geology and Earth Science Advanced readings or research in an area to be selected after consultation with a supervising staff member. May be repeated for credit (for no more than a total of six hours). Open to graduate students only. 1 to 4 hours

GEOS 6450 Clastic Petrology and Petrophysics Petrographic, petrologic, and petrophysical analysis of clastic sedimentary rocks. Investigate the primary and secondary mineralogy and textures of clastic sedimentary rocks through the use of a wide variety of analytical techniques. Use petrographic data to interpret and predict sediment provenance, depositional environments, diagenetic modification and burial history. Apply petrologic analysis to the interpretation of petrophysical data, including down-hole wire line log data, in the evaluation of fluid flow in geological media, especially geological reservoirs (geological media suitable for the extraction or injection of fluids). Periodic field trips and/or visits to the Michigan Geological Repository for Research and Education (MGRRE) facility for access to analytical instruments and sample material. Open to graduate students only. Prerequisites: GEOS 4330 and GEOS 4350, or instructor approval. 3 hours

GEOS 6460 Carbonate and Evaporite Depositional Systems Processes, characteristics, and relationships of modern and ancient carbonate and evaporite systems. A course field trip to modern environments (Florida, Bahamas or Belize) or ancient carbonate systems (Paradox Basin, Utah or Guadalupe Mountains, New Mexico and Texas) may be required. Student projects will include logging, description, and interpretation of cores and slabs at the mesoscopic level at the MGRRE facility. Two lectures and one 3-hour laboratory per week. Open to graduate students only. Prerequisites: GEOS 4330 and GEOS 4350. 3 hours

GEOS 6500 Topics in Geology and Earth Science An intensive study of specific subjects in the area of Earth Science as listed. Subject offered will be announced in advance. May be repeated for credit. Open to graduate students only. Prerequisite: Instructor approval. 2 to 4 hours

GEOS 6550 Quantitative Basin Analysis Theory and practical application of sequence stratigraphy and backstripping; two fundamental tools of the petroleum industry and academic community. Open to graduate students only. Prerequisites: GEOS 4350 and GEOS 5600; or instructor approval. 3 hours

GEOS 6560 Clastic Depositional Systems Analysis of terrigenous clastics-dominated, sedimentary basin fill. Controls on sedimentary basin fill and sequence stratigraphy; high resolution sequence

stratigraphy at outcrop, core, and well log scale. Clastic depositional systems analysis and sedimentary facies models. Sedimentary facies analysis, especially for geological reservoirs, and process oriented sedimentology. Periodic field trips and/or visits to the Michigan Geological Repository for Research and Education (MGRRE) facility for access to analytical instruments and sample material. Open to graduate students only. Prerequisite: GEOS 4350 or instructor approval. 3 hours

GEOS 6650 Carbonate Petrology This course will investigate the genetic origin of carbonate rocks as well as the chemical, physical, and mineralogical changes to these rocks during diagenesis. The impact of these changes on the ability of carbonate rocks to host and transmit fluids (e.g., oil, gas, water) will be a central theme, as will the various types of data and the widely available analytical instrumentation commonly used to study limestone petrogenesis. Open to graduate students only. Prerequisites: GEOS 4350 or GEOS 6110 or GEOS 6460 or instructor approval. 3 hours

GEOS 7000 Master's Thesis Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisite: Department and Graduate College approval. 1 to 6 hours

GEOS 7100 Independent Research Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisite: Application and Department approval. 2 to 6 hours

GEOS 7120 Professional Field Experience Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisite: Application and Department approval. 2 to 12 hours

GEOS 7300 Doctoral Dissertation Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisites: Department and Graduate College approval. 1 to 15 hours

GEOS 7350 Graduate Research Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisite: Department approval. 2 to 10 hours

Global and International Studies

GIST 5000 Topics in Global and International Studies Topics may be listed in Schedule of Course Offerings. May be repeated for credit. Open to upperclass and graduate students. 1 to 3 hours

History

HIST 5000 Topics in History Courses in this topical area explore regional, political, cultural, economic and social issues in various geographical, chronological, or thematic fields of history. Specific topics will be listed in the Schedule of Course Offerings. May be repeated for credit under different topics. Open to advanced Open to upperclass and graduate students. 3 hours

HIST 5150 Topics in Public History Selected topics in aspects of public history including museology, historic preservation and cultural resource management, historical administration, information science, and applied research. Specific topics will be listed in Schedule of Course Offerings. May be repeated for credit under different topics. Open to upperclass and graduate students. 3 hours

HIST 5245 Topics in American History Courses in this topical area explore regional, political, cultural, economic, and social themes in the history of North America or the United States from the

colonial era to the present. Specific topics will be listed in the Schedule of Course Offerings. Open to upperclass and graduate students. 3 hours

HIST 5405 Topics in Ancient History Courses in this topical area explore regional, political, cultural, economic, and social themes in the history of the ancient world. Specific topics will be listed in Schedule of Course Offerings. May be repeated for credit under different topics. Open to upperclass and graduate students. 3 hours

HIST 5495 Topics in European History Courses in this topical area explore regional, political, cultural, economic and social themes in European history from the ancient world to the present. Specific topics will be listed in the Schedule of Course Offerings. May be repeated for credit under different topics. Open to upperclass and graduate students. 3 hours

HIST 5500 Topics in Medieval History Courses in this topical area explore regional, political, cultural, economic, and social themes in the history of the medieval world. Specific topics will be listed in the Schedule of Course Offerings. May be repeated for credit under different topics. Open to upperclass and graduate students. 3 hours

HIST 5501 Medieval History Proseminar An overview of major themes and scholarly debates in medieval history (ca. 500-1500) covering regions including the Mediterranean basin, northern Europe, and adjacent regions. The course provides a capstone for advanced undergraduates and a foundation for advanced study for graduate students. Open to upperclass and graduate students. Prerequisite: Grade of “B” or better in a 4000-level history baccalaureate writing course; or graduate standing; or instructor approval. 3 hours

HIST 5850 Topics in Asian, African, and Latin American History Courses in this topical area explore regional, political, cultural, economic, and social themes in the history of Asia, Africa, South America, Central America, Mexico, or the Caribbean from ancient times to the present. Specific topics will be listed in the Schedule of Course Offerings. May be repeated for credit under different topics. Open to upperclass and graduate students. 3 hours

HIST 5910 Topics in Historical Theory and Method Selected theoretical, methodological, and interpretive issues in the field of history, possibly including methodologies from related social science and humanities disciplines. Topics will be listed in Schedule of Course Offerings. May be repeated for credit under different topics. Open to upperclass and graduate students. 3 hours

HIST 6010 Historiography Study of the major figures, ideas, and developments in historiography. Students may conduct research in their fields of concentration. Open to graduate students only. 3 hours

HIST 6030 Readings in History Intensive study of selected issues and problems in historical studies from various chronological, geographical, or thematic areas. Topics listed in the Schedule of Course Offerings. May be repeated for credit under different topics. Open to graduate students only. 3 hours

HIST 6050 Readings in American History Intensive study of historiography and major works pertaining to the history of North America or the United States from the colonial era to the present. Topics listed in the Schedule of Course Offerings. May be repeated for credit under different topics. Open to graduate students only. 3 hours

HIST 6090 Ethnohistory Seminar Ethnohistory combines research techniques and theoretical approaches from the fields of history and anthropology to elucidate the histories and cultural contexts of groups who, most often, have not left their own written record of their history and culture. Readings may address such topics as culture contact, colonialism, material analysis, historiography, oral history, gender, historical archaeology, ethnography, tribalization, globalization, and modernization. May be repeated for credit. Open to graduate students only. This course is cross-listed with ANTH 6090. 3 hours

HIST 6115 Readings in Ancient History Intensive study of historiography and major works pertaining to the ancient world. Topics listed in the Schedule of Course Offerings. May be repeated for credit under different topics. Open to graduate students only. 3 hours

HIST 6120 Readings in Medieval History Intensive study of historiography and major works pertaining to the medieval world. Topics listed in the Schedule of Course Offerings. May be repeated for credit under different topics. Open to graduate students only. 3 hours

HIST 6160 Readings in European History Intensive study of historiography and major works pertaining to European history from the ancient world to the present. Topics listed in the Schedule of Course Offerings. May be repeated for credit under different topics. Open to graduate students only. 3 hours

HIST 6180 Readings in Global and Comparative History Intensive study of historiography and major works pertaining to the study of world or transnational history, involving topics such as colonialism, nationalism, international conflict and cooperation, economic integration, gender, etc. Topics listed in Schedule of Course Offerings. May be repeated for credit under different topics. Open to graduate students only. 3 hours

HIST 6190 Readings in Public History Intensive study of historiography and major works pertaining to the study and practice of public history, which might include museology, historic preservation, cultural resource management, information science, heritage tourism, and applied research. Topics listed in the Schedule of Course Offerings. May be repeated for credit under different topics. Open to graduate students only. 3 hours

HIST 6200 Bibliographical Research Research in the literature of specialized topics and issues as they pertain to thesis or dissertation preparation, and preparation of a bibliographical essay. Topics may be listed in Schedule of Course Offerings. May be repeated for credit under different topics. Open to graduate students only. Prerequisite: Departmental approval. 1 to 3 hours

HIST 6220 Synthetic Essay: Major Field Supervised preparation of synthetic essay in the major field. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Restricted to doctoral students in history usually in their fifth semester. Prerequisite: Approval of the Director of Graduate Studies. Students must demonstrate proficiency in one or more languages other than English (as specified by field or committee as outlined in Graduate Handbook) through a course or courses at the 2010 level, a summer graduate-course sequence in French or German (FREN or GER 5000 and 5010), or a Graduate Reading Proficiency Exam. 2 hours

HIST 6221 Synthetic Essay: Minor Field Supervised preparation of synthetic essay in the minor field. Graded on a Credit/No Credit basis. Open to graduate students only. Restricted to doctoral students in history usually in their fifth semester. Prerequisite: Approval of the Director of Graduate Studies. Students must demonstrate proficiency in one or more languages other than English (as specified by field or committee as outlined in Graduate Handbook) through a course or courses at the 2010 level, a summer graduate-course sequence in French or German (FREN or GER 5000 and 5010), or a Graduate Reading Proficiency Exam. 1 hour

HIST 6222 Synthetic Essay: Outside Field Supervised preparation of synthetic essay in the minor outfield. Graded on a Credit/No Credit basis. Open to graduate students only. Restricted to doctoral students in history usually in their fifth semester. Prerequisite: Approval of the Director of Graduate Studies. Students must demonstrate proficiency in one or more languages other than English (as specified by field or committee as outlined in Graduate Handbook) through a course or courses at the 2010 level, a summer graduate-course sequence in French or German (FREN or GER 5000 and 5010), or a Graduate Reading Proficiency Exam. 1 hour

HIST 6223 Dissertation Proposal Supervised preparation of the dissertation proposal. Graded on a C/NC basis. Open to graduate students only. Restricted to doctoral students in history usually in their sixth semester. Prerequisite: Approval of Director of Graduate Studies. 3 to 6 hours

HIST 6250 Topics in Cultural Resource Management Intensive study of selected methods and theoretical approaches to cultural resource practice. Topics listed in Schedule of Course Offerings. May be repeated for credit under different topics. Open to graduate students only. 3 hours

HIST 6350 Research Techniques in Medieval History Introduction to the sources and methods used in the study of medieval Europe. Interpretation of written sources, with emphasis on authenticating, dating and localizing these materials. Survey of techniques for interpreting artifacts and material culture. Open to graduate students only. 3 hours

HIST 6400 Museums Practicum Supervised field assignment with focus on a research project dealing with a specific aspect of museum or site administration such as registration, collections development, conservation, interpretation, etc. May be repeated for credit to a maximum of six hours. Open to graduate students only. Prerequisite: Departmental approval. 3 to 6 hours

HIST 6440 Material Culture Social and cultural studies of artifacts, public and domestic space, and the social construction of the built environment in selected historical periods. Topics listed in Schedule of Course Offerings. May be repeated for credit under different topics. Open to graduate students only. 3 hours

HIST 6500 Special Projects Participation in departmental research and interpretive projects. Topics may be listed in Schedule of Course Offerings. May be repeated for credit to a maximum of six hours. Open to graduate students only. Prerequisite: Departmental approval. 1 to 3 hours

HIST 6730 Research Seminar in History Advanced research in selected issues and problems in historical studies from various chronological, geographical, or thematic areas. Topics listed in the Schedule of Course Offerings. May be repeated for credit under different topics. Open to graduate students only. 3 hours

HIST 6750 Research Seminar in American History Advanced research in North American or United States history from the colonial era to the present. Topics listed in Schedule of Course Offerings. May be repeated for credit. Open to graduate students only. 3 hours

HIST 6815 Research Seminar in Ancient History Advanced research in the history of the ancient world. Topics listed in the Schedule of Course Offerings. May be repeated for credit. Open to graduate students only. 3 hours

HIST 6820 Research Seminar in Medieval History Advanced research in the history of the medieval world. Topics listed in Schedule of Course Offerings. May be repeated for credit. Open to graduate students only. Prerequisites: HIST 6350 or instructor approval. 3 hours

HIST 6860 Research Seminar in European History Advanced research in European history from the ancient world to the present. Topics listed in Schedule of Course Offerings. May be repeated for credit. Open to graduate students only. 3 hours

HIST 6880 Research Seminar in Global and Comparative History Advanced research in world or transnational history. Topics listed in Schedule of Course Offerings. May be repeated for credit under different topics. Open to graduate students only. 3 hours

HIST 6980 College Teaching and Professional Activity Introduces students to the full range of teaching and other professional activities of historians, including syllabus preparation, class presentations, evaluation methods, grant applications, publishing, conference presentations, vita development, and preparation for the job market. Open to graduate students only. 3 hours

HIST 7000 Master's Thesis Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only.

Prerequisite: Department and Graduate College approval. 1 to 6 hours

HIST 7100 Independent Research Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisite: Department approval. 2 to 6 hours

HIST 7120 Professional Field Experience Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisite: Department approval. 2 to 12 hours

HIST 7300 Doctoral Dissertation Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisites: Department and Graduate College approval. 1 to 15 hours

HIST 7350 Graduate Research Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisite: Department approval. 2 to 10 hours

International and Area Studies

INTL 6040 Special Topics Abroad Graduate student experiences conducted outside the United States. Topics listed in the Schedule of Classes. May be repeated for credit. Students may receive up to six hours in any combination of departments as described provided the seminar is planned with that combination in mind. No student will receive credit under any of the course plans indicated here for work done in seminars planned and conducted by other institutions or for work done independent of seminars planned by the College of Arts and Sciences. Open to graduate students only. Prerequisite: Approval from the student's chairperson and/or graduate advisor, and WMU Study Abroad (Haenicke Institute for Global Education). 1 to 9 hours

INTL 6300 Education Abroad – WMU Programs Graduate student participation in approved programs of study in a college or university outside the United States administered and organized by Western Michigan University Study Abroad. Credit is awarded based on transcript from host university. May be repeated for up to 32 credit hours. Open to graduate students only. Prerequisite: Approval from the student's chairperson and/or graduate advisor, and WMU Study Abroad (Haenicke Institute for Global Education). 1 to 19 hours

INTL 6310 Education Abroad – Non WMU Programs Graduate student participation in approved programs of study in a college or university outside the United States administered by Western Michigan University Study Abroad but organized by an institution other than Western Michigan University. Credit is awarded based on transcript from host university. May be repeated for up to 32 credit hours. Open to graduate students only. Prerequisite: Approval from the student's chairperson and/or graduate advisor, and WMU Study Abroad (Haenicke Institute for Global Education). 1 to 19 hours

Mathematics

MATH 5070 Numerical Analysis I The analysis and use of numerical algorithms for the solution of nonlinear equations, systems of linear equations, interpolation, numerical differentiation and integration. Open to upperclass and graduate students. Prerequisites: MATH 3740 and a computer programming language beyond Basic, e.g., FORTRAN or C. 3 hours

MATH 5100 Applied Matrix Algebra A second course in linear algebra with emphasis on linear systems, inner products, eigenvalues, eigenvectors, matrix decompositions, and their applications. Topics may include LU, QR and singular value decompositions, as well as symmetric, positive definite, and Hermitian matrices and the spectral theorem. Open to upperclass and graduate students. Prerequisites: MATH 2300 or MATH 3740. 3 hours

MATH 5220 Introduction to Topology Topics to be chosen from: Topological spaces and continuous functions, metric spaces, connectivity, separation axioms, compactness, product and quotient spaces, paracompactness, and manifolds. Open to upperclass and graduate students. Prerequisite: MATH 3300 or MATH 5700. 3 hours

MATH 5270 Differential Geometry of Curves and Surfaces An introduction to Riemannian Geometry with emphasis on curves and surfaces. Topics may include isometries, orientation, differential forms, curvature, metrics, and geodesics. Open to upperclass and graduate students. Prerequisites: MATH 2720 and either (MATH 2300 or MATH 3740). MATH 3140 is recommended. 3 hours

MATH 5300 Linear Algebra Properties of finite dimensional abstract vector spaces, linear transformations, and matrix algebra are studied. Open to upperclass and graduate students. Prerequisite: MATH 3300 3 hours

MATH 5501 Teaching of Middle School Mathematics This course considers curriculum issues and trends in middle school mathematics focusing on methods and materials for teaching mathematics effectively to middle school students. Activity and laboratory approaches for teaching mathematics are emphasized. This class has four contact hours per week to accommodate student collaborations and field experiences in local schools. Open to upperclass and graduate students. Restricted to majors in Elementary/Middle School Mathematics. Prerequisite: MATH 5540 with a grade of "C" or better, or instructor approval. 3 hours

MATH 5511 Computing Technology in Middle School Mathematics This course introduces uses of computing technology to enhance and extend the learning of mathematical topics in middle grades through secondary school. Emphasis is placed on the use of technology in problem solving and concept development. A graphing calculator is required. This course has four contact hours per week to accommodate student collaborations and use of specialized computer software. Open to upperclass and graduate students. Restricted to majors in Elementary/Middle School Mathematics. Prerequisite: MATH 5501 and MATH 5550 with a grade of "C" or better, or instructor approval. 3 hours

MATH 5531 Number Systems and Proportional Reasoning for Middle Grades Teachers This course provides an opportunity for middle school teachers to enhance their ability to reason proportionally through explorations of linearity and right triangle trigonometry with a focus on inquiry and the use of digital tools. Attention will be given to multiple representations (e.g., verbal descriptions, table of values, graphs, and symbolic function rules) of the proportional relationships. Similarities and differences among the systems on integers, rational numbers, and real numbers will also be examined along with the historical development of these number systems. May be taken in conjunction with MATH 3520. Open to upperclass and graduate students. Restricted to majors and minors in Elementary/Middle School Mathematics. Prerequisites: MATH 1500, MATH 1510, and MATH 2650 with a grade of "B" or better in all prerequisites, or instructor approval. 4 hours

MATH 5540 Functions and Modeling for Middle Grades Teachers This course provides an opportunity for middle school teachers to both deepen and expand their understanding of functions through the exploration of linear and exponential function families as well as power functions, polynomial functions, and common logarithmic functions. Attention will be given to multiple representations (e.g., verbal descriptions, tables of values, graphs, and symbolic function rules), to special characteristics of functions (e.g., patterns of change, intercepts, extrema, end behavior), and to modeling with functions. Digital tools will be used throughout the course to facilitate student learning. Open to upperclass and graduate students. Restricted to majors and minors in Elementary/Middle School Mathematics. Prerequisites: MATH 3520 with a grade of "B" or better and MATH 5531 with a grade of "C" or better, or instructor approval. 4 hours

MATH 5550 Concepts of Calculus for Middle Grades Teachers This course provides an opportunity for middle school teachers to extend their understanding of function and develop an understanding of the conceptual underpinnings of differential and integral calculus through inquiry and applied problem solving that makes extensive use of digital tools. Attention will be given to historical perspectives of calculus. May be taken in conjunction with MATH 5501. A graphing calculator is required. For specific model see the Mathematics department website. Open to upperclass and graduate students. Restricted to majors in Elementary/Middle School Mathematics. Prerequisites: MATH 5540 with a grade of "C" or better or instructor approval. 4 hours

MATH 5700 Advanced Calculus I Properties of real numbers, Cauchy sequences, series, limits, continuity, differentiation, Riemann integral, sequences and series of functions. Open to upperclass and graduate students. Prerequisites: MATH 2720 and 3140. MATH 3300 is recommended. 4 hours

MATH 5710 Advanced Calculus II Topology of n-dimensional space, continuity and differentiability of functions of one variable; Riemann-Stieltjes integral; convergence of sequences and series of functions; Fourier series; analysis of functions of several variables. Open to upperclass and graduate students. Prerequisite: MATH 5700 or approval of advisor. 3 hours

MATH 5720 Vector Calculus and Complex Variables Functions of several variables, implicit and inverse functions, Jacobians, multiple integrals, Green's Theorem, divergence, curl, the Laplacian, Stokes' Theorem, analytic functions, Laurent expansions, residues, argument principle, and conformal mapping. Open to upperclass and graduate students. Prerequisite: MATH 3740 4 hours

MATH 5740 Advanced Differential Equations Series solutions at ordinary and singular points of linear ordinary differential equations, Bessel and Legendre functions, self-adjoint boundary value problems, Fourier series, solution of partial differential equations by separation of variables. Open to upperclass and graduate students. Prerequisite: MATH 3740 3 hours

MATH 5800 Number Theory Diophantine equations, congruences, quadratic residues, and properties of number-theoretic functions. Open to upperclass and graduate students. Prerequisite: MATH 3300 3 hours

MATH 5900 In-Service Professional Development in Mathematics This course develops specific professional skills related to the teaching and learning of pre-college mathematics. Final course outcomes have demonstrated applications to the mathematics classroom. This course may be repeated for credit. Each offering of MATH 5900 will be given an appropriate subtitle which will be listed on the student's official transcript. Students may earn up to three hours of credit for any given subtitle. Credit hours may be applied to continuing teacher certification programs with approval of the Teacher Certification Office, but will not be applicable to a new endorsement in mathematics nor to any graduate program within the Department of Mathematics. Graded on a Credit/No Credit basis. Prerequisite: Instructor approval. 1 to 3 hours

MATH 5990 Independent Study in Mathematics Advanced students with good scholastic records may elect to pursue independently the study of some topic having special interest for them. Topics are chosen and arrangements are made to suit the needs of each particular student. May be repeated for credit. Open to upperclass and graduate students. Prerequisite: Department approval. 1 to 6 hours

MATH 6020 Mathematical Modeling I This course considers the methodology of modeling a series of practical problems. The mathematical tools used may include dimensional analysis, optimization, differential and difference equations, graph theory and network flow theory. The practical problems may include population dynamics, economic theory of prices and production, scale models, scheduling problems, pollution, social group interaction, epidemics, and facility location. Open to graduate students only. Prerequisite: MATH 5740 or instructor approval. 3 hours

MATH 6050 Optimization This course will cover one or several topics from the area of optimization. The topic(s) may include nonlinear programming, dynamic programming, optimal control, variational analysis, discrete optimization, stochastic optimization, and network optimization. If the material covered is significantly different, this course may be repeated for credit with approval of the instructor. Open to graduate students only. Prerequisites: MATH 2720 and instructor approval. 3 hours

MATH 6070 Numerical Analysis II The analysis and use of numerical algorithms for the solution of ordinary and partial differential equations, and approximation theory. Open to graduate students only. Prerequisite: MATH 5070 3 hours

MATH 6080 Linear Programming Linear inequalities; convex geometry; optimization in linear systems; zero-sum games; applications. Open to graduate students only.Prerequisite: An introductory course in linear algebra. 3 hours

MATH 6090 Studies in Applied Math Advanced work organized around topics related to the field of study indicated at the time the course is scheduled. May be repeated for credit. Open to graduate students only. 3 hours

MATH 6110 Mathematical Applications An introduction to the philosophy of, machinery for, and methodology in applications of mathematics. Topics will be chosen from graph theory, linear algebra, numerical approximation, optimization and graphical linear programming, probability, and linear differential equations. This course is primarily for teachers and ordinarily will not apply towards the Master of Arts in Mathematics. Open to graduate students only. Prerequisite: Advisor approval. 3 hours

MATH 6150 Intermediate Analysis This course will include the following topics: limits, continuity, differentiation, integration, applications. It will stress concepts rather than techniques. Summer Institute students only. This course is primarily for teachers and ordinarily will not apply towards the Master of Arts in Mathematics. Open to graduate students only. Prerequisite: Advisor approval. 3 hours

MATH 6160 Survey of Algebra This course will discuss groups, rings, integral domains and fields, including such topics as homomorphisms and isomorphisms, subalgebras and ideals, with examples involving permutation groups, transformation groups, polynomial rings and finite fields. This course is primarily for teachers and ordinarily will not apply towards the Master of Arts in Mathematics. Open to graduate students only. Prerequisite: Advisor approval. 3 hours

MATH 6170 Survey of Discrete Mathematics The principle objectives of this course are for students to obtain an understanding of discrete and combinatorial mathematics. The course will process through the study of elementary topics such as number sequences and generating functions to advanced topics such as exponential generating functions and plane partitions. This course is primarily for teachers and ordinarily will not apply towards the Master of Arts in Mathematics. Open to graduate students only. Prerequisite: Approval of advisor from the Master of Arts in Mathematics Education program. 3 hours

MATH 6210 Algebraic Topology—Fundamental Group Topics may include: Homotopy, the fundamental group, covering spaces, the classification of covering spaces, the classification of compact surfaces, the Seifert-Van Kampen Theorem, and applications. Open to graduate students only.Prerequisite: MATH 5220 3 hours

MATH 6240 Algebraic Topology—Homology Theory Topics will include simplicial complexes, homology and cohomology theories, including singular homology theory. Open to graduate students only. Prerequisite: MATH 5220 3 hours

MATH 6250 Differential Topology Topics may include: Differentiable manifolds and smooth maps, tangent bundles, immersions, embeddings, submanifolds, transversality, Sard's Theorem, intersection theory, and additional topics. Open to graduate students only.Prerequisite: MATH 5220 3 hours

MATH 6300 Abstract Algebra I A general study of groups, rings, and modules. A specific study of finite groups, polynomial rings, and Euclidean domains. Open to graduate students only. Prerequisite: MATH 5300 3 hours

MATH 6310 Abstract Algebra II A continuation of MATH 6300. Modules, structure theory of modules over principal ideal domains, applications to finitely generated abelian groups, rational and Jordan canonical forms of a linear transformation, bilinear and quadratic forms. Open to graduate students only. Prerequisite: MATH 6300 3 hours

MATH 6370 Numerical Linear Algebra The analysis and use of numerical algorithms for solving problems from linear algebra, including matrix norms, singular value decompositions, Gaussian elimination, least

squares methods, eigenvalues and iterative methods. Open to graduate students only. Prerequisites: MATH 5070 and either (MATH 5100 or MATH 5300). 3 hours

MATH 6390 Studies in Algebra Advanced work organized around topics related to the field of study indicated in the above title. May be repeated for credit. Open to graduate students only. 3 hours

MATH 6400 Graph Theory I This course and MATH 6410 cover the following topics: Fundamental concepts; eulerian graphs; adjacency and incidence matrices; trees; planar graphs; graph embeddings; connectivity; hamiltonian graphs; matchings; factorization; graphs and groups; Cayley color graphs; line graphs; the Reconstruction Problem; spectra of graphs; graph and map colorings; extremal graph theory; Ramsey theory. Open to graduate students only. Prerequisite: Advisor approval. 4 hours

MATH 6410 Graph Theory II Continuation of MATH 6400. Open to graduate students only. Prerequisite: MATH 6400 4 hours

MATH 6440 Graphs, Groups, and Surfaces Study of the interaction of graphs, groups, and surfaces. Topics covered include map-coloring problems, symmetrical maps, automorphism groups of graphs, Cayley graphs of groups, genus of graphs, genus of groups, generation of block designs, and applications to church bell ringing. Open to graduate students only. Prerequisite: Instructor approval. 3 hours

MATH 6450 Studies in Combinatorics Advanced work organized around topics related to the field of study indicated in the above title. May be repeated for credit. Open to graduate students only. Prerequisite: Instructor approval. 3 hours

MATH 6460 Combinatorics This course is divided into two parts. The first part gives a gentle introduction to the subject and covers basic counting techniques (including the inclusion-exclusion principle), recurrence relations and generating functions, and discrete probability with the basic probabilistic method. The second part deals with more challenging topics such as combinatorial designs (including Steiner systems), posets (including the Möbius function), enumeration under group action, and extremal set theory (including Sperner's and intersecting families, and the Littlewood-Offord problem). Open to graduate students only. Restricted to master's and doctoral students in computational mathematics, mathematics education, collegiate math education, or mathematics. 3 hours

MATH 6490 Studies in Geometry Advanced work organized around topics related to the field of study indicated in the above title. May be repeated for credit. Open to graduate students only. Prerequisite: Advisor approval. 3 hours

MATH 6510 Studies in Teaching Elementary School Mathematics This is an advanced methods class devoted to analysis of current theoretical and research-based perspectives on mathematics teaching and learning and their implications for instructional practice and evaluation of student performance at the elementary school level. Explicit attention is given to the impact of technology on the teaching/learning process. This course is primarily for teachers and ordinarily will not apply towards the Master of Arts in Mathematics. Open to graduate students only. Prerequisite: Advisor approval. 3 hours

MATH 6530 Studies in Teaching Secondary School Mathematics This is an advanced methods class devoted to analysis of current theoretical and research-based perspectives on mathematics teaching and learning and their implications for instructional practice and evaluation of student performance at the secondary school level. Explicit attention is given to the impact of technology on the teaching/learning process. This course is primarily for teachers and ordinarily will not apply towards the Master of Arts in Mathematics. Open to graduate students only. Prerequisite: Advisor approval. 3 hours

MATH 6540 Secondary School Mathematics Curriculum Studies Participants in this course examine curricular issues and trends in secondary school mathematics and analyze recent experimental and commercial curriculum materials in one of four strands of mathematics: algebra, geometry, probability and statistics, or discrete mathematics . This course is primarily for teachers and ordinarily will not apply towards the Master of Arts in

Mathematics. May be repeated for credit with the approval of the student's advisor. Open to graduate students only. Prerequisite: Advisor approval. 3 hours

MATH 6550 Issues and Trends in Secondary School Mathematics This course examines current policy issues and curricular and instructional trends in secondary school mathematics and related research studies. It is designed to provide a transition to advanced graduate work in mathematics education. Open to graduate students only. Prerequisites: Completion of at least 21 graduate credit hours, including either (MATH 6530 or MATH 6520) and MATH 6540, or advisor substituted approvals. 3 hours

MATH 6560 Teaching of College Mathematics In this course consideration is given to curricular problems and trends in post-high school mathematics; research on specific problems of teaching mathematics effectively to college students will be emphasized. Open to graduate students only. Prerequisite: Advisor approval. 2 hours

MATH 6570 Issues and Trends in Mathematics Education This course focuses on curricular and instructional issues and trends in K-14 mathematics education, including an examination of major historical themes that have shaped mathematics policy and practice at these levels. Open to graduate students only. Prerequisite: Advisor approval. 3 hours

MATH 6580 Psychology of Learning Mathematics This course focuses on theories of mathematical thinking and knowing and on an examination of major research paradigms and research findings on mathematical learning in children and adults and their implications for instruction. Open to graduate students only. Prerequisite: Advisor approval. 3 hours

MATH 6590 Research in Mathematics Education This course focuses on research issues, methodologies, and trends within mathematics education along with techniques for critical analysis of research. Students are expected to design and present an individual research study. Open to graduate students only. Prerequisite: Advisor approval. 3 hours

MATH 6700 Real Analysis I The first of a two semester sequence in real analysis. Topics covered in the two semesters will include topology and continuous functions, Lebesgue and general measure and integration, differentiation and the Radon-Nikodym theorem. Hilbert spaces, Banach spaces, and product spaces and Fubini's theorem. Open to graduate students only. Prerequisites: MATH 5220 and MATH 5710. 3 hours

MATH 6710 Real Analysis II The second of a two semester sequence in real analysis. Topics covered in the two semesters will include topology and continuous functions; Lebesgue and general measure and integration, differentiation and the Radon-Nikodym theorem; Hilbert spaces, Banach spaces, and product spaces and Fubini's theorem. Open to graduate students only. Prerequisite: MATH 6700 3 hours

MATH 6760 Complex Analysis Topics include: Cauchy Theory, series expansion, power series, types of singularities, calculus of residues. Open to graduate students only. Prerequisite: MATH 5710 3 hours

MATH 6780 Introduction to Functional Analysis Metric spaces; category; compactness; Banach spaces; Hahn-Banach theorem; completely continuous operators; Hilbert spaces; self-adjoint operators; elementary spectral theory. Open to graduate students only. Prerequisite: MATH 6710 3 hours

MATH 6880 Research Tools in the Mathematical Sciences This course consists of various computer applications and computer network activities that are commonly used in mathematics or mathematics education research, including mathematical word processing, computer algebra systems, literature searches, qualitative data analysis tools, and the use of Internet resources. Enrollment is limited to students in a graduate degree program in mathematics or mathematics education. Students must satisfactorily complete an approved number of modules per credit hour selected. If the course is repeated, different modules must be completed. Certain departmental degree programs may require the completion of specific modules. May be repeated for credit. Open to graduate students only. Prerequisite: Department approval. 1 to 3 hours

MATH 6900 Seminar in Applied Mathematics May be repeated for credit. Open to graduate students only. Prerequisite: Department approval. 1 to 3 hours

MATH 6920 Seminar in Topology May be repeated for credit. Open to graduate students only. Prerequisite: Department approval. 1 to 3 hours

MATH 6930 Seminar in Algebra May be repeated for credit. Open to graduate students only. Prerequisite: Department approval. 1 to 3 hours

MATH 6940 Seminar in Graph Theory May be repeated for credit. Open to graduate students only. Prerequisite: Department approval. 1 to 3 hours

MATH 6950 Seminar in Mathematics Education May be repeated for credit. Open to graduate students only. Prerequisite: Department approval. 1 to 3 hours

MATH 6970 Seminar in Analysis May be repeated for credit. Open to graduate students only. Prerequisite: Department approval. 1 to 3 hours

MATH 6990 Reading and Research May be repeated for credit. Open to graduate students only. Prerequisite: Department approval. 1 to 6 hours

MATH 7120 Professional Field Experience Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisite: Department approval. 2 to 12 hours

MATH 7300 Doctoral Dissertation Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisite: Department and Graduate College approval; approved application. 1 to 15 hours

MATH 7350 Graduate Research Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisite: Department approval. 2 to 10 hours

Medieval Studies

MDVL 5300 Introduction to Medieval Studies This seminar is meant to serve as a guide to the study of the Middle Ages in its multiple disciplines. It is also intended as an introduction to the considerable resources for study available at Western and in the greater Kalamazoo region, including institutions and individuals students should know. Open to upperclass and graduate students only. Undergraduate students must have instructor approval. 1 hour

MDVL 5970 Directed Study Research on a selected topic in the field of medieval studies directed and supervised by a faculty member. May be repeated for credit. Open to upperclass and graduate students. Prerequisite: Approved application required. 1 to 3 hours

MDVL 6000 Advanced Seminar in Medieval Studies A research seminar for advanced graduate students with the focus on research and the preparation of papers in highly specialized areas of medieval studies. The specific topic of each seminar will be announced in the Schedule of Course Offerings. May be repeated for credit with a different topic. Open to graduate students only. Prerequisite: Department approval. 2 to 4 hours

MDVL 6900 Medieval Capstone Seminar This course culminates the M.A. in medieval studies, which begins with a companion course, MDVL 5300 Introduction to Medieval Studies. The Capstone Seminar asks students to integrate and reflect on discoveries they have made through their research and coursework in interdisciplinary medieval studies and prepares them to disseminate what they have learned in the form of a writing

portfolio and a colloquium. It also strengthens and formally reincorporates the intellectual community initiated in Introduction to Medieval Studies. Open to graduate students only. Prerequisite: MDVL 5300 or instructor approval. 3 hours

MDVL 7000 Master's Thesis Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisite: Department and Graduate College approval; approved application. 1 to 6 hours

MDVL 7100 Independent Research Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisite: Department approval and approved application. 2 to 6 hours

MDVL 7120 Professional Field Experience Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisite: Department approval and approved application. 2 to 12 hours

Philosophy

PHIL 5120 Aesthetics An investigation of the many philosophical issues which arise from the study of the arts and aesthetic experience. Topics include such issues as the ontology and identity of works of art, whether art can be defined so as to distinguish art from non-art, the status of aesthetic values, the relation of ethics to aesthetics, the status of feminist perspectives in the arts, and significance of the arts in human life. Open to upperclass and graduate students. Graduate students must be admitted into the M.A. program, unless an exception is granted by the department's Director of Graduate Studies. 3 hours

PHIL 5200 Philosophical Applications of Symbolic Logic This course is designed to expose graduate students to the range of philosophical applications of modern symbolic logic. Starting with the sentential and predicate calculi, the course explores various extensions which may include alethic modal logic, deontic logic, tense logic, relevance logic and counterfactuals. In addition, the course will address salient issues in the philosophy of logic and may include an investigation of the logical paradoxes and/or the controversy surrounding quantified modal logic. Open to upperclass and graduate students. Graduate students must be admitted into the M.A. program, unless an exception is granted by the department's Director of Graduate Studies. 3 hours

PHIL 5400 Philosophy of Mind A study of the philosophical problems surrounding our understanding of the nature of mind, mental states, and consciousness, and their relation to mater, and states of the brain and/or central nervous system. Possible topics include cognitive science, artificial intelligence, the relation of mind to body and/or behavior, teleological and mechanistic explanations of human behavior, the philosophical foundations of psychology, behaviorism, functionalism, the nature of intentionality, the concept of a person, the privacy of mental states, knowledge of other minds, and questions regarding free will and determinism. Open to upperclass and graduate students. Graduate students must be admitted into the M.A. in Philosophy program, unless an exception is granted by the department's Director of Graduate Studies. 2 to 4 hours

PHIL 5440 Practical Ethics This course will examine the relationships between ethical theory and practice, especially in the area of professional life. We will consider questions concerning moral imagination, deliberation, and justification, as well as how principles and norms guide our complex activities. Case illustrations from various professions (e.g., medicine, laws, government, science, psychiatry, etc.) will be used to highlight some of these issues. Open to upperclass and graduate students. Graduate students must be admitted into the M.A. program, unless an exception is granted by the department's Director of Graduate Studies. 3 hours

PHIL 5550 Advanced Philosophy of Science A detailed examination of some of the central problems in contemporary philosophy of science. Topics may vary from term to term. Typical topics include: nature of scientific explanation, theory structure and change, scientific realism vs. various anti-realisms, or issues in the special sciences, e.g., the physical, biological or social sciences. Open to upperclass and graduate students. Graduate

students must be admitted into the M.A. program, unless an exception is granted by the department's Director of Graduate Studies. 2 to 4 hours

PHIL 5700 Philosophical Topics An examination of special philosophical topics. Topics to be listed in the Schedule of Course Offerings. May be repeated for credit, with advisor's approval, when topics vary. May be offered in an accelerated format. Open to upperclass and graduate students. Graduate students must be admitted into the M.A. program, unless an exception is granted by the department's Director of Graduate Studies. 1 to 4 hours

PHIL 5980 Readings in Philosophy Research on some selected period or topic under supervision of a member of the Philosophy faculty. May be repeated for credit. Open to upperclass and graduate students. Graduate students must be admitted into the M.A. program, unless an exception is granted by the department's Director of Graduate Studies. 1 to 4 hours

PHIL 6000 Colloquium A seminar in which one or more faculty involve the students in their current research. Topics may vary from term to term. May be repeated for credit. Open to graduate students only. Graduate students must be admitted into the M.A. program, unless an exception is granted by the department's Director of Graduate Studies. 2 to 4 hours

PHIL 6100 Seminar in the History of Philosophy A close reading and discussion of selected classics written by major philosophers from the ancient, medieval, or modern period. Selections may vary from term to term. May be repeated for credit. Open to graduate students only. Graduate students must be admitted into the M.A. program, unless an exception is granted by the department's Director of Graduate Studies. 2 to 4 hours

PHIL 6200 Philosophy of Language and Logic An examination of the relation of language to the world, and/or the philosophical basis of standard and nonstandard logics. Possible topics include the nature of reference and predication, the distinctions between a priori and a posteriori, between analytic and synthetic, and between necessary and contingent propositions, the roles of proper names, general terms, and pronouns, and the truth conditions of sentences, as well as questions concerning the philosophy of modal logic, tense logic, free logic, deontic logic, epistemic logic, paraconsistent logic, first and second order logics, and probability calculus. May be repeated for credit, with advisor's approval, when topics vary. Open to graduate students only. Graduate students must be admitted into the M.A. program, unless an exception is granted by the department's Director of Graduate Studies. 2 to 4 hours

PHIL 6310 Ethical Theory A study of theories of ethics and morality. Topics may vary from semester to semester. Open to graduate students only. Graduate students must be admitted into the M.A. program, unless an exception is granted by the department's Director of Graduate Studies. 2 to 4 hours

PHIL 6320 Theory of Knowledge An examination of the nature of truth, belief, and evidence. Topics may vary from term to term. Examples include: questions about the nature of perception, a priori and a posteriori knowledge, skepticism, epistemic foundations, epistemic justification, and other related topics. May be repeated for credit. Open to graduate students only. Graduate students must be admitted into the M.A. program, unless an exception is granted by the department's Director of Graduate Studies. 2 to 4 hours

PHIL 6330 Metaphysics An examination of the underlying nature of reality. Topics may vary from term to term. Examples include: questions about the fundamental kinds of entities that comprise reality, the existence of God, universals and particulars, space and time, causation and free will, mind and matter, identity and change, and other related topics. May be repeated for credit. Open to graduate students only. Graduate students must be admitted into the M.A. program, unless an exception is granted by the department's Director of Graduate Studies. 2 to 4 hours

PHIL 6500 Philosophy of Religion An examination of philosophical issues related to religion. Topics may vary from term to term. Examples include: the nature and existence of God, the problem of evil, theistic and scientific explanations, pantheism, the relation between faith and reason, the nature of religious experience, life after death, miracles, religious epistemology, and the theological foundations of ethics. Open to graduate students

only. Graduate students must be admitted into the M.A. program, unless an exception is granted by the department's Director of Graduate Studies. 2 to 4 hours

PHIL 7000 Master's Thesis Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisite: Department and Graduate College approval; approved application. 1 to 6 hours

PHIL 7100 Independent Research Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisite: Approved application and department approval. 1 to 4 hours

Physics

PHYS 5620 Atomic and Molecular Physics This course consists of some applications of quantum mechanics. Topics include the helium atom, multielectron atoms, the Raman, Zeeman, and Stark effects, stimulated emission, transition rates, selection rules, the diatomic molecule, and molecular physics. Open to upperclass and graduate students. Prerequisite: PHYS 4600 or instructor approval. 3 hours

PHYS 5630 Solid State Physics After an initial study of symmetry and crystal structure, quantum mechanics is used to describe the cohesion of solids, x-ray and neutron diffraction, the elasticity of solids, lattice vibrations, and the thermal and electrical properties of solids, with particular emphasis on metals. Open to upperclass and graduate students. Prerequisite: PHYS 4600 or instructor approval. 3 hours

PHYS 5640 Nuclear and Particle Physics This course covers such topics as properties of nuclei, collision theory, nuclear reactions, nuclear models, fundamental interactions, and classification techniques used in particle physics. Discussions of experimental methods as well as theoretical treatments using quantum mechanics are included. Open to upperclass and graduate students. Prerequisite: PHYS 4600 or instructor approval. 3 hours

PHYS 5980 Selected Topics This course affords an opportunity for advanced students with good scholastic records in physics to pursue independently the study of some subject of interest to them. Open to upperclass and graduate students. Prerequisite: Department approval. 1 to 4 hours

PHYS 6010 Introduction to Current Physics Research This is a course for graduate students early in their programs to become acquainted with contemporary research practices in physics. Goals might include development of skills with laboratory equipment, research protocols, safety procedures, computational resources and software, and familiarity with the research literature. May be repeated for credit. Graded on a C/NC basis. Open to graduate students only. Prerequisite: Departmental approval. 1 to 6 hours

PHYS 6100 Research Seminar This is a required course for first-year graduate students and will be offered every spring semester. The course consists of faculty research talks and student talks (one by each student) on papers chosen by the students and approved by the faculty members. Graded on a Credit/No Credit basis. Open to graduate students only. 1 hour

PHYS 6150 Mathematical Physics This course provides the background needed for the application of mathematics to physical problems encountered in graduate physics courses. Relevant topics in group theory, complex variables, and functional analysis are included. Open to graduate students only. 3 hours

PHYS 6200 Computational Physics This course is intended to give graduate students the tools needed to carry out those numerical computations that arise most often in the solution of physical problems. These may include the solution of transcendental equations, numerical integration, matrix manipulation, differential equations, and error estimation. Open to graduate students only. 2 hours

PHYS 6220 Quantum Mechanics I This course is designed to provide a foundation of fundamental techniques for more advanced work in the physics and chemistry of atoms, molecules, nuclei, and solids. The Schroedinger equation and operator theory are applied to simple systems such as the one-electron atom and potential scattering. Open to graduate students only. 3 hours

PHYS 6230 Quantum Mechanics II This course is a continuation of 6220. It employs state-vector formulation to study several problems of general interest, such as time-dependent perturbation theory, systems of identical particles, and angular momentum. Open to graduate students only. Prerequisite: PHYS 6220. 3 hours

PHYS 6240 Statistical Mechanics Statistical methods, employing ensemble theory, are used to study the equilibrium properties of systems having many degrees of freedom. Classical and quantum theories are developed and applied to selected problems of interest in physics and chemistry. The relationships between microscopic models and macroscopic properties are emphasized. Open to graduate students only. 3 hours

PHYS 6300 Classical Mechanics Lagrange's equations are developed early in the course and are used in the analysis of both point-mass and rigid-body problems. The modifications of classical mechanics required by the theory of relativity are reviewed. The Hamilton equations of motion and Hamilton-Jacobi theory are introduced, and some of the analogies between classical and quantum mechanics are discussed. Open to graduate students only. 3 hours

PHYS 6500 Relativistic Quantum Mechanics This course deals with the Dirac and Klein-Gordon equations, quantum electrodynamics, Feynman diagrams, and the properties of the strong and electro weak interaction of elementary particles. Open to graduate students only. Prerequisite: PHYS 6230. 3 hours

PHYS 6620 Electricity and Magnetism I This course deals with the static electromagnetic field, its interaction with matter, time-varying fields, Maxwell's equations, wave propagation, wave guides, and simple radiating systems. Open to graduate students only. 3 hours

PHYS 6630 Electricity and Magnetism II This course deals with general electromagnetic fields, wave propagation, wave guides, simple radiating systems, scattering of electromagnetic waves, special relativity, and radiation by moving charges. Open to graduate students only. Prerequisite: PHYS 6620. 3 hours

PHYS 6700 Atomic Physics This course covers atomic structure, atomic spectra, second quantization of the electromagnetic field, the interaction of radiation and matter, resonance phenomena, and the formal theory of scattering with applications to atomic collisions. Open to graduate students only. Prerequisite: PHYS 6230 or instructor approval. 3 hours

PHYS 6710 Nuclear Physics This course covers nuclear models, nuclear matter, electromagnetic properties, reactions, and scattering. Open to graduate students only. Prerequisite: PHYS 6230 or instructor approval. 3 hours

PHYS 6720 Condensed Matter Physics This course includes both static and dynamic properties of condensed matter with particular emphasis on transport properties, optical properties, magnetism, and superconductivity. Open to graduate students only. Prerequisites: PHYS 6220 and 6240, or consent of instructor. 3 hours

PHYS 6800 Research in Atomic Physics This course is available for students performing doctoral research in atomic physics. A student must have a research advisor to enroll in PHYS 6800. May be repeated for credit. Graded on a C/NC basis. Open to graduate students only. Prerequisite: Consent of research advisor. 1 to 6 hours

PHYS 6810 Research in Nuclear Physics This course is available for students performing doctoral research in nuclear physics. A student must have a research advisor to enroll in PHYS 6810. May be repeated for credit. Graded on a C/NC basis. Open to graduate students only. Prerequisite: Advisor approval. 1 to 6 hours

PHYS 6820 Research in Condensed Matter Physics This course is available for students performing doctoral research in condensed matter physics. A student must have a research advisor to enroll in PHYS 6820. May be repeated for credit. Graded on a C/NC basis. Open to graduate students only. Prerequisite: Advisor approval. 1 to 6 hours

PHYS 7000 Master's Thesis Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisite: Approved application, Department and Graduate College approval. 1 to 6 hours

PHYS 7100 Independent Research Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisite: Department approval. 2 to 6 hours

PHYS 7300 Doctoral Dissertation Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisites: Department and Graduate College approval. 1 to 15 hours

PHYS 7350 Graduate Research Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisite: Department approval. 2 to 10 hours

Political Science

PSCI 5060 Topics in American Government A critical examination of selected issues facing national, state, or local governments with emphasis upon contemporary theoretical and applied perspectives on the question. May be repeated for credit when topics vary. Open to upperclass and graduate students. 3 to 4 hours

PSCI 5320 Administration in Developing Countries This course compares public administration systems in a development context. It analyzes the role of the administrator in middle- and low-income countries, notably the administrator's varied responsibilities as a career public official, and as an agent of change. The course will cover administration of development projects in both rural and urban settings and discuss different strategies that have worked. Open to upperclass and graduate students. 3 hours

PSCI 5490 Gender and Development This course examines the role of gender in the development process. A theoretical and empirical perspective will be used to analyze gender inequalities in the developing world. Open to upperclass and graduate students. 3 hours

PSCI 5980 Studies in Political Science An opportunity for advanced students with good scholastic records to pursue independently the study of some subject of interest to them. Subjects are chosen and arrangements made to suit the needs of individual students. May be repeated for credit. Open to upperclass and graduate students. Prerequisite: Approved application, approval of department chairperson and instructor. 1 to 4 hours

PSCI 6000 Seminar in American Politics Research and study in selected topics in American politics. May be repeated for credit when topics vary. Open to graduate students only. 3 hours

PSCI 6010 Foundations of American Politics An examination of the formal institutions of government at the national level and the representation of citizen interest through political participation including elections, political parties and interest groups, and public opinion. Open to graduate students only. 3 hours

PSCI 6030 Seminar in American Political Behavior This course will review current literature in the area of political behavior and psychology. Special attention will be paid to controversies in voting behavior and the meaning and significance of vital concepts such as partisanship, ideology, issue voting, belief systems, political sophistication, affective reactions to politics, and the dynamics of citizen participation. Open to graduate students only. 3 hours

PSCI 6300 Seminar: Public Administration Study of selected topics in public administration. May be repeated for credit when topics vary. Open to graduate students only. 3 hours

PSCI 6311 Monitoring and Evaluation of International Development Projects This course considers how monitoring and evaluation can be used to enhance the effectiveness of programs and projects in developing countries. We address the main methodologies employed in project evaluation and standards for assessing the quality of evaluations, and we study and critique several completed evaluations. Open to graduate students only. 3 hours

PSCI 6330 Comparative National Development Strategies This course examines the causes and consequences of more and less effective development strategies primarily at the national level. While the main focus is on experiences with industrialization, the courses also considered approaches to agriculture, public health, and other areas of development. Open to graduate students only. 3 hours

PSCI 6360 Seminar: Development Methods and Skills The seminar is devoted to teaching skills, methods and approaches related to administration in developing areas. Topics may include the logical framework, stakeholder analysis, cost benefit analysis, monitoring, evaluation, and participatory methods. The project paper will be shared with other students in the seminar. Open to graduate students only. 3 hours

PSCI 6380 Seminar: Planning Development Programs As a capstone to the MDA program, this research seminar calls upon the student to examine the design and implementation of a particular development policy. We address constraints encountered in the policy implementation process and students develop a proposal that would improve conditions in the selected area. Open to graduate students only.
Prerequisite: Approval of the MDA Director. 3 hours

PSCI 6390 Peace Corps Field Paper As a capstone to the MDA program for students taking the Peace Corps Option, this course calls upon the student to analyze a particular development policy, program or project that has been underway for at least a significant period of time in a developing country. A typical field paper might address the country context, the program plan, expected impacts, organizational arrangement, monitoring and evaluation systems, experiences with implementation, the evolving strategy, program results, and lessons to be learned. This course is restricted to students taking the MDA Peace Corps Option. Open to graduate students only.
Prerequisite: Department approval. 3 to 6 hours

PSCI 6400 Seminar in Comparative Politics Research and study in selected topics in comparative politics. Topics will usually be thematic but may also encompass a regional or country study. In all cases significant issues in the study of the field will be stressed. May be repeated for credit when topics vary. Open to graduate students only. 3 hours

PSCI 6410 Foundations of Comparative Politics This course surveys the core of the research field of comparative politics, which is concerned principally with the discovery and confirmation of knowledge about institutions and behavior of their governments and their citizens. The course introduces students to the history of the field, important approaches and theories, major concepts and topics, and its eclectic methodologies. Open to graduate students only. 3 hours

PSCI 6440 Economic and Social Development Theory The course examines theories of economic and social development at the national level since World War II and applications of these theories in specific cases. Open to graduate students only. 3 hours

PSCI 6460 Comparative Public Policy This course focuses on the development of policy over time and across state and national boundaries. It deals with how and why policies emerge in particular forms in different countries. Selected substantive issues will be examined comparatively in greater detail. Open to graduate students only. 3 hours

PSCI 6490 Rural Development The seminar will discuss the challenges faced as well as some successful approaches in rural development in developing countries around the world. Dynamics of agrarian

societies and national and local level development policies and programs will be examined. The links between rural development, agriculture, food security, poverty reduction strategies, and resource availability are analyzed. Challenges leaders face in designing and/or reforming administrative structures, institutions, and policies and programs to pursue effective rural development are considered. Open to graduate students only. 3 hours

PSCI 6500 Developing Countries Seminar Variable topics examining the course of political development among the developing countries, with special reference to the relationship between administrative needs and democratic objectives. May be repeated for credit when topics vary. Open to graduate students only. 3 hours

PSCI 6600 Seminar: Political Thought An analysis of problems and subject matter considered by political philosophers that are significant to the social sciences. Various issues arising in political thought, certain periods in history, or regions of the world may be considered. May be repeated for credit when topics vary. Open to graduate students only. 3 hours

PSCI 6610 Contemporary Political Theory Focus will be on twentieth and twenty-first century writers. Topics may include contemporary forms of liberalism, contemporary theories of justice, contemporary civic republican theory, communitarian theory, critical theory, Continental theory, post-structuralist theory, feminist theory, multicultural political theory, Marxian theory, pragmatism, contemporary forms of conservatism, libertarianism, and rational choice theory. Basic concepts and political processes will be examined critically. May be repeated for credit when topics vary. Open to graduate students only. 3 hours

PSCI 6620 Political Philosophy I A synthesis of the history of political philosophy and the formal analysis of those positive and normative concepts and processes necessary to the understanding of political systems. The course covers the period from classical Greece through the Renaissance. Superimposed on the overall chronological format are critical inquiries into basic concepts and processes. Open to graduate students only. 3 hours

PSCI 6630 Political Philosophy II A synthesis of the history of political philosophy from the seventeenth century to contemporary times. The course also includes a formal analysis of applicable positive and normative concepts necessary to the understanding of political systems. Superimposed on the overall chronological format are critical inquiries into basic concepts and processes. Open to graduate students only. 3 hours

PSCI 6640 The Nature of Political Inquiry and Analysis An examination of the principles underlying the systematic study of politics. Included are discussions of such basic questions as: How do we obtain knowledge of politics?; How do we explain political phenomena? and What is the relationship between the empirical analysis and normative evaluation of political phenomena? Attention will be given to leading approaches to the study of politics and the formulation and use of concepts, generalizations and theories. Open to graduate students only. 3 hours

PSCI 6650 Modern Democratic Theory A comprehensive survey of the main currents in modern democratic theory, including elitist, participatory, deliberative, agonistic, feminist and radical perspectives. The course will also cover important topics within each of these currents, such as theories of representation, identity politics and social movements. Open to graduate students only. 3 hours

PSCI 6900 Seminar in Advanced Political Analysis Variable topics in advanced political analysis and research methods are addressed. Topics may include time-series analysis, experimental design, formal methods, game theory, and comparative methods. May be repeated for credit when topics vary. Open to graduate students only. 3 hours

PSCI 6910 Political Analysis I Introduction to the research process in political science including research design, sampling and case selection, sources of data (e.g., surveys, interviews, archives, government agencies, etc.), and basic descriptive statistics. Open to graduate students only. 3 hours

PSCI 6920 Political Analysis II This course is an introduction to econometric models and their use in political science. The course covers multiple regression models, extensions of the models to time series and

panel data, as well as models with limited dependent variables. Open to graduate students only. Prerequisite: PSCI 6910 or equivalent. 3 hours

PSCI 6940 Teaching Political Science This course addresses the basics of teaching in higher education: class preparation, leading discussions, classroom policies, university policies, classroom management, dealing with problem situations, and basic teaching skills, among others. Open to graduate students only. 1 hour

PSCI 6950 Teaching Excellence This course introduces advanced graduate students and teaching assistants to ideas, information and methods that are innovative and encourages them to approach teaching in a way that goes beyond the traditional lecture format. Critical thinking exercises, group projects, project-oriented learning, portfolio learning, computer-aided instruction and computer simulations are possible topics. Recent research on the nature of the learning process, both among late adolescents and adults, will also be included. Graded on a Credit/No Credit basis. Open to graduate students only. 2 hours

PSCI 6960 Research and Professional Skills Goals in this course include acquaintance with the department's research agenda; familiarization with the state of the discipline; overcoming common writing problems faced by professionals; demystifying certain professional activities such as conference participation, article submission and grant writing; familiarization with on-campus facilities, including library and computer support; and introduction to computer programs and databases commonly used in political science. Open to graduate students only. 2 hours

PSCI 6970 Proposal Workshop During the course of this workshop, the student will develop a dissertation proposal (and attending grant proposals, where appropriate). While this will be done primarily in conjunction with the committee, the workshop will provide a weekly support structure in which students will discuss their research question, progress and any complications. Graded on a Credit/No Credit basis. Open only to doctoral students. 1 hour

PSCI 7000 Master's Thesis Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisite: Department and Graduate College approval. 1 to 6 hours

PSCI 7100 Independent Research Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisite: Department approval. 2 to 6 hours

PSCI 7120 Independent Research Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisite: Department approval. 2 to 12 hours

PSCI 7300 Doctoral Dissertation Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisites: Approved application, department and Graduate College approval. 1 to 15 hours

Psychology

PSY 5100 Advanced General Psychology Readings, lecture, and discussion designed to introduce students to modern behavior theory. Emphasis will be upon human behavior, both normal and abnormal, with a significant portion of the course devoted to the higher cognitive processes. Recommended as a cognate course in Psychology. Open to upperclass and graduate students. Prerequisites: Instructor approval. 3 hours

PSY 5170 Psychology in the Schools This course provides an overview of psychology in the schools, with an emphasis on interventions for children or adolescents presenting difficulties with learning or behavior. This course will provide an overview of how to design, implement and evaluate interventions in schools for individual and groups of children. An overview of the role of the school psychologist will be provided. Open to

upperclass and graduate students. Restricted to majors in Pre-Psychology, General Psychology or Behavioral Science; masters or doctoral students in psychology; or instructor approval. 3 hours

PSY 5240 Human Sexuality In this course students will learn about the range of human sexual behaviors. Topics covered will include anatomical and physiological functioning as well as psychological aspects of sexual behavior. Class time will involve lectures, discussions, in-class activities, videos, and guest speakers. The course is not intended to provide therapy training. Open to upperclass and graduate students. Restricted to majors in Pre-Psychology, General Psychology or Behavioral Science; masters or doctoral students in psychology; or instructor approval. 3 hours

PSY 5260 Human Drug Use and Abuse This course provides a general overview of basic pharmacological principles, discusses the behavioral and physiological mechanisms of action of several classes of medicinal and recreational drugs, and surveys the factors thought to contribute to responsible and irresponsible drug intake. Although human drug use and abuse are the primary focus of the course, nonhuman research findings are emphasized where appropriate. Open to upperclass and graduate students. Restricted to masters or doctoral students in psychology; or instructor approval. 3 hours

PSY 5400 Psychology of Safety The purpose of this course is to teach students about current research and trends in the psychology of safety. Students review, critically analyze and discuss current trends in safety research, including behavior-based safety, injury/illness prevention and other relevant topics. Students receive training in the application of behavioral principles to solve specific safety problems in organizations through changing behavior and improving performance. Restricted to majors in Pre-Psychology or Behavioral Science; masters or doctoral students in psychology; or instructor approval. 3 hours

PSY 5470 Practicum: Organizational Performance Improvement Training in the application of principles of behavior to solve specific organizational problems through changing behavior and improving performance. Students conduct a performance improvement project in a local organization and empirically evaluate the results. The practicum site is obtained by the student, and with the assistance of the instructor. Practicum students meet as a group frequently with the instructor to discuss and troubleshoot the projects. Open to upperclass and graduate students. Prerequisite: Instructor approval. 3 hours

PSY 5480 E-Learning Practicum This course covers the application of behavioral and learning principles to the design and evaluation of education and training programs via computer or over the web. Open to upperclass and graduate students. Prerequisites: PSY 6100 or instructor approval. 3 hours

PSY 5610 Introduction to Clinical Psychology This course addresses the subdiscipline of clinical psychology in a manner that provides the psychology major with useful information regarding it as a potential specialty. In addition to coverage of contemporary professional activity engaged in by specialists in this field, like practice and research, it addresses career development issues such as selecting graduate schools, training models used by universities and private schools, internship training, licensure, and the types of degrees granted. It is a course appropriate for mid- to upper-level undergraduates and graduate students who are returning to study after having been away from the field for some time. Open to upperclass and graduate students. Restricted to majors in Pre-Psychology, General Psychology or Behavioral Science; masters or doctoral students in psychology. 3 hours

PSY 5740 Cross Cultural Psychology This course is designed to introduce the psychology major to the general area and basic concepts of Cross Cultural Psychology. Through readings and lectures the students will become familiar with the role culture plays in various indigenous psychologies including those commonly found in Western, Japanese, Chinese, Arabic, and African cultures. This course is specifically not a course in American ethnicity. It will instead explore a variety of world cultures in search of an understanding of how human behavior is interpreted according to cultural tenets that are unique to a region's history and evolution. The course will also examine the importance, especially in contemporary Western Society, of professional psychologists developing more than casual familiarity with predominant indigenous psychologies. The plight of persons undergoing increasingly forced and voluntary migration in today's world provides one foundation for exploring the need for such understanding. The course will prepare the student to read and interpret the psychological literature from several cultures, to conduct library research addressing the influence of culture on the interpretation of human

behavior, and to appreciate the importance of cultural considerations in the wide variety of psychological specialties. Open to upperclass and graduate students. Restricted to masters or doctoral students in psychology; or instructor approval. 3 hours

PSY 5950 History of Psychology The historical and philosophical foundations of contemporary psychology are examined. Approximately equal emphasis is placed upon theoretical and applied aspects of the evolution of the modern science. The origin and development of current behavioral approaches constitute a major focus. Open to upperclass and graduate students. Restricted to majors, master's and doctoral students in psychology. Prerequisite: PSY 3300 with a grade of "C" or better. 3 hours

PSY 5970 Topical Studies in Psychology A survey and discussion of selected research topics of current interest. Topics may include both basic science and applied aspects of the discipline. May be repeated for credit although the total number of credits may be limited by the degree program. Students should consult the program advisor. Restricted to master's and doctoral students in Psychology. Prerequisite: Instructor approval. 1 to 4 hours

PSY 5980 Special Projects in Psychology This course provides the graduate student with the opportunity for independent reading and/or research under the direction of a faculty member. May be repeated for credit, although the total number of hours in a degree program may not exceed 5 hours. Open to upperclass and graduate students. Prerequisites: Application and instructor approval. 1 to 5 hours

PSY 5990 Practicum in Psychology This course provides training in the application of the principles of psychology to a specific and restricted problem area in the discipline. The practicum application is often identified by the location of the research site or professional service agency published in the Schedule of Course Offerings. Each one-hour of credit requires 100 clock hours. May be repeated for credit, although number of credits may be limited by program requirements. Open to upperclass and graduate students. Restricted to majors in General Psychology or Behavioral Science; masters or doctoral students in psychology. 1 to 4 hours

PSY 6050 Professional and Research Ethics This course is designed to introduce advanced students of Psychology to many of the standards and contemporary issues affecting professional conduct. The topics to be covered revolve around ethical conduct in practice and research as well as the decision-making foundations for resolving ethical issues. Also addressed will be selected legal issues affecting professional practice. Open to graduate students only. 3 hours

PSY 6080 Research Methods in Applied Behavior Analysis This advanced course on research methods in behavior analysis addresses research with human and nonhuman subjects, placing an emphasis on applied, human research. Research issues and specific research methods are discussed at philosophical, strategic, and practical levels. Research decisions are placed within the context of the philosophy of science underlying all scientific research endeavors. Topics include: the mission of science; behavioral assessment and measurement; experimental design, with emphasis on single-subject designs; analysis and interpretation of data; dissemination of scientific research; and, ethical issues in research. Students demonstrate their mastery of research issues through the proposal of a research project. Open to graduate students only. Prerequisites: Courses in applied behavior analysis. 3 hours

PSY 6090 Advanced Seminar in Applied Behavior Analysis Research An advanced course emphasizing: a) research, conceptual and professional issues in applied behavior analysis; b) review, integration and critical analysis or research topics in psychology. Open to graduate students only. Prerequisites: PSY 6080 3 hours

PSY 6100 Conditioning and Learning This course examines conditioning and learning from the perspective of the experimental analysis of behavior. Emphasis is placed on basic laboratory research procedures and findings. Open to graduate students only. 3 hours

PSY 6110 Current Research in Experimental Analysis This course examines basic research areas of current interest to behavior analysts. A central component of the course is detailed consideration of articles published in the Journal of the Experimental Analysis of Behavior. Open to graduate students only.

Prerequisite: PSY 6100 3 hours

PSY 6120 Advanced Physiological Psychology A survey of the interrelationships of physiological and behavioral processes. Lecture and laboratory. Open to graduate students only. 3 hours

PSY 6130 Behavioral Pharmacology This course examines drug effects from a behavior-analytic perspective. Emphasis is placed on general mechanisms of drug action, variables that modulate drug effects, strategies for studying those effects, and the behavioral actions of commonly encountered drugs. Open to graduate students only. Prerequisite: PSY 6100 3 hours

PSY 6166 Conditioning Principles and their Organizational Applications This course serves as a scholarly introduction to basic and advanced principles of behavior with an emphasis on potential organizational applications. The course will describe the development of a science of behavior and the integration of this science with other natural sciences. Important topics such as the acquisition and maintenance of behavior, assessment and evaluation, and motivational variables will be examined in relation to complex behaviors. The potential relevance of other behavioral research areas to organizational applications will be broadly considered. Restricted to masters and doctoral students in psychology. Open to graduate students only.
Prerequisite: Instructor approval. 3 hours

PSY 6200 Analysis of Abnormal Behavior An advanced study of behavioral disorders as characterized by the standard classification systems, the DMS III-R and ICD-9-M, with respect to their etiology, prognosis and treatment. Open to graduate students only. 3 hours

PSY 6210 Developmental Psychopathology The purpose of this course is to provide students with exposure to theories and empirical findings in contemporary child psychopathology. The goals of the course are to help students (1) acquire a working knowledge of the disorders described in the current classification system (DSM-IV) as they pertain to children and adolescents; (2) gain a critical understanding of the conceptual issues surrounding classification and an appreciation for alternative perspectives; (3) understand prominent theories attempting to explain/describe the variables leading to and/or maintaining psychopathological behavior; and (4) evaluate the empirical data base that informs treatment for the various disorders. Open to graduate students only. 3 hours

PSY 6340 Experimental Design and Analysis I Topics include statistical decision theory, one factor analysis of variance, multiple comparison procedures, factorial designs, randomized block designs, fixed, random and mixed models, and basic issues in experimental design. Open to graduate students only. Prerequisite: An elementary course on statistics. 3 hours

PSY 6350 Correlation and Regression Analysis An advanced course covering simple correlation methods, inferential methods for one or many correlations (including meta-analysis), interpretation issues (including sampling error, sampling bias, scaling error, measurement error, functional form, cause, homoscedasticity) variants of and alternatives to Pearson correlation, multiple correlation and regression, part and partial correlation, analysis of variance of regression for simple and complex models, model comparison procedures, methods for nonlinear data (including polynomial regression and logistic regression models) and regression diagnostics. Open to graduate students only. Prerequisite: PSY 6340 (or some other course covering the analysis of variance). 3 hours

PSY 6360 Experimental Design and Analysis II Advanced methods for designing, analyzing, and interpreting complex between-subjects and repeated-measurement design. Topics include power analysis for planning experiments, and inferential analysis methods including ANOVA, multiple comparison procedures, simple main effects tests, interaction contrasts tests, simultaneous confidence intervals, nonparametric methods, monotone alternative tests, and analysis of covariance for univariate experiments. Also discussed are methods for analyzing nonorthogonal design, procedures for analyzing experiments containing multiple response measures (such as multivariate analysis of variance and modified Bonferroni procedures), and current concepts of experimental validity. Open to graduate students only. Prerequisites: PSY 6340 and PSY 6350. 3 hours

PSY 6370 The Design and Analysis of Quasi-experiments and Observational Studies This course covers the design and analysis of studies in which it is not feasible to randomly assign subjects to treatment.

The focus is on three useful quasi-experimental designs (viz. The regression-discontinuity design, the interrupted time-series design, and the nonequivalent-group quasi-experiment) and the observational study. Analytic procedures recently developed for these designs are covered in detail. Opaque methods that have recently become popular for analyzing observational studies are critiqued. The conceptual framework for much of the course is based on the Rubin causal model. Open to graduate students only. Prerequisites: PSY 6340 and PSY 6350. 3 hours

PSY 6430 Personnel Selection and Placement This course is designed to teach students: (1) the legal and professional requirements for personnel selection and placement programs; (2) how to design and conduct job analyses, interviews, and tests that conform to the legal and professional requirements; and (3) how to evaluate the adequacy (the reliability and validity) of personnel selection and placement instruments. Open to graduate students only. Prerequisite: An undergraduate course in statistics. 3 hours

PSY 6440 Personnel Training and Development The course emphasizes the principles of learning as well as techniques and administrative procedures used in the development of human resources at all levels. Open to graduate students only. 3 hours

PSY 6450 Psychology of Work This course is an advanced course designed to examine human behavior in organizations from a behavioral psychology perspective. Topics covered include: the history of industrial/organizational psychology, motivation, performance improvement techniques, compensation, quality, job satisfaction and its relation to productivity, and the ethics of personnel management. Students entering the course are expected to have an understanding of the basic principles of operant and respondent conditioning because these concepts are used to interpret and analyze worker behavior. Open to graduate students only. Restricted to master's or doctoral students in psychology, or instructor approval. 3 hours

PSY 6470 Seminar: Industrial/Organizational Psychology A survey of issues faced by professionals in Industrial/Organizational Psychology that includes choice of a career path, current best practices in I/O Psychology, and strategies for capitalizing on opportunities and overcoming barriers to performance improvement in organizations. Restricted to master's or doctoral students in psychology. May be repeated for credit, but limited to three credits in the I/O M.A. program. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisite: Admission to program or instructor approval. 1 hour

PSY 6484 Psychological Foundations of Computer-Assisted Instruction This course will emphasize the application of instructional design principles to computer-assisted instruction. This course will consider behavioral and cognitive theoretical foundations of computer-assisted instruction, basic and advanced principles involved in computer-assisted instruction, and the use of computer-assisted instruction in various content areas. Open to graduate students only. Prerequisite: PSY 5490 3 hours

PSY 6494 Advanced Instructional Design and Training Practicum This course implements the best practices of instructional design and training assessment to improve training outcomes for organizational clients. Student work with organizational team members to conduct training needs analyses and develop instructional solutions. Open to graduate students only. Prerequisites: PSY 5490 and PSY 6440. 3 hours

PSY 6510 Applied Behavior Analysis: A Systems Approach The application of systems analysis concepts to the design of systems which yield behavioral measures of complex social situations. Open to graduate students only. Restricted to master’s or doctoral students in psychology. Prerequisite: Admission to program or instructor approval. 3 hours

PSY 6520 Systems Analysis Practicum This course integrates behavior analysis with organizational systems analysis to improve the design and management of human performance systems. Students conduct analyses for organizational clients and work with organizational team members to redesign and/or create new performance systems at the organizational level, the work process level, and the individual job performer level. Open to graduate students only. Prerequisite: PSY 6510 or instructor approval. 3 hours

PSY 6549 Behavior-Based Instructional Design Will cover the basic principles and techniques of effective instruction and training as applied to a wide variety of settings, including K-12 education, higher education and personnel training. Open to graduate students only. Restricted to masters or doctoral students in psychology.

Prerequisite: PSY 6100 or PSY 6166. 3 hours

PSY 6570 Autism: Etiology, Assessment, and Behavioral Treatment This is a course for psychology graduate students who intend to work with individuals with autism. The course provides a survey of etiological theories of autism, a review of best practices in diagnosis with accompanying practice in assessment, and an overview of best practices in behavioral treatment of autism. Lectures are supplemented by course projects, invited speakers, and homework exercises that are designed to increase student proficiency in assessing and treating individuals with autism. Open to graduate students only. Prerequisite: Full-time graduate student status in Psychology. 3 hours

PSY 6580 Cognitive Processes This course offers an advanced introduction to current theorizing and empirical research in domains considered central to the field of cognitive psychology. These domains include perception, attention, memory, problem-solving, reasoning, decision-making, expertise, and language. The focus will be on human cognition and its contribution to understanding complex behavior. Open to graduate students only. Restricted to master’s or doctoral students in psychology, or instructor approval. 3 hours

PSY 6610 Psychotherapy: Theory and Methods This is a treatment course which reviews several theoretical approaches to, and problem solving strategies for, a variety of client disorders. The course concentrates on the stages of treatment, the issues involved in treatment and various techniques of treatment. Open to graduate students only. Restricted to master's or doctoral students in psychology. Prerequisite: Instructor approval. 3 hours

PSY 6640 Behavior Therapy This is a treatment course designed to familiarize the student with the methods, applications, theory and clinical literature of behavior therapy. Open to graduate students only. Restricted to master's or doctoral students in psychology. Prerequisite: Application and instructor approval. 3 hours

PSY 6650 Behavioral Approaches to Treatment This is a treatment course designed to familiarize the students with pragmatic issues in the application of behavior management and behavior analysis techniques and the underlying conceptual foundations. Among the topics to be covered are: functional analysis, token economies, behavioral contracting, response accelerating and decelerating techniques, and packaged behavior-management programs in areas such as social skills and assertiveness. Open to graduate students only. Restricted to master's or doctoral students in psychology. 3 hours

PSY 6680 Analysis and Treatment of Developmental Disabilities This is a treatment course designed to familiarize students with pragmatic issues in the application of behavior management and behavior analysis techniques to clients who are mentally retarded or traumatically brain injured. Open to graduate students only. Restricted to master's or doctoral students in psychology. Prerequisite: PSY 6080 and PSY 6100. 3 hours

PSY 6690 Child Behavior Therapy An introduction to behavioral clinical approaches to emotional, social, and behavioral problems of children. The course content emphasizes both the theoretical basis and practical implementation of a range of behavioral therapeutic techniques, including those based on classical and operant conditioning processes, social learning, and cognitive-behavioral models. Open to graduate students only. Restricted to master's or doctoral students in psychology. Prerequisite: PSY 6100 3 hours

PSY 6710 Higher-order Behavioral Processes and Their Applications This course is a continuation of PSY 6700. The emphasis is on the rule governance of complex behavior of verbal human beings. Areas of analysis include behavioral medicine, and rehabilitation, behavioral anthropology, family life, child rearing, community interventions, education, self-management, organizational behavior management, developmental disabilities, autistic behavior, neurotic behavior, and sexual behavior. PSY 6700 and 6710 combine to provide a behavior-analytic world view. Open to graduate students only. Restricted to master's or doctoral students in psychology. Prerequisite: PSY 6700 3 hours

PSY 6740 Verbal Behavior This course covers the experimental analysis of language and verbal behavior, with an emphasis upon the analysis of language as presented in the writings of B. F. Skinner. Open to graduate students only. Prerequisites: PSY 6100. 3 hours

PSY 6750 Behavioral Approaches to Language Assessment and Training This course covers the behavior-analytic approach to language assessment and language training, including for individuals with language delays or language deficits. Topics covered will include language assessment, designing and implementing instructional programming, and language needs amongst diverse learners. Open to graduate students only. Restricted to master's or doctoral students in psychology. Prerequisite: PSY 6100 or instructor approval. 3 hours

PSY 6760 Skinner's Behaviorism A consideration of About Behaviorism, Beyond Freedom and Dignity, and Contingencies of Reinforcement, especially as they consider issues of broad scientific, philosophic, and social significance. Open to graduate students only. Prerequisite: Nine hours of graduate credit in psychology or instructor approval. 3 hours

PSY 6810 Assessment I An introductory course in individual assessment with particular emphasis on psychometrics, objective personality assessment, and behavioral assessment. This course covers basic psychometric concepts directly related to test administration and interpretation and will prepare students to operate with sufficient understanding of assessment issues in various clinical and research roles. The course examines basic concepts in personality assessment including administration, scoring, and interpretation of objective personality assessment techniques. The course also covers behavioral assessment strategies and functional analysis of behavior self-report measures, behavioral interviewing, direct observation techniques, and physical recording. Open to graduate students only. Restricted to master's or doctoral students in psychology. Prerequisites: PSY 6200 and PSY 6210. 3 hours

PSY 6830 Assessment II A course on the theory and practice of advanced individual assessment techniques with particular emphasis on intellectual, aptitude, and basic neuropsychological assessment. This examines the complexities of measuring theoretical notions like intelligence and aptitude. It also covers administration, scoring, and interpretation of individual assessment techniques in cognitive and neuropsychological functioning. The course places and emphasis on integrative report writing. Open to graduate students only. Restricted to master's or doctoral students in psychology. Prerequisites: Graduate program status; PSY 6200 and PSY 6210. 3 hours

PSY 6900 Behavioral Approaches to College Education This course addresses selection and use of text materials, the role of lecture and discussion, examinations, grading practices, all considered from a behavioral perspective. Higher education is emphasized. Open to graduate students only. Restricted to master’s and doctoral students in psychology. 3 hours

PSY 6910 College Teaching Practicum Supervised practice in the instruction of psychology at the undergraduate level. The student will be responsible for the design, execution, and evaluation of a college course section involving undergraduate students. 3 hours

PSY 6920 Grant Writing in the Behavioral Sciences This course will provide an overview of the process used to secure extramural funds for research and training in the behavioral sciences. Students will learn how to find potential funding sources, develop ideas that may merit funding, develop a budget, prepare grant applications, and react to reviewers' comments. Students will prepare a grant proposal and evaluate proposals prepared by others. Open to graduate students only. Restricted to master’s and doctoral students in psychology. Prerequisite: PSY 6100 or instructor approval. 3 hours

PSY 6950 Doctoral Internship in Behavior Analysis This is an off-campus internship course for doctoral students in the Behavior Analysis Program. Requires a written application and permission from the Behavior Analysis Program Committee. May be repeated for credit. Open to graduate students only. Prerequisite: Approved application required. 1 to 3 hours

PSY 6970 Advanced Topical Studies in Psychology An in depth examination, discussion, and survey of selected research and/or professional topics. May be repeated for credit, although the total number of credits may be limited by the degree program. Students should consult the program advisor. Open to graduate students only. Prerequisite: Department approval. 2 to 4 hours

PSY 6980 Clinical Practicum in Psychology I This is the entry-level practicum for students in the Clinical Psychology program. Students enrolled in this course will gain a range of therapy and assessment experiences in the Psychology Clinic under the supervision of licensed Clinical faculty. Open to graduate students only. Prerequisites: PSY 6640 and PSY 6690; written permission must be obtained from the Department Clinical Committee. 1 to 3 hours

PSY 6990 Clinical Practicum in Psychology II Experience in a broad range of professional functions included in the practice of psychology under the supervision of a licensed psychologist. The experience includes, but is not limited to, psychotherapy, diagnostic testing and consultation. The experience involves not less than 500 clock hours (15 weeks) in an organized health care setting. Open to graduate students only. Prerequisite: PSY 6980; written permission must be obtained from the Department Clinical Committee. 1 to 3 hours

PSY 7000 Master's Thesis Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisite: Application, department and Graduate College approval. 1 to 6 hours

Psy 7050 Master’s Project Students will work on an applied project in their area of specialization in psychology. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Restricted to masters in psychology. Prerequisite: Advisor approval. 1 to 6 hours

PSY 7100 Independent Research Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisite: Application and department approval. 1 to 6 hours

PSY 7120 Professional Field Experience Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisite: Application and department approval. 2 to 12 hours

PSY 7250 Doctoral Research Seminar Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisite: Application and department approval. 2 to 6 hours

PSY 7300 Doctoral Dissertation Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisites: Department and Graduate College approval. 1 to 15 hours

PSY 7320 Doctoral Clinical Internship Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisite: Application and department approval. 1 to 4 hours

PSY 7350 Graduate Research Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisite: Application and department approval. 1 to 6 hours

Public Affairs and Administration

PADM 5830 Grant Writing for Nonprofit Organizations This course focuses on the art and process of proactive grant writing. The course is conducted in a workshop format with emphasis on writing a grant proposal and on logical relationships between sections of a proposal. Emphasis is placed in integrating research into the proposal development process, writing effective goals and objectives, and incorporating summative and formative evaluation processes into the grant. Collaborative aspects of grant writing are emphasized. Open to upperclass and graduate students. 3 hours

PADM 5840 Promoting Nonprofit Organizations This practicum applies marketing principles to nonprofit organizations. Emphasis will be placed on techniques for defining and identifying the organization's contributor, volunteer, and client markets. Strategies for conducting a market assessment, measuring customer satisfaction, and using information to develop a marketing plan will be covered. These strategies will include the identification of marketing offers, communication messages and methods, cause related marketing, and the development of market budgets. Open to upperclass and graduate students. 3 hours

PADM 5870 Fund Raising for Nonprofit Organizations This practicum enables students to develop fund raising and fund management skills. Emphasis is on understanding the various forms of fund raising, such as the annual fund, special events, deferred giving, major gifts, special project campaigns, corporate/foundation gifts, and direct mail. Students will also be provided with a working knowledge of permanent endowment funds. Students will learn to assess the fund raising readiness of organizations and develop fund raising plans unique to their organizations. Open to upperclass and graduate students. 3 hours

PADM 5980 Readings in Public Administration This course offers a program of independent study to provide well qualified MPA candidates with an opportunity to explore in depth a topic or problem of interest under the guidance of a faculty member. Planning a topic for investigation is the joint responsibility of the candidate and supervising faculty. Approval is contingent upon the merits of the proposal. Approval of both the supervising faculty member and the School Director is required prior to enrolling in this course. May be repeated for credit. Open to upperclass and graduate students. 1 to 3 hours

PADM 5990 Topics in Public Administration This changing topics course deals with particular issues of interest and concern to students of public affairs and administration. Since content varies, students are advised to read course descriptions distributed by the School prior to enrollment. The course may vary in the number of credit hours awarded and may last more or less than a semester's or session's length. May be repeated for credit. Open to upperclass and graduate students. 1 to 4 hours

PADM 6000 Historical and Legal Foundations of American Public Administration This course is designed to introduce major ideas, developments, and figures in the field of public administration. The course also introduces professional codes of ethics as well as American legal institutions and processes and discusses the relationship between the public service and the legal system. Open to graduate students only. 3 hours

PADM 6060 Analytical Methods This course focuses on formulating questions, selecting analytical methods, developing conclusions and recommendations, and understanding the use of appropriate research methodologies in public administration. The course demonstrates the application of the following to both practical professional analysis and scholarly inquiry; the exploration of the relevant scholarly and professional literature, the design of research approaches, the utilization of various quantitative and qualitative research methods and techniques; the collection, manipulation, interpretation, and presentation of data gathered; and the use of information thus obtained in the solution of policy problems confronting professional administrators. Prerequisite: PADM 6070 or instructor approval. 3 hours

PADM 6070 Quantitative Data Analysis This course is an introduction to quantitative analytical techniques employed by professional administrators in the collection, manipulation, interpretation, and presentation of data utilized to test hypotheses and analyze policy problems. Quantitative methods may include frequency distribution, sampling techniques, measures of central tendency, probability, variability, regression, measures of association, correlation, and various other applied quantitative measures. MPA students must enroll in this course prior to enrolling in PADM 6060. Open to graduate students only. 3 hours

PADM 6080 Organization Theory and Behavior This course has the following objectives: a) to familiarize participants with the basic concepts, models, and theories of organization; b) to develop a better understanding of individual, group, and organization behavior; c) to provide a conceptual foundation upon which theoretical knowledge can be applied to organizational and managerial problems. In pursuit of these objectives, the following subjects will be considered: theories of organization and management; individual behavior; group dynamics; organization change; organizational performance, efficiency, and effectiveness. Open to graduate students only. 3 hours

PADM 6110 Administrative Law and Governmental Regulation This course examines how administrative laws and public regulations control and regulate the activities of local, state and federal government officials and the agencies by which they are employed. It will consider the requirements for, and limits on, the exercise of power by elected and appointed officials. Special attention is devoted to the development, adoption, and enforcement of administrative laws and government regulation. Open to graduate students only. 3 hours

PADM 6120 Principles of Public Budgeting This course utilizes a combination of "hands-on" exercises and theory to examine the preparation of government budgets. Topics to be addressed include criteria for evaluating sources of government revenue, the politics of budgeting, alternative budget formats such as line item and performance, cost center accounting, and the methodologies for developing revenue projections, capital improvement programs and operating budgets. Ability to use spreadsheets such as Excel or Lotus is required. Open to graduate students only. 3 hours

PADM 6130 Local Government Administration This course addresses the management challenges faced by local public administrators in managing American local government under conditions of substantial physical, economic, social, and political change. Students will review current societal trends affecting local communities and then examine how these trends, and the roles and relationships of major stakeholders in local government, impact local policy decision-making and governmental administration. Students will develop skills in applying public administration principles and methods to managing public organizational adaptation and change. Open to graduate students only. 3 hours

PADM 6140 Managing Community Growth and Development The course is intended for public managers involved in guiding community growth and/or managing local economic development. The course will focus on the dynamics of developing the community's economy and managing its physical growth and expansion in ways that enhance and sustain the quality of local and regional community life. Students will examine policies, programs, and techniques in the public management of economic development, business attraction and retention, land use, growth management, housing, public facilities and infrastructure, and environmental preservation. The course will also address the economic, demographic, spatial, and political forces driving urban change and impacting community sustainability. Open to graduate students only. 3 hours

PADM 6150 State and Local Government Finance This course examines a variety of financial tools that enhance a public official's ability to cope with the crosscurrents of expanding government responsibilities and public resistance to higher taxes and fees. The tools that are addressed by this course include governmental accounting concepts and procedures; methods of financing infrastructure projects; risk management; calculating the costs of providing goods and services; and cost-benefit, cost effectiveness, and cost revenue analysis. Open to graduate students only. 3 hours

PADM 6170 Intergovernmental and Interorganizational Relations This course examines the interactions among governmental and non-governmental entities. A majority of the course examines the political, economic, constitutional, legal, and historical foundations of intergovernmental relations, the types and implications of grants-in-aid, and fluctuations in the powers and responsibilities of local, state, and national governments. The remainder of the course analyzes the relationships among public agencies, legislative bodies, the executive, and interest groups. Open to graduate students only. 3 hours

PADM 6180 The Political and Economic Environment of Public Administration This course examines the interplay of political and economic forces that impact roles and capacities of public administrators in the governmental and non-profit sectors. The course also reviews trends in the global economic system affecting the roles of public-serving organizations in the economy in regulating, stimulating and mitigating the social and political impacts of the private economy. Covered topics may include: the administrative politics of interest group influence and agency constituency building; the politics of bureaucratic accountability, performance and legislative control; interactions between citizens and bureaucracy; bureaucratic ethics; the economic roles of government and the non-profit sector in the global economy; and ties between the administration of public-serving organizations and economic institutions and processes. Students are encouraged to obtain a fundamental knowledge of basic economic concepts prior to taking the course. This course should be taken early in the Master's program. Open to graduate students only. 3 hours

PADM 6270 Human Resources Administration A survey course that examines the concepts and practices of human resource management and reviews the functions performed by human resource administrators and other agency officials. Areas of consideration may include, but are not limited to, human resources planning and recruitment, training and development, compensation, information systems, and employee relations. Open to graduate students only. 3 hours

PADM 6290 Supervisory Skills for Administrators This elective course includes a consideration of the five most important functions of middle level managers and first line supervisors: decision making, planning, organizing, leading, and controlling. In order to assist participants develop their supervisory skills, this course utilizes case studies, small group discussions, role playing, simulations, and other practical skill building exercises. Open to graduate students only. 3 hours

PADM 6390 Managing Public Performance and Information Technology This course explores the management and measurement of public (government and nonprofit) agency performance and productivity. It focuses on defining public-serving organizational performance and productivity in practical terms; exploring management principles and practices designed to enhance the performance and productivity of these agencies, and managing the design and application of information technology to enhance public performance and citizen access. Open to graduate students only. 3 hours

PADM 6400 Nonprofit Governance This course examines the governance of nonprofit organizations with special emphasis on a nonprofit's responsibilities to the state and federal government. Topics include the history and role of nonprofit organizations in U.S. society, size and scope of the various nonprofit subsectors, the legal establishments and maintenance of nonprofit organizations, dynamics between board and staff, and identifying and addressing ethical issues. Open to graduate students only. 3 hours

PADM 6431 Budget Development and Accounting for Nonprofit Organizations This course will examine procedures for projecting revenues, how tax policies affect private contributions to nonprofits, and the process for developing operating budgets. Accounting and financial reporting standards as well as financial analysis techniques, internal controls, board oversight, and external auditors will also be addressed. An ability to use spreadsheets (e.g., Excel or Lotus) is necessary. Open to graduate students only. 3 hours

PADM 6441 Human Resources for Nonprofit Organizations This course examines current theories, practices, and issues of human resources management in the context of ethical strategic management in nonprofit organizations. Human resources systems for both employees and volunteers are explored with selected foci in human resources planning, recruitment, retention, recognition, rewards, and risk management. Open to graduate students only. 3 hours

PADM 6461 Evaluation of Nonprofit Organizations Examination of how nonprofit programs are assessed for need and evaluated as to their operations and outcomes. The course includes discussion of the role and conduct of research in the program evaluation process, performance expectations of multiple stakeholders, as well as the methods of effective evaluation and analysis. Open to graduate students only. 3 hours

PADM 6471 Leadership in Nonprofit Organizations This course integrates theory-based and practice-based approaches to leader-follower dynamics and service delivery in the nonprofit organization setting. The course focuses on such topics as leader styles, characteristics and strategies; leading in a diverse world, leading in times of crisis and complexity; and leading for the future. This course replaces SWRK 6230 in the curriculum of both the MPA and NLA programs. Open to graduate students only. 3 hours

PADM 6481 Planning in Nonprofit Organizations This course focuses on planning programs within the context of strategic planning. Tools for developing a strategy and new programs to fulfill the strategy will be examined. Both strategic and program planning are viewed as creative, dynamic processes carried out by a team. The stages and tasks of strategic and program planning are studies from analytical, technical and interactive perspectives. Open to graduate students only. 3 hours

PADM 6515 Administration and Delivery of Health Services This course addresses the administration and delivery of health services in the United States with emphasis placed upon the manager's

functioning as a transactional and transformational leader by gaining an understanding of how the various health care sectors function and interact with each other and the managerial functions and interactions associated with each sector. This understanding will include and not be limited to identifying the basic models of health care delivery and their effect upon access, quality, cost, and innovation in the U.S.A. and other countries. Open to graduate students only. 3 hours

PADM 6520 Financial Management of Health Care Organizations By applying basic accounting and financial management techniques and principles from the intra-organizational perspective, this course examines the use of financial statements to assess financial viability and performance of health care organizations, different ways to allocate cost, pricing and service decision-making, and financial planning and budgeting. Open to graduate students only. 3 hours

PADM 6532 Health Care Policy and Law This course explores the political, legal and regulatory, ethical, and theoretical basis for the evolution of U.S. federal and state health care policy; the various U.S. and international health care models; and the applied effects of public policy on health care economics, delivery systems, and health care organizations. Open to graduate students only. 3 hours

PADM 6535 Health Care Economics and Finance I This course introduces the non-financial health care manager to financial management, budgeting, and economics in the public and nonprofit sectors. Topics covered in this course include: introduction to financial management, financial decision making, basic financial and managerial accounting, third party payers, revenue management, product cost development, budgeting analysis, variance analysis, elasticities, supply, and demand. Open to graduate students only. 3 hours

PADM 6545 Health Care Economics and Finance II This course is intended for non-financial managers who desire to deepen their knowledge and understanding of financial and economic management or how to direct scarce resources to most efficiently meet public and nonprofit organizational strategic goals. Topics covered in this course include: time value analysis, financial risk and return, capital acquisition, cost of capital, capital allocation, financial condition analysis, financial forecasting, financial risk management, incentives and regulatory impact. The above topics are covered through the development and use of spreadsheet analyses and other techniques. Open to graduate students only. Prerequisite: PADM 6535 3 hours

PADM 6555 Managerial Epidemiology This course develops basic epidemiological principles and applies them to the planning and development of health care organizations. Topics covered include: developing and analyzing community needs assessments, epidemiological costs and financial implications, and use of evidence bases management and medicine. Open to graduate students only. 3 hours

PADM 6610 Intellectual History of Public Administration This course traces the development of public administration theory from the founding of the American colonies to the present day, implementing research techniques in common use by intellectual historians. The course utilizes an historical approach to understand the contextual influence of thinkers and movements related to American public administration. Open to graduate students only. 3 hours

PADM 6630 Leading the Public Organization This seminar course uses theoretical and methodological research literature, documentation in a variety of media, and practical work experiences to examine the roles of leadership, human behaviors, and human resources systems in public organizations. The course addresses leadership and human behaviors within systems and chaos models in the public arena of work. Attention is given to the management of functions of human resources as well as to the activities of the employees in an organization. External influences, competing organizational systems, and identified public outcomes are also examined to complete an understanding of leader and follower roles. Open to graduate students only. 3 hours

PADM 6640 Advanced Research Design for Public Administration This course provides the opportunity for doctoral students to begin thinking through multiple methodological approaches for their dissertation research by being exposed to design techniques for quantitative, qualitative, and mixed methods research in public administration. This will also include action research and critical/feminist theory as approaches for research design. The focus will be on developing a comprehensive research design for their research, clearly connecting research designs to relevant bodies of theory, and considering multiple methodological approaches for learning more about

specific research questions. (This is not intended to lead to a completed dissertation proposal as that is the primary goal of the required Dissertation Seminar.) Open to graduate students only. Prerequisite: PADM 6070 with a grade of "B" or better. 3 hours

PADM 6650 Public Policy, Theory, and Research This course will trace the development of theory in thinking about public policy. It will explore alternative models suggesting the way that public policy is formulated and implemented. Each model reflects a different way of perceiving the relationship between government and society. The application component will require students to apply one or more of the models to a substantive policy area. Emphasis will be placed on primary sources in preparing an analytical paper. Open to graduate students only. 3 hours

PADM 6660 Contemporary Issues in Public Management Contemporary public management faces critical challenges in its present standing and future role in American society. This seminar focuses on the future of public management in government and the not-for-profit sector by (1) examining current policy and issue trends, as well as reform movements, impacting public management today; (2) reviewing the implications of these trends and movements for the future of administering American public organizations; and (3) exploring scenarios for managing public organizations in the future in selected issue and policy areas. Open to graduate students only. 3 hours

PADM 6780 Program Evaluation Pressure to reduce the nature, size and scope of government has heightened interest in evaluating the impact of governmental activities. This course will focus on how to measure the effectiveness of agency programs. Open to graduate students only. 3 hours

PADM 6800 Project Paper Seminar In this capstone seminar, MPA candidates will conduct an original, analytical research project (non-thesis) consisting of professional analysis of a management problem leading to practical implementation in governmental or nonprofit settings, or theoretical inquiry in the field of public administration. That project will produce either academic research that provides new generalized knowledge in the field or a solution to a public management problem in a specified agency. Other forms of professional inquiry and analysis may be acceptable if approved by the instructor. Open to graduate students only. Prerequisite: Departmental approval. 3 hours

PADM 6840 Management of Public Financial Resources This course relies on theory, lab assignments, and practical experience to address constitutional, statutory, political, economic, cultural, and social factors affecting fiscal policy. Public finance theory and lab assignments familiarize students with the major facets (revenue projection, capital requests, and operating expenditure requests) of the budgeting process. The role of politics, alternative mechanisms for generating revenue, methods for assessing the fiscal health of organizations, and the implications of utilizing various budget formats are also examined. Students are expected to apply the methodologies from their research courses to a financial issue. Open to graduate students only. 3 hours

PADM 6860 State Agency Administration This course examines the organization and administration of state government agencies, with special emphasis on the functions performed by major departments and their principal subunits. Executive agencies in Michigan will serve as a basis for comparing and contrasting services provided by similar agencies in other states. Each course participant will be required to analyze the current status of services provided by a particular state agency and project service demand into the future. Course participants will develop a comprehensive understanding of administration in agencies of state government. Open to graduate students only. 3 hours

PADM 6870 Legislative Relations for Public Administrators This course prepares participants to interact with policy making bodies: city councils, county commissions, or the state legislature. Participants will learn to estimate the possible impact upon their agency of legislation under consideration, to assess the probable effect of proposed legislation upon their clientele, and to project the amount of revenue to be generated by a proposed tax, fine, or fee. Open to graduate students only. 3 hours

PADM 6920 Quantitative Data Analysis II This course provides an introduction to regression analysis and an overview of limited dependent variable regression and generalized least squares regression. The purpose of the course is to develop a basic statistical competency enabling the student to apply various statistical methods and

concepts in the development and evaluation of statistical assertions. Topics may include ordinary least squares, probit and logit regression, time series and panel data models, and instrumental variables regressions as well as model specification, diagnostics, and remedial measures for missing variables, multi-collinearity, and heteroskedasticity. Application of these techniques in a variety of public administration and policy settings will be emphasized. Open to graduate students only. Prerequisite: PADM 6070 with a grade of "B" or better. 3 hours

PADM 6970 Dissertation Seminar Dissertation Seminar is intended to assist doctoral students in the preparation of a dissertation proposal and to facilitate the transition from course work to dissertation. This course will review proposal components, with particular emphasis on research design and developing the literature review, and will also focus on key issues such as dissertation format standards, psychological and time management demands, committee formation, HSIRB training, and project management. In most cases this course should be taken after comprehensive exams have been successfully passed and after all methods courses for the doctoral program are completed. Open to graduate students only. 3 hours

PADM 7100 Independent Research Designed for highly qualified graduate students or small groups who wish to pursue independent studies or group projects under the direction of a Graduate Faculty member. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisite: Application and Department approval. 3 to 6 hours

PADM 7120 Professional Field Experience This practicum is designed for MPA degree candidates who are to participate in a supervised professional field experience/internship in an agency setting. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisite: Application and Department approval. 3 to 6 hours

PADM 7300 Doctoral Dissertation Please refer to the Graduate College section for the complete course descriptions. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisite: Department and Graduate College approval. 1 to 15 hours

Science Education

SCI 5600 Science for School Science Education This course will involve participants in several activities especially designed to help them achieve an understanding of some of the important concepts of science. The course is designed and taught to address the needs of K-12 teachers. This is a variable topics course and may be repeated for credit if different topics are involved. Open to upperclass and graduate students. 3 hours

SCI 5700 Biology for School Science This course will involve participants in several activities especially designed to help them achieve an understanding of some of the important concepts of biology. This course is designed and taught to address the needs of K-12 teachers. This is a variable topics course and may be repeated for credit if different topics are involved. Open to upperclass and graduate students. 3 hours

SCI 5800 Chemistry for School Teachers This course will involve participants in several activities especially designed to help them achieve an understanding of some of the important concepts of chemistry. This course is designed and taught to address the needs of K-12 teachers. This is a variable topics course and may be repeated for credit if different topics are involved. Open to upperclass and graduate students. 3 hours

SCI 5850 Physics for School Science This course will involve participants in several activities especially designed to help them achieve an understanding of some of the important concepts of physics. This course is designed and taught to address the needs of K-12 teachers. This is a variable topics course and may be repeated for credit if different topics are involved. Open to upperclass and graduate students. 3 hours

SCI 5900 Earth Sciences for School Science Education This course will involve participants in several activities especially designed to help them achieve an understanding of some of the important concepts of earth science. This course is designed and taught to address the needs of K-12 teachers. This is a variable topics course and may be repeated for credit if different topics are involved. Open to upperclass and graduate students. 3 hours

SCI 5980 Readings in Science To be used by students seeking work in topics not otherwise available. The student is limited to not more than four hours in all reading courses and work must be completed under a member of the graduate faculty. May be repeated for credit. Open to upperclass and graduate students. 1 to 4 hours

SCI 6010 Problems in Science Education This independent study course allows students to study various problems in Science Education under the direction of a supervising faculty member. Individual or small groups of qualified students may be involved in these problem areas reflecting the current concerns of Science Education. The course is designed to meet the needs of students for first-hand experience in field or laboratory research, pilot projects testing new ideas or concepts, or developing learning materials or resources. The course may be repeated for up to 4 hours of credit. Open to graduate students only. 1 to 4 hours

SCI 6140 Science: Historical and Philosophical Perspectives This course utilizes work in the history and philosophy of science to provide a critical perspective for dealing with the question: “What about science is most important for a student to know?” The course will address: the nature of scientific disciplines (the theories and problems which characterize them); the relations between theory and the empirical work; and the nature of theory change in the sciences. SCI 6140 is meant to provide a broad foundation for subsequent curriculum development, instructional design, and research into the teaching and learning of the sciences. Open to graduate students only. 3 hours

SCI 6145 Introduction to History and Philosophy of Science for Teachers An ONLINE graduate level course intended to introduce teachers to history and philosophy of science. The focus is on issues associated with the nature of science that are recognized in state and national standards to be as essential part of the K-12 science curriculum. The course explores research on typical misconceptions students have about nature of science topics and considers the implications of these findings for how science should best be taught. This ONLINE course does NOT count towards the doctoral degree in science education. It is intended for M.A. students in Western Michigan University’s graduate program in science education. Open to graduate students only.
3 hours

SCI 6150 Science Education: Historical and Philosophical Foundations This course will familiarize students with the history of science education in the United States, leading up to current national reform efforts. This historical approach will provide a foundation to address curricular and literacy issues as well as the relevance of the history and philosophy of those concerns. The course will address two themes or “commonplaces” of education in a science education context-the social milieu and the curriculum. Open to graduate students only. 3 hours

SCI 6155 Science Education: Historical and Philosophical Perspectives for Teachers An ONLINE graduate level course intended to familiarize students with the history of science education in the United States, leading up to current national reform efforts. This historical approach will provide a foundation to address curricular and literacy issues as well as the relevance of history and philosophy of those concerns. The course will address two themes or common places of education in a science education context - the social milieu and the curriculum. This ONLINE course does NOT count towards the doctoral degree in science education. It is intended for M.A. students in Western Michigan University’s graduate program in science education, who because of distance or scheduling problems cannot take our traditional face-to-face course SCI 6150 on the main Kalamazoo campus. Open to graduate students only. 3 hours

SCI 6160 Science Education: Models of Learning and Teaching This course will complement SCI 6150 in addressing the remaining themes or “commonplaces” of education in a science education context, namely learning and teaching. The major models of learning and approaches to teaching which are

compatible with those models will be examined, including their relevance to classroom practice. Open to graduate students only. 3 hours

SCI 6165 Cognition and Teaching An ONLINE graduate level course intended to compliment SCI 6155 in addressing themes or commonplaces of education in a science education context, namely learning and teaching. The major models of learning and approaches to teaching that are compatible with those models will be examined, including their relevance to classroom practice. This ONLINE course does NOT count towards the doctoral degree in science education. It is intended for M.A. students in Western Michigan University's graduate program in science education. Open to graduate students only. 3 hours

SCI 6170 Science Education: Early Research I SCI 6170 is the first of a two-course series designed to give science education doctoral students direct experience in the process of conducting original research. The fall semester (SCI 6170) focuses on developing students' skills in reading, critically reviewing, and synthesizing the primary literature, as well as in designing a publishable research study. In the following spring semester (SCI 6171), students will carry out the research project. Open to graduate students only. Restricted to doctoral students in science education. Prerequisite: Instructor approval. 3 hours

SCI 6171 Early Research II SCI 6171 is the second of a two-course series designed to give science education doctoral students direct experience in the process of conducting original research. In the fall semester, SCI 6170 focuses on developing students' skills in reading, critically reviewing, and synthesizing the primary literature, as well as in designing a publishable research study. In the spring semester, students in SCI 6171 carry out the research project. Open to graduate students only. Restricted to doctoral students in science education. Prerequisite: SCI 6170 and instructor approval. 3 hours

SCI 6180 Teaching and Learning in the College Science Classroom This course is to prepare students to teach post-secondary science. The course focuses on theoretical background, course and lesson development, and instructional and assessment strategies essential for successful college level science teaching. Doctoral students may take the course twice. There are additional course requirements for second-timers. Open to graduate students only. 3 hours

SCI 6200 Topics in Science Education This course will present, analyze, and evaluate methods and techniques of teaching science. Topics may include new approaches for teaching science, new science curriculum, laboratory practices, science education research, motivational techniques, and other methodological problems confronting science teachers. May be repeated for credit provided different topics are involved. Open to graduate students only. 1 to 3 hours

SCI 6205 Science Content and Pedagogy in the Secondary School This graduate level introductory secondary science methods course is designed to strengthen science content knowledge, and build familiarity with national and state science standards for K-12 students. The course develops models of effective instructional strategies designed to promote student learning and understanding of science concepts and processes. Open to graduate students only. 3 hours

SCI 6210 Topics in Science This course is designed to examine various science concepts and new developments of science of interest to science teachers. Each course will be subtitled, and the content will vary to reflect the various sciences, new developments and emphases, and the needs of the science teaching community. The course may be repeated for credit provided different topics are involved. 2 to 6 hours

SCI 6250 Environmental Science Seminar Analysis of case studies of environmental problems. Covers the scientific, social, and political problems involved in environmental action and will include experiences with management of energy and material resources. May be repeated for credit up to a maximum of six hours. Open to graduate students only. 2 to 4 hours

SCI 6260 Curriculum Studies in Science Education This course examines fundamental issues related to science curricula and curricular studies, primarily at the K-12 levels, while utilizing examples from historical and current efforts in science education. Students will explore the history of science curriculum reform

efforts through current practices. Students will develop expertise in science curriculum analysis, the development of science curriculum materials, including formative assessment. Open to graduate students only. 3 hours

SCI 6305 Science Teaching and Learning in the Secondary School This graduate level secondary science methods course and field experience is designed to strengthen and develop understanding about student learning, classroom environment, and assessment strategies. Building on SCI 6205, this course focuses on instructional planning and effective instructional strategies to promote student learning and understanding of science concepts and processes. Topics, materials and strategies discussed and developed in coursework are explored, observed and tested in field experience. Open to graduate students only. Restricted to master's in Practice of Teaching: Foundations for Teaching. Prerequisite: SCI 6205 3 hours

SCI 6900 Science Education Seminar Designed to provide an integrating experience for students in the Science Education master's and doctoral programs. May be repeated for credit. 3 hours

SCI 7000 Master's Thesis Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisite: Application, department and Graduate College approval. 1 to 6 hours

SCI 7100 Independent Research Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisite: Application and department approval. 2 to 6 hours

SCI 7300 Doctoral Dissertation Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisite: Application, department and Graduate College approval. 1 to 15 hours

Sociology

SOC 5200 Studies in Social Psychology: Variable Topics Further analysis of selected topics in social psychology not intensively covered in other courses. Specific topic will be designated in the course title when scheduled. May be repeated for credit with a different topic. Open to upperclass and graduate students. 3 hours

SOC 5210 Social Psychology of Emotions An examination of human emotions as they relate to thinking, motivation, and social action. Emphasis will be given to the ways in which emotions signal the importance of social events for the individual self, the role of group norms in defining situationally appropriate emotional feeling and expression, the management of emotions, and the ways that emotions function as both determinants and consequences of patterns of interpersonal activity. Open to upperclass and graduate students. 3 hours

SOC 5235 Self and Social identities This course discusses how micro-level identities and interactions illustrate macro-level social inequalities. Students will learn how varied structural and contextual factors affect individuals' perceptions of themselves, their behaviors, their interactions with others, and how they are perceived in society based on their structural positions such as gender, class, race, nationality, religion, and mental illness. Open to upperclass and graduate students. 3 hours

SOC 5420 Medicine, Culture and Society This course explores theoretical and practical issues in how to approach the study of illness and medical system. This is an interdisciplinary and internationally focused class that will examine the classic literature that grounds the study of medicine and society as well as recent theoretical literature that demonstrates the breadth of approaches today. The class focuses on an examination of the work of interdisciplinary medical social scientists with several thematic topics including medicalization, the history of health disparities, the structure of health systems and global marketing of health products and the consequences of medical interventions. Our focus in on qualitative research that theoretically explores the ways in which cultural and social knowledge (including class, race and gender) influences health, illness and health outcomes. Open to upperclass and graduate students. 3 hours

SOC 5600 Corporate and Governmental Crime An examination of the crimes committed by business corporations and government agencies. The course describes the nature, extent, and costs of these organizational crimes, explains the structural and organizational forces which give rise to such crimes and analyzes the problem of controlling organizational offenders. The course also examines the political process whereby corporations and governments come to be defined as deviant or criminal. Open to upperclass and graduate students. 3 hours

SOC 5620 Victimology The study of crime victims, the probabilities of victimization, victim-offender relationships, the treatment of victims by the criminal justice system and the economic, social, and psychological impact of victimization. Open to upperclass and graduate students. 3 hours

SOC 5630 Gender and Justice This course provides an overview of the relatively recent field of women, crime and justice, with particular direction guided by an issues approach. A wide variety of current research and theory in this realm are critically examined. The specific subtopics covered in this course encompass gender and discrimination in society at large, within the sociological/criminological academy, and within the criminal justice system. Broad feminist theoretical and methodological perspectives are drawn upon to contour the examination of women as criminal offenders, as victims of crimes such as rape and intimate violence, and as professional workers within the criminal justice system. Open to upperclass and graduate students. 3 hours

SOC 5680 Race, Ethnicity, and Justice This course addresses the multicultural dynamics that effect the definitions (s) and distribution of justice in the United States. The primary focus is the differential treatment of African Americans, American Indians, Latinos, and Asian Americans throughout the major institutions of society, particularly the legal institution. A critical analysis of the social, political, and economic forces that support the current social structure will direct the inquiry. Open to upperclass and graduate students. 3 hours

SOC 5780 Sociology of Law An examination of legal organization, the legal profession, and legal norms in the United States and other western societies. Emphasis will be placed upon the relationship between the legal system and the society in which it functions. Open to upperclass and graduate students. 3 hours

SOC 5900 Variable Topics in Sociology An examination of a selected topic in the field of sociology. The focus of the course may be theoretical, methodological, or substantive. Possible topics could include feminist theory, sampling and survey design, poverty, and cultural studies. May be repeated for credit with a different topic. Open to upperclass and graduate students. 3 hours

SOC 5980 Directed Individual Study A program of independent study (reading or research) to provide the unusually qualified sociology student with the opportunity to explore a topic or problem of interest, under the guidance of one of the faculty of the department. The initiative for planning the topic for investigation must come from the student. Approval is contingent upon the merit of the proposal. Maximum of four hours may be applied toward master's degree. Enrollment beyond the first semester may be either for the same topic or for a new topic. Prerequisite: Approval of instructor and the department chairperson. 2 to 6 hours

SOC 6000 Proseminar in Sociology There are three major goals for this course. First, it will expose new graduate students to the full range of departmental faculty, their research, and their teaching interests. Second, it will assess the current state of the discipline, focusing on substantive, methodological, and/or theoretical issues. Third, it will begin the professional socialization of the student with respect to departmental policies, procedures, and requirements. Graded on a Credit/No Credit basis. Open to graduate students only. 3 hours

SOC 6020 Sociological Theory I An intensive and critical study of major sociological theories developed in the 19th and first half of the 20th century. The course will examine major theorists that are part of the European and American classical traditions, as well as contemporary authors seeking to expand on these traditions. The course will examine the historical context of social theories, key methods used in analysis, explanatory logic's of social structure, interaction and change, patterns of influence among theorists, and the uses of theory for analyzing social problems and issues. Open to graduate students only. 3 hours

SOC 6030 Contemporary Theory: Culture, Social Action, and Society An intensive and critical study of contemporary sociological theories. The course will focus on the problem of how the society that human beings make-and live through their social action-is structured by historically created cultural systems. Both modernist and post-modernist critiques of culture will be examined. Open to graduate students only. Prerequisite: SOC 6020 3 hours

SOC 6040 Sociological Theory II An intensive and critical study of key directions in sociological thought in the second half of the 20th century and the first part of the 21st century. The course will examine the historical context of social theories, key methods used n analysis, explanatory logic's and social structures, interaction and change, patterns of influence among theorists, and the uses of theory for analyzing social problems and issues. Open to graduate students only. Prerequisite: SOC 6020 3 hours

SOC 6050 Studies in Sociological Theory: Variable Topics Advanced study and exploration, following seminar format, of topics of interest to faculty and students, for example: various role theory formulations and their usefulness in understanding social behavior, ethno-methodology, philosophy of science, experimental design, Marx, Weber, or other selected theorists. May be repeated for credit with a different topic. Open to graduate students only. Prerequisite: Instructor approval. 3 hours

SOC 6060 Research Design and Data Collection I This course is designed to provide experience with the formulation of research problems and exposure to a range of quantitative and qualitative data gathering techniques. Logistical and ethical issues associated with the various techniques will be discussed (e.g., sampling, informed consent). Students will have experience identifying and collecting archival and observational data, as well as constructing and executing a simple experiment. Open to graduate students only. 3 hours

SOC 6070 Logic and Analysis of Social Research I This course is designed to provide a thorough grounding in basic univariate and bivariate descriptive and inferential statistics for social scientists. Manipulation and processing of data using SPSS also will be covered. Open to graduate students only. Prerequisite: SOC 6060. 3 hours

SOC 6200 Research Design and Data Collection II This course focuses on some of the methodological problems and issues related to the design of sociological research and the collection of data (e.g., validity, reliability). Emphasis will be placed on the selection and design of appropriate qualitative and quantitative research methods and their consequences for the research process. Students will have experience with the analysis of textual or documentary information, the design and administration of focus groups, and the construction of a sample survey. Open to graduate students only. Prerequisite: SOC 6060 with a grade of “B” or better. 3 hours

SOC 6210 Logic and Analysis of Social Research II This course offers an in depth coverage of multiple regression, including diagnosis and correction of assumption violations, use of discrete variables in multiple regression analysis, and an introduction to path analysis. Open to graduate students only. Prerequisite: SOC 6070 with a grade of “B” or better. 3 hours

SOC 6300 Studies in Social Problems: Designated Topics A detailed study of a social problem area through student reports and seminar discussion. Instructor will select specific topic. Course is intended to provide intensive joint exploration of significant sociological issues. May be repeated for credit with a different topic. Open to graduate students only. Prerequisite: Instructor approval. 3 hours

SOC 6510 Social Psychological Theory A study of major theoretical approaches in social psychology and their methodological and substantive implications. Open to graduate students only. Prerequisite: SOC 3200 3 hours

SOC 6600 Theoretical Issues in Criminology This course provides a basic overview of criminological theories and theoretical perspectives. With this as a foundation, theories will be critically analyzed and applied to criminal and delinquent behavior. In addition, issues of theory building and integration will be addressed. Open to graduate students only. 3 hours

SOC 6630 Comparative Criminology An analysis in depth of crime as this phenomenon is viewed in Sweden, Germany, Poland, and other eastern and western European countries. Emphasis is placed on theoretical and etiological approaches in different societies, and the applicability and tests of theories in these societies. Open to graduate students only. 3 hours

SOC 6640 Studies in Criminology: Variable Topics This seminar is designed to provide in depth analysis and assessment of various substantive topics within criminology, including race and crime, gender and crime, capital punishment, and/or specific types of criminal behaviors. May be repeated for credit with a different topic. Open to graduate students only. 3 hours

SOC 6650 Research Issues in Criminology An advanced course emphasizing: (1) The examination of current issues in the measurement and analysis of crime, and (2) Development of research skills relevant to criminological research. Students will demonstrate their mastery of research skills by conducting their own analysis of crime data. Open to graduate students only. 3 hours

SOC 6750 Studies in Comparative Sociology: Variable Topics Intensive analysis of selected topics using a comparative frame of reference. The seminar will focus on such topics as major theoretical perspectives, methodological issues, and interpretation of studies of such institutions as: educational systems, industrial systems, and family systems. May be repeated for credit with a different topic. Open to graduate students only. Prerequisite: Instructor approval. 3 hours

SOC 6800 Studies in Research Methodology: Variable Topics A seminar on advanced theoretical and methodological problems which are important to systematic research in sociology. Suggested specialized topics include: philosophy of the social sciences relationship between theory and research, and model building and testing. May be repeated for credit with a different topic. Open to graduate students only. Prerequisite: Instructor approval. 3 hours

SOC 6810 Advanced Multivariate Analysis This course covers multivariate statistical techniques, including such topics as time-series analysis; structural equation modeling; confirmatory factor analysis; hierarchical modeling techniques; linear probability, logit, tobit, and probit estimation of models with discrete dependent variables; and logistic regression. Open to graduate students only. Prerequisite: SOC 6210 3 hours

SOC 6820 Qualitative Methods This course covers important techniques in qualitative sociological research, including participant observation and in-depth interviewing. Students will study and practice these methods, incorporating issues of recording and coding data and the ethical norms governing such research. They will also address theoretical and epistemological issues related to the place of qualitative methods in the sociological toolkit. Open to graduate students only. 3 hours

SOC 6870 Evaluation Research I The basic purpose of this course is to familiarize students with the various research techniques for evaluating action agencies through a survey of the literature, study of evaluation models, and study of techniques and procedures used in evaluation. Open to graduate students only. 3 hours

SOC 6880 Methods of Survey Research This course is a research seminar structured to provide practical experience in the use of social surveys. Both applied and disciplinary utilizations will be studied as will the conceptualization and measurement phases of survey design, the implications of the cognitive processes at work in survey research, the analysis of survey data, and the administration of large scale survey projects. Open to graduate students only. 3 hours

SOC 6910 Variable Topics in Sociology An examination of a selected topic in the field of sociology. The focus of the course may be theoretical, methodological, or substantive. May be repeated for credit with a different topic. Open to graduate students only. 1 to 6 hours

SOC 7000 Master's Thesis Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisite: Application, department and Graduate College approval. 1 to 6 hours

SOC 7100 Independent Research Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisite: Application and department approval. 2 to 6 hours

SOC 7120 Professional Field Experience Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisite: Application and department approval. 2 to 12 hours

SOC 7250 Doctoral Research Seminar Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisite: Application and department approval. 2 to 6 hours

SOC 7300 Doctoral Dissertation Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisite: Application, department and Graduate College approval. 1 to 15 hours

SOC 7350 Graduate Research Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisite: Application and department approval. 2 to 10 hours

Spanish

SPAN 5020 Spanish for Graduate Study Spanish instruction for graduate students enrolled in a degree program who need knowledge of Spanish for their field of study. Students will sit in appropriate level course for learning. May be repeated for credit. May not be taken by undergraduate students in any field nor by graduate students of Spanish. Prerequisites: Approval of department of student's graduate program and approval of Department of Spanish. 3 to 4 hours

SPAN 5260 Survey of Spanish Literature to the 18th Century A survey of Spanish literature from its origin to, and including, the seventeenth century. Open to upperclass and graduate students. Prerequisites: SPAN 3160, SPAN 3170, and SPAN 3250. 3 hours

SPAN 5270 Survey of Spanish Literature from the 18th Century to the Present A survey of Spanish literature from the eighteenth century to the present. Open to upperclass and graduate students. Prerequisites: SPAN 3160, SPAN 3170 and SPAN 3250. 3 hours

SPAN 5280 Survey of Spanish American Literature to *Modernismo* A survey of Spanish American literature from its origin to the era of *Modernismo* (late 19th century). Open to upperclass and graduate students. Prerequisites: SPAN 3160, SPAN 3170 and SPAN 3250. 3 hours

SPAN 5290 Survey of Spanish American Literature from *Modernismo* to the Present A survey of Spanish American literature from late 19th century to the present. Open to upperclass and graduate students. Prerequisites: SPAN 3160, 3170, and 3250. 3 hours

SPAN 5400 Studies in Spanish Linguistics Topics vary according to area and will be announced. Each of these courses carries separate credit, although all are listed under 5400. Topics include: Old Spanish - Evolution of the Spanish language from Latin. Spanish Language and Contemporary Society - The relationship between the Spanish language and modern Spanish culture. Spanish Word Formation - The creation of nouns, verbs, and adjectives in Spanish. Spanish Sound Systems - The organization of sound patterns and stress in Spanish. Spanish Dialectology - Differences in Spanish pronunciation, vocabulary, and grammar in different regions of the Spanish-speaking world. Spanish in Contact - How exposure to other languages affects the Spanish spoken by bilinguals. Structure of Spanish Language - Word order and principles of grammatical organization in Spanish. May be repeated for credit when topics vary. Open to upperclass and graduate students. Prerequisites: SPAN 3160, SPAN 3170 and SPAN 3240. 3 hours

SPAN 5500 Independent Study in Spanish Directed, individual study of a specific topic in a Spanish literary or linguistic area. May be repeated for credit. Open to upperclass and graduate students. Not open to minors. Prerequisite: One of the following: SPAN 5260, SPAN 5270, SPAN 5280, SPAN 5290 or SPAN 5600 and department approval. 1 to 3 hours

SPAN 5570 Modern Language Instruction I This course informs prospective teachers about the principles and practices of modern language instruction. Students study second language acquisition theory and approaches to teaching the four skills of listening, speaking, reading, and writing as well as grammer and culture. Students must complete this course and achieve a minimum score of Advanced Low on the OPI exam prior to their directed teaching internship. Open to upperclass and graduate students. 3 hours

SPAN 5580 Modern Language Instruction II This course further educates prospective teachers about the principles and practices of modern language instruction. Students engage in hands-on practice in various realms such as lesson planning, materials development, the delivery of lessons and comprehensible Spanish input in the classroom, and testing. Students must complete this course and achieve a minimum score of Advanced Low on the OPI exam prior to their directed-teaching internship. Open to upperclass and graduate students. 3 hours

SPAN 5600 Studies in Spanish Literatures Topic varies according to genre, author, or period and will be announced. Each of these courses carries separate credit, although all are listed under 5600. Thus, a student may take any or all of the offerings at various times. Representative topics which may be treated in this area include: Modern Spanish Women Writers; Modern Spanish Theatre; Modern Spanish-American Theatre; Fable and Fantasy in Early Spain; Spanish-American Literature and Film; Humor in Spanish Theatre; Sex, Lies, and Manuscripts in the Spanish Middle Ages; The Spanish-American Short Story; Spanish Short Story and Poetry; Literature of the Spanish Civil War. May be repeated for credit. Open to upperclass and graduate students. Prerequisite: SPAN 3160, SPAN 3170 and SPAN 3250. 3 hours

SPAN 6000 *Don Quijote* An in depth study of Cervantes' masterpiece. Emphasis is on literary analysis, but attention will also be paid to Cervantes' language. Open to graduate students only. 3 hours

SPAN 6050 The Linguistic Systems of Spanish Recommended for graduate students of Spanish with little or no prior experience in linguistics. This course provides a foundation in the areas of Spanish linguistics that focus on language structure at various levels. Areas covered may include phonology (sound contrasts, syllable structure, stress, intonation), articulatory and acoustic phonetics (pronunciation and perception), morphology (word formation), and syntax (phrase and sentence structure). The course prepares students for the advanced study of more specialized topics in Spanish linguistics. Open to graduate students only. Prerequisite: Acceptance into M.A. or Ph.D. in Spanish, or PTG status and instructor approval. 3 hours

SPAN 6070 Variations and Changes in Spanish Recommended for graduate students of Spanish with little or no prior experience in linguistics. This course provides a foundation in the areas of Spanish linguistics that study how the Spanish language and its usage vary and change through time, place, context, and circumstance. Areas covered may include temporal variation (history of the Spanish language), regional variation (Spanish dialectology, Spanish in contact), contextual variation (Spanish pragmatics), social variation (Spanish sociolinguistics), as well as issues in the documentation of such variation (Spanish documentary linguistics). The course prepares students for the advanced study of more specialized topics in Spanish linguistics. Open to graduate students only. Prerequisite: Acceptance into M.A. or Ph.D. in Spanish, or PTG status and instructor approval. 3 hours

SPAN 6100 Topics in Hispanic Culture The advanced study of selected aspects of Hispanic culture. Course varies according to topic and may be repeated with advisor approval. Representative topics include: Non-Castilian Spanish Cultures: Galicia, Euskadi and Catalunya; The Way of St. James and Medieval Tradition; Contemporary Spanish Cinema; Women in Spanish Society; Hispanic Culture in the United States; Ideas and Ideology in Contemporary Latin America; Spanish American Popular Culture. Open to graduate students only. 3 hours

SPAN 6200 Topics in Spanish Literature The advanced study of selected aspects of Spanish literature. Course varies according to topic and may be repeated with permission of advisor. Course varies according to topic and may be repeated with advisor approval. Representative topics include: Medieval Spanish Literature; Golden Age Poetry and Theatre; Golden Age Prose; Cervantes*: Galatea, Novelas ejemplares, Persiles y Segismunda*; Nineteenth Century Literature; Generation of 1898; Contemporary Spanish Theatre; Modern Spanish Theatre; Modern Spanish Poetry. Open to graduate students only. 3 hours

SPAN 6260 Graduate Survey of Spanish Literature to the 18th Century A survey of Spanish literature from its origins to the eighteenth century. Open to graduate students only. 3 hours

SPAN 6270 Graduate Survey of Spanish Literature from the 18th Century to the Present A survey of Spanish literature from the eighteenth century to the present. Open to graduate students only. 3 hours

SPAN 6280 Graduate Survey of Latin American Literature to *Modernismo* A survey of Spanish American literature from its origins to *Modernismo*. Open to graduate students only. 3 hours

SPAN 6290 Graduate Survey of Latin American Literature from *Modernismo* to the Present A survey of Spanish American literature from *Modernismo* to the present. Open to graduate students only. 3 hours

SPAN 6300 Topics in Spanish American Literature The advanced study of selected aspects of Spanish American Literature. Course varies according to topic and may be repeated with advisor approval. Representative topics include: Literature of the Colonial Period; Nineteenth Century Literature; Spanish American *Modernismo*; Contemporary Spanish American Fiction; Spanish American Essay; Spanish American Poetry. Open to graduate students only. 3 hours

SPAN 6400 Topics in Spanish Linguistics and Methodology The advanced study of selected aspects of Spanish linguistics and methodology. Course varies according to topic and may be repeated with advisor approval. Representative topics include General Survey of Spanish Linguistics; History of the Spanish Language; Sociolinguistics; Pragmatics and Discourse Analysis; Spanish Syntax; Acquisition of Spanish as a Second Language. Open to graduate students only. 3 hours

SPAN 6500 Methods of Teaching College Spanish Recommended for new teaching assistants in Spanish. Establishes the methodology for teaching Spanish language at the university level. Some areas covered are: How to teach in the target language; the development of appropriate classroom tasks and activities; evaluating and testing; and aspects of second language acquisition theory. Participants create and share materials to be used in their own language classrooms. Open to graduate students only. Prerequisite: Acceptance into Spanish M.A. program, or PTG status and instructor approval. 3 hours

SPAN 6600 History of the Spanish Language This course focuses on different aspects involved in the development of the Spanish language. Topics to be considered may include, among others, the evolution of different linguistic systems of Spanish and the sociocultural factors and context that influenced its development. The course will entail analysis of texts that reflect changes in language usage and attitudes toward language. Open to graduate students only. Prerequisite: Open only to graduate students admitted to Spanish curriculum or by approval of Spanish graduate advisor. 3 hours

SPAN 6770 Foreign Study Student participation in departmentally approved program of study abroad. Repeatable for credit with advisor's approval for up to 24 credit hours. Open to graduate students only. Prerequisite: Approval of Spanish graduate advisor and departmental chairperson. 1 to 12 hours

SPAN 6900 Seminar Intensive study of a particular author or of a literary, linguistic, or cultural topic. Course varies according to topic and may be repeated with advisor approval. Open to graduate students only. 1 to 3 hours

SPAN 7100 Independent Research Please refer to the Graduate College section for course description. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisite: Department approval. 2 to 6 hours

SPAN 7300 Doctoral Dissertation Please refer to the Graduate College section for course description. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisite: Graduate College approval. 1 to 15 hours

Statistics

STAT 5020 Statistics for Graduate Study Statistics instruction in existing courses at appropriate level for graduate students enrolled in a degree program who need knowledge of Statistics for their field of study. May be repeated for credit. May not be taken by undergraduate students in any field nor by graduate students in Statistics. Prerequisites: Approval of department of student's graduate program and approval of Department of Statistics. 3 to 4 hours

STAT 5610 Applied Multivariate Statistical Methods An applied treatment of multivariate procedures is presented. Classical procedures such as Hotelling's T-squared methods are discussed for the one and two sample problems and MANOVA for standard designs. Topics that will be accentuated are principal components, discriminant analysis, cluster analysis, and factor analysis. Emphasis will be on graphical methods and applications. Open to upperclass and graduate students. Prerequisites: An introductory statistics course such as STAT 2600 or STAT 3640 and a course in linear algebra. 3 hours

STAT 5630 Sample Survey Methods This course consists of a broad overview of the techniques of survey data collection and analysis and contains a minimum of theory. Topics may include: simple random, stratified, systematic, single-stage cluster, and two-stage cluster sampling; ratio and regression estimation; subpopulation analyses; problems of nonresponse; surveys of sensitive issues; minimization of survey costs; sample size determination. Real surveys are discussed and actual survey data are analyzed. Open to upperclass and graduate students.Prerequisites: An introductory statistics course such as STAT 2600 or STAT 3640 and instructor approval. 3 hours

STAT 5650 Design of Experiments for Quality Improvement This course covers statistical methods useful for improving the quality of products and systems in an industrial setting. It provides a comprehensive set of tools to use in building better products and in reducing manufacturing and other costs. The focus will be on solving real engineering problems through case studies. Taguchi methods will be discussed along with modifications from standard statistical practice. Topics will include planning an experiment, experimental strategy, Analysis of Variance concepts, factorial designs, orthogonal arrays, loss functions, signal-to-noise ratios, identifying significant factor effects, graphical methods, parameter design and tolerance design. Open to upperclass and graduate students. Prerequisite: An introductory statistics course such as STAT 2600 or STAT 3640. 3 hours

STAT 5660 Nonparametric Statistical Methods This course presents a broad overview of statistical methods commonly referred to as nonparametric or distribution-free methods. Topics include: inferences for proportions, contingency tables, goodness of fit problems, estimation and hypothesis testing based on ranking methods, measures of rank correlation, efficiency. Emphasis will be on the application of nonparametric statistical methods to data from many different applied fields. Open to upperclass and graduate students. Prerequisite: An introductory statistics course such as STAT 2600 or STAT 3640. 3 hours

STAT 5670 Statistical Design and Analysis of Experiments A course in experimental design and the analysis of variance with particular emphasis on industrial experiments. Topics include: completely randomized, randomized complete block, Latin square, and split-plot designs; orthogonal contrasts and polynomials; multiple comparisons; factorial arrangement of treatments; confounding; fractional replication. This course is molded around the complete analysis of good applied problems. Open to upperclass and graduate students. Prerequisite: An introductory statistics course such as STAT 2600 or STAT 3640. 4 hours

STAT 5680 Regression Analysis An applied course in regression analysis: simple and multiple linear regression; resolution of fit of a model, including residual analysis, precision of estimation, and tests of general hypotheses; model building; step-wise regression; use of indicator variables; non-linear regression. Open to upperclass and graduate students. Prerequisite: An introductory statistics course such as STAT 2600 or STAT 3640. 3 hours

STAT 5820 Time Series Analysis The development and practical use of seasonal and non-seasonal ARIMA (Autoregressive Integrated Moving Average) Box-Jenkins time series models is presented. Identification of correct time series models, estimation of model parameters, and diagnostic checks of identified models will be covered. The uses of these models for forecasting future trends and assessing interventions will be examined. Extensive data analysis using SAS, MINITAB, and Splus/R statistical packages are included. Topics include: regression time series models, autocorrelation partial autocorrelation, Yule-Walker equations, differencing, stationarity, autocorrelation models, moving average models, seasonality, invertibility, and Box-Pierce tests. Open to upperclass and graduate students. Prerequisites: STAT 3640 and STAT 5680. 3 hours

STAT 5850 Applied Data Mining Data mining can be described as the process of building models. For the development of models, the applied data mining course aims to go far beyond the classical statistical methods, such as linear regression. This course provides an applied overview to such modern non-linear methods as generalized additive models, decision trees, boosting, bagging and support vector machines as well as more classical linear approaches such as logistic regression, linear discriminant analysis, K-means clustering and nearest neighbors. Extensive data analyses are done using statistical programming R. Open to upperclass and graduate students only. Prerequisite: STAT 5680 or STAT 6620 or instructor approval. 3 hours

STAT 5860 Computer Based Data Analysis Computer intensive statistical methods are discussed for a variety of statistical problems, including location problems, linear and nonlinear models, mixed models, and generalized linear models (glms). These analyses include bootstrapping and other resampling techniques, computational maximum likelihood procedures, and robust procedures. The course uses simulation procedures for various probability models. The software language R is used. Open to upperclass and graduate students. Prerequisites: (STAT 2600 or STAT 3640) and STAT 5680, with a grade of "B" or better in any prerequisite, or instructor's approval. 3 hours

STAT 5990 Independent Study in Statistics Advanced students with good scholastic records may elect to pursue independently the study of some topic having special interest for them. Topics are chosen and arrangements are made to suit the needs of each particular student. May be repeated for credit. Open to upperclass and graduate students. Prerequisite: Approval of chairperson of department. 1 to 3 hours

STAT 6020 Quantitative Research Methods with Statistical Software This is an introductory course where graduate students will gain understanding of statistical research methods. Topics include: Descriptive statistics, normal and binomial distributions, sampling distributions, confidence intervals, hypothesis testing for one- and two- sample problems, regression and correlation, simple analysis of variance models and categorical data analysis. Minitab software will be used for most computations. Prerequisite: An undergraduate course in statistics or instructor approval. 3 hours

STAT 6030 Fundamentals of Biostatistics This course introduces students to statistical methods used in biomedical applications. Fundamental topics may include: basic probability, inference procedures for means and proportions, categorical data analysis, regression, analysis of variance, and nonparametric statistics. Biomedical subject matter may include: relative risk, odds ratio, diagnostic testing, bioequivalence, sequential testing, dose-response studies, and survival analysis. Emphasis will be placed on using statistical software for most of the computations and interpretation of results. Open to graduate students only. Prerequisites: STAT 2600 or STAT 3640 or instructor approval. 3 hours

STAT 6040 Statistics for Epidemiology Recent years, research in public and community health gains huge momentum. This course will cover the core concepts needed to understand, model, and interpret chronic and infectious disease risks in terms of risk factors. Topics include study design, prevalence and incidence, probability distributions, conditional probability, disease-exposure association, statistical significance, causal inference,

regression analysis, exposure modeling, and structural equation models. Several interesting applications using real data will be discussed. R software will be used for computation. Open to graduate students only. Prerequisites: STAT 2600 or STAT 3640 or instructor approval. 3 hours

STAT 6050 Fundamentals of Clinical Trials This course is designed to give an overview of the statistical issues and procedures in the various stages of drug development. Students will learn the fundamentals of design, analysis, and interpretation of clinical trials. Open to graduate students only. Prerequisites: STAT 2600 or STAT 3640 or instructor approval. 3 hours

STAT 6120 Data Analysis Variation is the central concept of the course—how to understand it, what techniques to use, how to draw conclusions from data and evaluate the strength of such conclusions. Emphasis will be placed on graphical methods, simulations, computer usage, sampling, and experience with real data from the world around us and from experiments. Statistical thinking will be stressed. This course is primarily for teachers and ordinarily will not apply towards the Master of Arts in Mathematics. Open to graduate students only. Prerequisite: Advisor approval. 3 hours

STAT 6350 Spatial Statistics Spatial statistical techniques are used to model complex phenomena in geosciences, climate and weather sciences, environmental and social sciences, economics, image analysis, etc. Statistical analyses of geostatistical data, lattice data, and point patterns will be discussed. Topics include variogram, kriging, Markov random fields, intensity functions, Boolean models, analysis of remote sensing data, hierarchical models, and space-time models. For computation WINBUGS, R, and Matlab software will be used. Open to graduate students only. Prerequisites: STAT 6600 and STAT 6620 with grades of “B” or better, or instructor approval. 3 hours

STAT 6450 Applied Bayesian Statistics Bayesian statistical techniques play a pivotal role in applied research today. Topics include various loss functions and optimal estimators, Bayes factor, hierarchical models, Markov Chain Monte Carlo simulation, robust Bayesian analysis, and non-parametric and semi-parametric Bayesian methods. Several interesting applications will be discussed from climate and weather sciences, medical and biological sciences, and machine learning and pattern recognition. For computation WINBUGS, R, and Matlab softwares will be used. Open to graduate students only. Prerequisite: STAT 6600 with a grade of “B” or better, or instructor approval. 3 hours

STAT 6460 Large Sample Theory Asymptotic theory is to provide simple approximations to quantities or distributions which are very difficult or impossible to obtain exactly. This course covers four kinds of convergence - almost sure convergence, convergence in probability, L^P convergence, and convergence in distributions. Applications of the theory will be discussed in the area of maximum likelihood estimation, confidence intervals, statistical hypothesis tests and power calculation, and nonparametric estimation. Open to graduate students only. Prerequisite: STAT 6600 with a grade of “B” or better. 3 hours

STAT 6500 Statistical Theory I A first course in statistical theory. Topics include random variables, distributions of statistics, limiting distributions, and elementary theory of estimation and hypothesis testing. Open to graduate students only. Prerequisites: MATH 2300 and STAT 3640, with a grade of "C" or better in all prerequisites. 4 hours

STAT 6600 Statistical Theory II An advanced course in statistical theory. Topics include measures of quality of estimators, theories of estimation, functions of sufficient statistics, confidence intervals, theories of testing, likelihood ratio tests, and selected topics in statistics. Open to graduate students only. Prerequisite: STAT 5620 4 hours

STAT 6610 Multivariate Statistical Analysis A theoretical treatment of multivariate statistical problems and techniques. Topics include: multivariate normal distribution; quadratic forms; multiple and partial correlation; sample correlation coefficients; Hotelling's statistic; Wishart distribution; applications to tests of the mean vector and covariance matrix; principal components; factor analysis; cluster analysis; discriminant analysis. Open to graduate students only. Prerequisite: STAT 6630 3 hours

STAT 6620 Applied Linear Models An advanced course in applied statistics. Linear models will be used to treat a wide range of regression and analysis of variance methods. Topics include: matrix review; multiple, curvilinear, nonlinear, and stepwise regression; correlation; residual analysis; model building; use of the regression computer packages at WMU; use of indicator variables for analysis of variance and covariance models. Open to graduate students only. Prerequisites: MATH 2300 and STAT 3640. 3 hours

STAT 6630 Linear Models A theoretical study of the general linear model including random vectors, quadratic forms, multivariate normal distributions, least squares estimation, hypothesis testing for full and reduced models, generalized inverses. Open to upperclass and graduate students. Prerequisites: STAT 6600 and STAT 6620. 3 hours

STAT 6640 Design of Experiments I An applied course in the design and analysis of experiments. Topics include: general considerations in the design of an experiment; standard designs such as Latin square, balanced incomplete block, split plot, and nested; pooling of experiments; multiple comparison techniques; orthogonal contrasts and polynomials; factorial arrangement of treatments; fixed, random, and mixed models; confounded designs; fractional replication. Open to graduate students only. Prerequisite: STAT 6620. 3 hours

STAT 6650 Advanced Statistical Inference Theories of statistical inference are discussed. Topics include (but not limited to) asymptotic theory, sufficiency, maximum likelihood methodology, Bayesian procedures, robust procedures, nonparametriecs, resampling, and asymptotic efficiency. Open to graduate students only. Prerequisite: STAT 6600 3 hours

STAT 6660 Advanced Nonparametric Statistical Methods A theoretical study of nonparametric statistics and robust statistical procedures. Topics may include: order statistics, empirical cdfs, R-estimates, rank statistics, optimality considerations, asymptotic distribution theory. Open to graduate students only. Prerequisite: STAT 6600. 3 hours

STAT 6670 Introduction to Random Processes This course is a treatment of random sequences and Markov processes. Discrete and continuous Markov processes; transition and rate matrices; Chapman-Kolmogrov systems; transient and limiting behavior; examples and illustrations; random walks, birth-and-death processes, etc.; stationary processes. Open to graduate students only. Prerequisite: STAT 5600 or equivalent. 3 hours

STAT 6680 Categorical Data Analysis Statistical methods for discrete multivariate data and contingency tables will be discussed. The log linear model for two way and higher dimensional tables will be emphasized. Subtopics include: maximum likelihood estimates, iterative proportional fitting, model selection, goodness of fit, logistic models, incomplete tables, symmetry, marginal homogeneity, and conditional independence models. Prerequisites: STAT 6600 and STAT 6620. 3 hours

STAT 6690 Studies in Probability and Statistics The subject matter for this course is variable. Advanced work is considered and organized around topics not usually considered in the other courses. May be repeated for credit. Open to graduate students only. 3 hours

STAT 6800 SAS Programming Students will use SAS to manipulate data, create effective tables and plots, and write programs for nonstandard problems. Open to graduate students only. Prerequisite: STAT 6620 or instructor approval. 3 hours

STAT 6810 Survival Data Analysis This course consists primarily of biostatistical methods used in pharmaceutical and medical research with particular application to cancer studies and toxological animal studies. Some attention is given to related failure-time methods used in industry to test product reliability. Theoretical development of some of these methods is discussed. Extensive data analyses are done using R statistical package. Topics include: censoring, Kaplan-Meier survival curves, life tables, two-sample non-parametric procedures for comparison of survival curves (Gehan, Cox-Mantel, log rank and generalized Wilcoxian), relative risk, odds ratio, the Mantel-Haenszel procedure, parametric failure-time models (exponential, gamma, Weibull, and lognormal),

logistic regression, and Cox's proportional hazards model. Prerequisites: STAT 6600 and STAT 6620. Open to graduate students only. 3 hours

STAT 6830 Robust Statistical Analysis Robust statistical procedures for inference in location, linear and multivariate models are presented. This will include broad classes of robust estimates, including R-, M- and L-estimates of both regular and bounded influence types. Concepts such as breakdown point, influence function, and asymptotic theory are used to obtain properties of these procedures. Computational aspects of these estimates are discussed along with small sample properties and applications of these procedures. Open to graduate students only. Prerequisites: STAT 6600 and STAT 6620. 3 hours

STAT 6860 Regulatory Environmental Statistics This is a course in regulatory environmental statistics, with a primary focus on statistical methods recommended by the United States Environmental Protection Agency (EPA) and by various State environmental regulatory agencies. Particular emphasis is devoted to the normal, lognormal, and non-parametric probability models for fitting environmental data, which are methods recommended in several EPA guidance documents. Descriptive, graphical and model adequacy methods include: box-plots, normal probability plots, q-q plots, outlier tests, and goodness-of-fit tests. Statistical inference methods include prediction intervals, tolerance intervals, analysis of variance, and upper and lower confidence intervals for both parametric and non-parametric models. The use of correlation analyses, trend analyses, control charts, and multiple regression analyses may be illustrated. Emphasis will be devoted to the proper analysis of censored or non-detect environmental data. The SAS, SPULS, or other statistical packages may be utilized. Emphasis may be placed on report-writing and oral presentations with real data collected in actual regulatory environmental contexts. Open to graduate students only. Prerequisites: STAT 5620 or STAT 6620 or instructor approval. 3 hours

STAT 6880 Statistical Research Tools Topics for this class will be chosen from the areas of computational statistics and statistical computing using the R programming language. Specific topics include random variable generation, optimization and root finding. Monte Carlo methods and statistical graphics. The typesetting language LaTeX will be used to write up results and to produce professional presentations. Open to graduate students only. Prerequisites: STAT 6600 and STAT 6640 with grades of “B” or better. 3 hours

STAT 6910 Practicum in Statistical Consulting Provides graduate students with the opportunity to participate as statistical consultants on real projects. The student consultants are involved with all aspects of the statistical consulting experience from data manipulation and analysis to the design of the statistical aspects of the project and from interaction and effective communication with a client to the production of a final written report on the statistical aspects of the project. May be repeated for credit. Open to graduate students only. Prerequisites: STAT 6620 (or concurrent enrollment) and at least one of STAT 5630, STAT 5660, STAT 5670, or STAT 5680. 1 hour

STAT 6970 Data Science Masters Project Students will work on a special project in a data science area. A technical report on the results of each student's project must be approved by the course instructor and published as a departmental technical report. This work is assumed to require two semesters. Open to graduate students only. Data Science master students may take either STAT 6970 or CS 6970 for credit towards their MS in Data Science degree. Open to graduate students only. Prerequisites: Graduate level competency in data science and the subject areas of the project. Approval of the instructor is required. 2 hours

STAT 6980 Statistical Consulting Internship The statistical consulting internship program provides a graduate student with the opportunity to work as a member of the staff in the Statistical Computation Lab. The student gains considerable experience in all aspects of the consulting experience and the operation of a consulting center. May be repeated for credit. Open to graduate students only. Prerequisite: Advisor approval. 2 to 6 hours

STAT 6990 Reading and Research May be repeated for credit. Open to graduate students only. Prerequisite: Department approval. 1 to 6 hours

STAT 7120 Professional Field Experience Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisite: Department approval. 2 to 12 hours

STAT 7250 Doctoral Research Seminar Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisite: Department approval. 2 to 6 hours

STAT 7300 Doctoral Dissertation Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisite: Department and Graduate College approval. 1 to 15 hours

STAT 7350 Graduate Research Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisite: Department approval. 2 to 10 hours

World Languages and Literatures

ARAB 5020 Arabic for Graduate Study Arabic instruction for graduate students enrolled in a degree program who need knowledge of Arabic for their field of study. Students will sit in appropriate level course for their learning. May be repeated for credit. May not be taken by undergraduate students in any field.
Prerequisites: Approval of department of student's graduate program and approval of Department of World Languages and Literatures. 3 to 4 hours

ARAB 5030 Arabic – English Translation Practicum This is a practical course to teach the skills for translating texts from Arabic into English. The objective of this course is to develop further language proficiency and to introduce students to the nuts and bolts of translation. Students will produce English translations from different sorts of Arabic texts, such as news, essays, documents, poetry, and short fiction. May be repeated for credit. Open to upperclass and graduate students. Prerequisite: ARAB 2010 or instructor approval. 1 to 4 hours

ARAB 5200 Topics in Arabic Linguistics and Language Science The advanced study of a language or a group of languages from a scientific point of view, such as the function and status of languages in society, the comparative history of different language families or the manipulation of language for pragmatic needs across cultures. May be offered as ARAB/CHIN/FREN/GER/ GREK/ITAL/JPNS/LAT/RUSS 5200. May be repeated for credit. Open to upper-class and graduate students. 3 hours

ARAB 5500 Independent Study in Arabic Directed individual study of a specific topic in Arabic literature or linguistics. May be repeated for credit. Open to upperclass and graduate students. Prerequisites: ARAB 1010 and departmental approval. 1 to 3 hours

CHIN 5020 Chinese for Graduate Study Chinese instruction for graduate students enrolled in a degree program who need knowledge of Chinese for their field of study. Students will sit in appropriate level course for their learning. May be repeated for credit. May not be taken by undergraduate students in any field.
Prerequisites: Approval of department of student's graduate program and approval of Department of World Languages and Literatures. 3 to 4 hours

CHIN 5030 Chinese – English Translation Practicum This is a practical course to teach the skills for translating texts from Chinese into English. The objective of this course is to develop further language proficiency and to introduce students to the nuts and bolts of translation. Students will produce English translations from different sorts of Chinese texts, such as news, essays, documents, poetry, and short fiction. May be repeated for credit. Open to upperclass and graduate students. Prerequisite: CHIN 2010 or instructor approval. 1 to 4 hours

CHIN 5200 Topics in Chinese Linguistics and Language Science The advanced study of a language or a group of languages from a scientific point of view, such as the function and status of languages in society, the

comparative history of different language families or the manipulation of language for pragmatic needs across cultures. May be offered as ARAB/CHIN/FREN/GER/ GREK/ITAL/JPNS/LAT/RUSS 5200. May be repeated for credit. Open to upperclass and graduate students. 3 hours

CHIN 5500 Independent Study in Chinese Directed individual study of a specific topic in Chinese language, literature, or culture. May be repeated for credit to a maximum of three hours. Open to upperclass and graduate students. Prerequisites: Completion of four courses in Chinese or equivalent; minimum grade point average of 3.0 in Chinese; departmental approval required. 1 to 3 hours

FREN 5000 Elementary French for Reading Proficiency Intensive grammar and elementary reading for translation and research purposes. The course is primarily for the graduate who has had little or no study in the language. However, undergraduates who desire a thorough reading knowledge may also apply. No oral work. This course does not count toward a major or minor in French. Open to upperclass and graduate students.
Prerequisite: Undergraduates must secure permission of department. 4 hours

FREN 5010 Intermediate French for Reading Proficiency Readings in the language at intermediate and advanced levels for translation and research purposes. Special attention will be given to students' major fields. Completion of FREN 5010 with a minimum of “B” constitutes graduate proficiency in the language. This course does not count toward a major or minor in French. Open to upperclass and graduate students.
Prerequisite: Undergraduates must secure permission of the Department. 4 hours

FREN 5020 French for Graduate Study French instruction for graduate students enrolled in a degree program who need knowledge of French for their field of study. Students will sit in appropriate level course for their learning. May be repeated for credit. May not be taken by undergraduate students in any field.
Prerequisites: Approval of department of student’s graduate program and approval of Department of World Languages and Literatures. 3 to 4 hours

FREN 5030 French – English Translation Practicum This is a practical course to teach the skills for translating texts from French into English. The objective of this course is to develop further language proficiency and to introduce students to the nuts and bolts of translation. Students will produce English translations from different sorts of French texts, such as news, essays, documents, poetry, and short fiction. May be repeated for credit. Open to upperclass and graduate students. Prerequisite: FREN 3160 with a minimum grade of "C", or instructor approval. 1 to 4 hours

FREN 5100 Topics in French and Francophone Studies An intensive study of selected aspects of French and Francophone culture, literature, and film. Course varies according to topic. Representative topics might include Women in French Society, The French Tradition in Quebec, Francophone Cinema, Love and War in Modern French Fiction, Writing and Revolution in the French Caribbean. Taught in French. May be repeated for credit with a different topic. Open to upperclass and graduate students. Prerequisites: FREN 3160 and either (FREN 3220 or FREN 3230 or FREN 3250 or FREN 3260) with a minimum grade of "C", or approval of instructor. 3 hours

FREN 5200 Topics in French Linguistics and Language Science The advanced study of a language or a group of languages from a scientific point of view, such as the function and status of languages in society, the comparative history of different language families or the manipulation of language for pragmatic needs across cultures. May be offered as ARAB/CHIN/FREN/GER/ GREK/ITAL/JPNS/LAT/RUSS 5200. May be repeated for credit. Open to upper-class and graduate students. Prerequisites: FREN 3160 and one other 3000-level course, or equivalent. A minimum grade of "C" is required in all prerequisites. 3 hours

FREN 5400 Old French Language and Literature An introduction to Old French, with an emphasis on the development of reading ability. Various literary works will be studied in Old French and in translation. Coursework includes an individualized translation project. Open to upperclass and graduate students. Prerequisite: FREN 3160 with a minimum grade of "C", or instructor approval. Working knowledge of Latin helpful. 3 hours

FREN 5500 Independent Study in French Directed, individual study of a specific topic in a French literary or linguistic area. Repeatable for credit. Open to upperclass and graduate students. Prerequisites: One 5000-level course in the major; a minimum grade point average of 3.0 in the major; department approval required. 1 to 3 hours

GER 5000 Elementary German for Reading Proficiency Intensive grammar and elementary reading for translation and research purposes. The course is primarily for the graduate student who has had little or no study in the language. However, undergraduates who desire a thorough reading knowledge may also apply. No oral work. This course does not count toward a major or minor in German. Open to upperclass and graduate students. Prerequisite: Undergraduates must secure permission of department. 4 hours

GER 5010 Intermediate German for Reading Proficiency Readings in the language at intermediate and advanced levels for translation and research purposes. Special attention will be given to students' major fields. Completion of GER 5010 with a minimum of "B" constitutes graduate proficiency in the language. This course does not count toward a major or minor in German. Open to upperclass and graduate students. Prerequisite: Undergraduates must secure permission of department. 4 hours

GER 5020 German for Graduate Study German instruction for graduate students enrolled in a degree program who need knowledge of German for their field of study. Students will sit in appropriate level course for their learning. May be repeated for credit. May not be taken by undergraduate students in any field. Prerequisites: Approval of department of student's graduate program and approval of Department of World Languages and Literatures. 3 to 4 hours

GER 5280 Survey of German Literature A comprehensive study of German literature from its beginning through Romanticism. Open to upperclass and graduate students. Prerequisites: GER 3160, GER 3170, GER 3220 and GER 3250; or instructor approval. 3 hours

GER 5290 Survey of German Literature A comprehensive study of German literature from German Realism to the present. Open to upperclass and graduate students. Prerequisites: GER 3160, GER 3170, GER 3220 and GER 3250; or instructor approval. 3 hours

GER 5500 Independent Study in German Directed individual study of a specific topic in German literary or linguistic area. May be repeated for credit. Open to upperclass and graduate students. Prerequisites: One 5000-level course in the major; a minimum grade point average of 3.0 in the major; department approval required. 1 to 3 hours

GER 5600 Studies in German Literature Topic varies according to genre, author, or period and will be announced. Each of these courses carries separate credit, although all are listed under 5600. Thus, a student may take any or all of the offerings at various times. Representative topics which may be treated in this area include: The Novelle - Survey of the development with representative selections; Lyric Poetry - Survey of the development with significant selections; 19th Century Drama to -Primarily Kleist, Grillparzer, Hebbel, and Hauptmann; 20th Century Drama - Representative selections. May be repeated for credit. Open to upperclass and graduate students. Prerequisites: GER 3160, GER 3170, GER 3220 and GER 3250; or instructor approval. 3 hours

GREK 5020 Greek for Graduate Study Classical Greek instruction for graduate students enrolled in a degree program who need knowledge of Greek for their field of study. Students will sit in appropriate level course for their learning. May be repeated for credit. May not be taken by undergraduate students in any field. Prerequisites: Approval of department of student's graduate program and approval of Department of World Languages and Literatures. 3 to 4 hours

GREK 5030 Greek – English Translation Practicum This is a practical course to teach the skills for translating texts from classical Greek into English. The objective of this course is to develop further language proficiency and to introduce students to the nuts and bolts of translation. Students will produce English translations from different sorts of classical Greek texts, such as essays, poetry, documents, and short fiction. May be repeated

for credit. Open to upperclass and graduate students. Prerequisite: GREK 1010 or instructor approval. 1 to 4 hours

GREK 5500 Independent Study in Greek Directed, individual study of a specific topic in ancient Greek Literature. May be repeated for credit. Open to upperclass and graduate students.
Prerequisites: GREK 1010 and departmental approval. 1 to 3 hours

ITAL 5020 Italian for Graduate Study Italian instruction for graduate students enrolled in a degree program who need knowledge of Italian for their field of study. Students will sit in appropriate level course for their learning. May be repeated for credit. May not be taken by undergraduate students in any field.
Prerequisites: Approval of department of student's graduate program and approval of Department of World Languages and Literatures. 3 to 4 hours

JPNS 5020 Japanese for Graduate Study Japanese instruction for graduate students enrolled in a degree program who need knowledge of Japanese for their field of study. Students will sit in appropriate level course for their learning. May be repeated for credit. May not be taken by undergraduates in any field.
Prerequisites: Approval of department of student's graduate program and approval of Department of World Languages and Literatures. 3 to 4 hours

JPNS 5030 Japanese – English Translation Practicum This is a practical course to teach the skills for translating texts from Japanese into English. The objective of this course is to develop further language proficiency and to introduce students to the nuts and bolts of translation. Students will produce English translations from different sorts of Japanese texts, such as news, essays, documents, poetry, and short fiction. May be repeated for credit. Open to upperclass and graduate students. Prerequisite: JPNS 2010 or instructor approval. 1 to 4 hours

JPNS 5100 Studies in Japanese Culture An intensive study of selected aspects of Japanese culture. Course varies according to topic and may be repeated for credit with permission of advisor. Representative topics include Women in Japanese Society, the Japanese Tradition to Specific Cities (e.g. Edo/Tokyo, Kyoto, Okinawa), Japanese New Cinema, and Pop Culture in Japan. Open to upperclass and graduate students.
Prerequisite: JPNS 2750 or instructor approval. 3 hours

JPNS 5200 Topics in Japanese Linguistics and Language Science The advanced study of a language or a group of languages from a scientific point of view, such as the function and status of languages in society, the comparative history of different language families or the manipulation of language for pragmatic needs across cultures. May be offered as ARAB/CHIN/FREN/GER/ GREK/ITAL/JPNS/LAT/RUSS 5200. May be repeated for credit. Open to upper-class and graduate students. 3 hours

JPNS 5500 Independent Study in Japanese Directed individual study of a specific topic in Japanese language, literature, or culture. Repeatable for credit. Open to upperclass and graduate students.
Prerequisites: Completion of four courses in Japanese or equivalent; minimum grade point average of 3.0 in Japanese; departmental approval required. 1 to 3 hours

JPNS 5600 Advanced Literary Readings in Japanese Topics will vary from semester to semester. Selections will be made from Japanese classics and contemporary fiction, to include Kawabata, Akutagawa, Murakami and Yoshimoto among others. May be repeated for credit under different topics with advisor approval. Open to upperclass and graduate students. Prerequisites: JPNS 3250 and JPNS 3260, or instructor approval. 3 hours

LANG 5250 The Practice and Theory of Literary Translation The course examines the essential role of translation in our world of increasing globalization. Students must translate one extended text of their own choosing from any language into English. Meanwhile, readings and discussion will focus on the nuts and bolts of translation, plus the relationship between translation, literary canonization, nationalism, post-colonialism, and national representation. May be repeated for credit. Open to upperclass and graduate students. Prerequisites: One 3000-level foreign language course or instructor approval. 3 hours

LANG 5500 Independent Study in Classics Directed, individual study of a specific topic related to Classical languages, literature, and/or culture. May be repeated for credit. Open to upperclass and graduate students. Prerequisite: Completion of four courses or equivalent in classics; minimum grade point average of 3.0 in the major; departmental approval required. 1 to 3 hours

LANG 5580 Second Language Acquisition and Teaching Instruction (in French, German, Spanish, or other language) Required of modern language teaching majors and minors. There will be a dual focus: a theoretical focus on second language acquisition and the ways by which non-native speakers come to acquire a second language; and a practical focus on methods of teaching in a proficiency-oriented program, as well as on the teaching and learning of culture and the pedagogical use of technologies. Students must complete this course before completing directed teaching. May be repeated for credit. Open to upperclass and graduate students. Prerequisites: Minimum of four courses, including a language at the 3160 and 3170 level, or equivalent, or instructor approval. 3 hours

LANG 5800 Foreign Language for Special Purposes The study of or practice in a specialized area in the field of language and culture such as court interpreting, medical or engineering terminology, or public school administration. The content of this course may vary from semester to semester. May be repeated for credit, provided the subject matter differs. Open to upperclass and graduate students. Prerequisite: Completion of four courses in area of specialization; departmental approval required. 1 to 12 hours

LAT 5020 Latin for Graduate Study Latin instruction for graduate students enrolled in a degree program who need knowledge of Latin for their field of study. Students will sit in appropriate level course for their learning. May be repeated for credit. May not be taken by undergraduate students in any field. Prerequisites: Approval of department of student's graduate program and approval of Department of World Languages and Literatures. 3 to 4 hours

LAT 5030 Latin – English Translation Practicum This is a practical course to teach the skills for translating texts from Latin into English. The objective of this course is to develop further language proficiency and to introduce students to the nuts and bolts of translation. Students will produce English translations from different sorts of Latin texts, such as essays, poetry, documents, and short fiction. May be repeated for credit. Open to upperclass and graduate students. Prerequisite: LAT 2010 or instructor approval. 1 to 4 hours

LAT 5500 Independent Study in Latin Directed, individual study of a specific topic in Latin literature or linguistics. May be repeated for credit. Open to upperclass and graduate students. Prerequisite: Completion of four courses in Latin; minimum grade point average of 3.0 in the major; departmental approval required. 1 to 3 hours

LAT 5570 Teaching of Latin The purpose of the course is to acquaint the prospective teacher with theory and practice appropriate to the teaching of the Latin language, literature, and culture in its classical context and as it relates to the modern world. Required of Latin teaching majors and minors. Open to upperclass and graduate students. Prerequisites: Completion of four courses, or equivalent, in Latin; or instructor approval. 3 hours

LAT 5600 Medieval Latin A survey of the development of Medieval Latin from late antiquity to the Renaissance. Specimens will include major literary and documentary sources of the medieval centuries including new genres such as hagiography, monastic rules, hymns, and homilies. Open to upperclass and graduate students. Prerequisite: One 2000-level Latin course or LAT 3240 or instructor approval. 4 hours

RUSS 5020 Russian for Graduate Study Russian instruction for graduate students enrolled in a degree program who need knowledge of Russian for their field of study. Students will sit in appropriate level course for their learning. May be repeated for credit. May not be taken by undergraduate students in any field. Prerequisites: Approval of department of student's graduate program and approval of Department of World Languages and Literatures. 3 to 4 hours

RUSS 5030 Russian – English Translation Practicum This is a practical course to teach the skills for translating texts from Russian into English. The objective of this course is to develop further language

proficiency and to introduce students to the nuts and bolts of translation. Students will produce English translations from different sorts of Russian texts, such as news, essays, documents, poetry, and short fiction. May be repeated for credit. Open to upperclass and graduate students. Prerequisite: RUSS 2010 or instructor approval.
1 to 4 hours

RUSS 5500 Independent Study in Russian Directed individual study of a specific topic in Russian language, literature, or culture. May be repeated for credit. Open to upperclass and graduate students. Prerequisites: Completion of four courses in Russian, or equivalent; minimum grade point average of 3.0 in Russian; department approval required. 1 to 3 hours

College of Aviation

Aviation Sciences

AVS 5100 Safety Management Systems in Aviation Concepts and methods of measuring and managing human safety performance in a high risk environment are defined and explored. Students will gain knowledge and learn practical applications to identify hazards and manage risk in complex flight and maintenance operating environments. Topics include history of aviation safety, quality assessment and management, process-systems analysis, principles of behavior-based safety, quantitative analysis methods, and implementation of a safety management system. Open to upperclass and graduate students. Prerequisites: PSY 1000, STAT 2160 and Senior standing. 3 hours

AVS 6270 Airline Supply Chain Management Supply Chain characteristics of the global air passenger and air freight markets. Focus will be on airline service creation and analysis. Relationship management and airline service quality will be discussed. Open to graduate students only. Restricted to students in the MBA or MSA program or approval of the MBA advisor. 3 hours

AVS 6290 Global Aviation Management and Policies International aviation regulatory and trade organizations are discussed and global structural and functional frameworks are presented. Different types of airline and airport operations are analyzed and evaluated. Specific managerial styles are assessed in the context of the ever changing global aviation marketplace. Open to graduate students only. Restricted to students in the MBA or MSA program or approval of the MBA advisor. 3 hours

Haworth College of Business

Accountancy

ACTY 5980 Readings in Accounting Directed individual study of topics not covered in other departmental courses. Open to upperclass and graduate students. Prerequisite: Written approval of MSA Advisor. 1 to 4 hours

ACTY 6010 Financial Accountancy This course is designed for graduate students who have no academic background in accounting. It is a study of the fundamental concepts and applications of financial accounting and managerial accounting. The course emphasizes the use of accounting information and the analysis of accounting statements rather than the recording of transactions and the preparation of accounting statements. Students may not receive credit for both ACTY 6010 and equivalent courses. MSA students may not enroll in ACTY 6010. Open to graduate students only. Restricted to Masters in Business Administration. Prerequisite: Admission to the MBA program or departmental approval. 3 hours

ACTY 6100 Financial Accounting and Reporting This course examines the pronouncements of authoritative, regulatory organizations, including the American Institute of Certified Public Accountants, the Securities and Exchange Commission, the International Accounting Standards Board, and the Financial Accounting Standards Board. The underlying logic (or lack thereof) behind these pronouncements is investigated. These pronouncements are studies in their broad concepts, including asset and liability recognition and measurement issues, revenue recognition alternatives, the timing of expense matching, and funds flow reporting. Practical, "real world" cases emphasizing these concepts form a major portion of the course. The impact of financial reporting on capital markets, from a user perspective, is also discussed. Open to graduate students only. Enrollment in HCOB graduate business courses requires admission to the MBA or MSA program or the approval of the Director of Graduate Business Programs. Prerequisite: ACTY 3110 with a grade of “C” or better, or approval of the Chair of the Department or the Director of the MBA Program. 3 hours

ACTY 6110 Managerial Accounting This course emphasizes the use of accounting information for planning, control, and decision making. The managerial accounting topics covered include job order costing, cost allocation, service costing, activity-based costing, standard costing, transfer pricing, and global accounting issues. The course is not available for credit to students who have completed ACTY 3220 or its equivalent; MSA students are not permitted to enroll in ACTY 6110. Open to graduate students only. Enrollment in HCOB graduate business courses requires admission to the MBA program or the approval of the Director of Graduate Business Programs. Prerequisite: ACTY 6010 or (ACTY 2100 and ACTY 2110 with a grade of “C” or better) or equivalent. 3 hours

ACTY 6130 Advanced Accounting Information Systems This course will explore accounting information systems and their relationship with accounting functions. The objective of the course is to provide students with a theoretical framework for accounting information systems, information technologies and applications used by accounting information systems, internal control systems, auditing accounting information systems and empirical research related to these areas. Detailed focus is paid to transaction procedures, transaction cycles, internal controls and database structures. Examples of topics covered in class are: software development lifecycle, database control concepts and procedures, auditing accounting information systems, accounting information systems design, and e-communication and information system networks. Examples of assignments and projects include: advanced accounting information systems modeling, advanced form, query, and report design, and data analysis. Examples of software to be used in the course are: SAP, Access, i-Metrix and Excel. Open to graduate students only. Enrollment in HCoB graduate business courses requires admission to the MBA or MSA program or the approval of the Director of Graduate Business Programs. Prerequisite: ACTY 3130 with a grade of "C" or better. 3 hours

ACTY 6170 Attestation and Assurance Services A critical study and examination of the theory of auditing and auditing practices, including the demand and supply for auditing services and current issues facing auditors in the United States and elsewhere. Open to graduate students only. Enrollment in HCOB graduate business courses requires admission to the MBA or MSA program or the approval of the Director of Graduate Business Programs. Prerequisite: ACTY 4160 with a grade of “C” or better. 3 hours

ACTY 6210 International Accounting This course examines international dimensions of accounting and the uses of accounting information for decision making in a multinational environment. Major emphasis is placed upon accounting and managerial issues of multinational corporations such as currency translation, financial reporting and disclosure, international taxation, transfer pricing, and current issues and developments. Open to graduate students only. Enrollment in HCOB graduate business courses requires admission to the MBA or MSA program or the approval of the Director of Graduate Business Programs. Prerequisite: A minimum grade of "C" or better in ACTY 6010 or ACTY 2110 or equivalent course. 3 hours

ACTY 6220 Seminar in Management Accounting This course examines a variety of advanced cost management concepts and techniques for manufacturing and service organizations. The topics may include advanced cost-volume-profit analyses, activity-based costing and activity-based management, strategic cost management, total quality management, re-engineering and process improvement, transfer pricing, and other cost management issues in a global environment. Open to graduate students only. Enrollment in HCOB graduate business courses requires admission to the MBA or MSA program or the approval of the Director of Graduate Business Programs. Prerequisite: ACTY 3220 or ACTY 6110; with a grade of "C" or better in any prerequisite. 3 hours

ACTY 6240 Business Tax Planning An advanced course in business taxation involving the identification and analysis of tax problems. Income tax strategy is studied involving the timing of income, types of business organizations, and the various alternative tax treatments. Case studies will be used, and research in taxation will be emphasized. Open to graduate students only. Enrollment in HCOB graduate business courses requires admission to the MBA or MSA program or the approval of the Director of Graduate Business Programs. Prerequisite: ACTY 3240 with a grade of "C" or better. 3 hours

ACTY 6270 Accounting Fraud This course identifies various aspects and elements of fraud as it occurs in business. Three major categories of fraud will be examined: asset misappropriation, financial statement misstatement, and corruption. The course begins with an introduction to the problem, and then analyzes how fraud can be prevented. The course covers the various methodologies for detection and investigation of fraud as well as resolution attributes and related matters. Open to graduate students only. Enrollment in HCOB graduate business courses requires admission to the MBA or MSA program or the approval of the Director of Graduate Business Programs. Prerequisite: ACTY 4160 with a grade of "C" or better. 3 hours

ACTY 6280 Financial Statement Analysis The course examines the concepts and techniques of financial statement analysis from the viewpoints of investors, creditors, and management. Students will have opportunities to analyze financial statements and value a firm using several approaches. Through a mixture of lecture/discussion, case analyses and term projects, students should be able to develop the following skills: 1) understand the usefulness and limitations of financial statements in evaluating a company's performance for credit, investment, and other purposes; 2) learn and appreciate the linkages among strategic business analysis, accounting analysis and financial analysis; 3) use accounting numbers to forecast future earnings and cash flows and to estimate a firm's value; 4) learn the techniques for analyzing foreign financial statements prepared with the IFRS (International Financial Reporting Standards) and convert them into U.S. GAAP (Generally Acceptable Accounting Standards) statements and ratios. Requires admission to the MBA or MSA program. Open to graduate students only. Prerequisites: (ACTY 6100 and ACTY 6110) or (ACTY 3100 or ACTY 3220). 3 hours

ACTY 6340 Supply Chain Cost Analysis This course examines the integrated/cross-functional behavior of product and process costs across the supply chain. The primary focus of the course is the application of data-driven critical analysis and decision making tools to provide economic justification for the development and management of supply chains. Topics include: cost accounting methods, product and service should cost models (cost breakdowns), approaches to target costing, total landed cost analysis, correlation and regression costing/pricing models, management of risk and relationship cost, lease/buy analysis, and currency exchange. Open to graduate students only. 3 hours

ACTY 6430 Selected Topics in Accountancy II The advanced study of selected topics in accountancy. Course varies according to topic. Requires admission to the MBA or MSA program. Open to graduate students only. 3 hours

ACTY 6440 Selected Topics in Accountancy III The advanced study of selected topics in accountancy. Course varies according to topic. Requires admission to the MBA or MSA program. Open to graduate students only. 3 hours

ACTY 7100 Independent Research Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Restricted to Master in Accountancy. Prerequisite: Application and department approval. 2 to 6 hours

ACTY 7120 Professional Field Experience Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Restricted to Master in Accountancy. Prerequisite: Application and department approval. 2 to 12 hours

Business communication

BCM 6050 Academic Communication for Business This course will help students learn the skills they need for success in a graduate-level class. Students will improve their writing and research skills, improve their presentation skills (both for individual and group presentations), improve their ability to contribute to classroom discussions, and improve their ability to take lecture notes. Open to graduate students only. Restricted to majors/minors across multiple departments. Please see advisor for specific program restrictions. Prerequisites: Admission to the MBA or MSA program or department approval. 3 hours

Business Information Systems

CIS 5550 Topics in Computer Information Systems Special topics appropriate to business applications such as data base management systems, structured concepts, networking, programming documentation and efficiency, planning, organizing and directing management information systems. May be repeated for credit. Open to upperclass and graduate students. Restricted to master's in Business Administration. Prerequisite: Instructor approval. 3 hours

CIS 5650 Big Data Analytics This course introduces students to the concept of big data, Hadoop (the industry standard for big data), and its ecosystems (i.e., the supporting software that enhances the core Hadoop system or bridge the core system with other existing systems in use). The course will focus on how to leverage the big data analytics to make better business decisions. It teaches students the skills to manipulate and analyze big volumes of data, which usually is not easily possible with traditional systems. There will be a lot of hands-on exercises in class. Open to upperclass and graduate students. Prerequisite: CIS 4610 or instructor approval. 3 hours

CIS 5710 Information Security Fundamentals This course examines information security fundamentals needed for a basic understanding of the Information Security discipline. The course covers basic attacks and vulnerabilities against an organization as well as their mitigation, managerial and legal requirements for organizations, professional ethics, and security policy formation and implementation. This course will help students understand identity and access management, asset security, and risk management. Finally, students will learn the importance of assessing and testing security frameworks to ensure robust incident response, disaster recovery, and business continuity plans. Case projects and scenarios are used throughout the course to illustrate, test, and understand these topics. Open to upperclass and graduate students. Prerequisite: Admission to the Graduate College or senior standing. 3 hours

CIS 6000 Seminar in Computer Information Systems Intensive problem solving in the area of computer information systems. May be repeated for credit. Open to graduate students only. Prerequisite: Admission to the MBA or MSA program or the approval of the MBA advisor. 3 to 4 hours

CIS 6300 Business Data Management The focus of this course is Business Data Management. Students learn relational design, management, administration, implementation, and data migration

(ETL). Students are introduced to the Big Data concept and Non-relational database. Database software such as Microsoft SQL Server and related Business Intelligence and development tools may be used. Open to graduate students only. Prerequisite: Admission to the MBA or MSA program or the approval of the MBA advisor. 3 hours

CIS 6400 Business Analytics This course is designed to give students comprehensive analytical skills. The need for historic and predictive analytics in the health care industry will be examined. Health care data from multiple sources will be integrated, manipulated, aggregated, and filtered. Students will experience dashboard software, and use both predictive models and automated processes to advance data examination and interpretation. Open to graduate students only. Prerequisite: Admission to the MBA or MSA program or the approval of the MBA advisor. 3 hours

CIS 6620 Business Project Management This course examines the concepts, techniques, methodologies and tools for an effective management of business and other types of projects. Students will learn the skills to define project scope, create project plans, and manage key aspects of projects around the phases of project life cycle. The course involves lectures, discussions, small-group work and other exercises. Open to graduate students only. Prerequisite: Admission to the MBA or MSA program or the approval of the MBA advisor. 3 hours

CIS 6640 Predictive Analytics and Data Mining This course provides students with an understanding of analytical techniques from business analytics, business intelligence and data mining to make practical business predictions and other data-driven decisions. Students will learn a variety of techniques to perform predictive and other forms of analytics, including data preparation, classification, prediction, clustering, regression, association, cross validation, performance evaluation, anomaly detection, etc. Practical real life data (numeric and text) will be analyzed. Open to graduate students only. Prerequisite: Admission to the MBA or MSA program or the approval of the Director, Graduate Advising and Admissions. 3 hours

CIS 6660 Enterprise Information Security Management The focus of this course is to explore the major issues in Enterprise Information Security Management. Prospective topics include introduction to information security management, security and contingency planning, security policy and programs, risk management, legal and regulatory issues, security personnel, and enterprise information security project management. This course is designed to provide the professional manager with an understanding of the identification and prioritization of information assets and their threats, information security strategy and architecture, how to plan for and respond to system intrusions, the implications of security and privacy issues, and the information disaster recovery plan after an accident. Open to graduate students only. Prerequisite: Admission to the MBA or MSA program or the approval of the MBA advisor. 3 hours

CIS 6710 Information Assurance and Security This course examines information security assurance and security approaches, models, strategies, and techniques. The course reviews major core topics such as the rationales and planning for information security, but then moves into more detailed examination of risk management concepts such as assessment, controls, and continuity planning strategies. This course will help students understand the need for business impact analyses, recovery planning and processes, as well as the importance of information security education, training, and awareness to organizations. Students will learn how to implement information security policies and procedures as well as how to maintain an organization's information security profile over time. Case projects and scenarios are used throughout the course to illustrate, test, and understand these topics. Open to graduate students only. Prerequisites: CIS 5710 and CS 5710. 3 hours

CS 6720 IT Governance and Service Management This course provides foundation-level training for IT professionals to gain an understanding of the ITIL terminology. Students will gain knowledge of the ITIL service lifecycle and the ITIL processes, roles, and functions. Students will also gain an understanding of how the service lifecycle provides effective and efficient IT services that are aligned to, and underpin, business processes. Open to graduate students only. Prerequisites: CIS 5710 and CS 5710. 3 hours

CIS 6730 Cyberwarfare, Cybercrime, and Digital Forensics This course examines three major disciplines in information security: Cyberwarfare, Cybercrime, and Digital Forensics. Although each area of study is

worthy of its own focus, this course introduces students to the major approaches, concepts, and skills needed to understand and potentially pursue a more in depth study of each.

In the Cyberwarfare section, students learn how military and nation state approaches to cyberwarfare differ from those in the business sector. Topics include cyberspace intelligence operations, offensive and defensive cyberwarfare, military doctrine, and evolving threat strategies. Case projects and real-world incidents underscore the importance of comprehending the cyberwarfare landscape and the potential nonstate actor (e.g., businesses) implications.

In the Cybercrime section, students study the various categories of cybercrimes to include crimes against computers, crimes against people, cyberfraud, and illicit content instances. Topics such as DDOS attacks, ransomware, phishing, cyberbullying, and hate sites will be discussed in terms of what they are and how information security experts must address them.

Finally, digital forensics investigation procedures to include data acquisition, file recovery, and chain of custody will be studied. Students will learn about various digital forensic tools and procedures, as well as specialized forensic investigations, such as cloud, mobile, and social media forensics procedures. Many topics and exercises will help students learn how to address both policy and legal challenges involved in dealing with the Cybercrime categories introduces earlier in the course. Open to graduate students only. 3 hours

CIS 7100 Independent Research Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Restricted to MBA or MSA students. Prerequisite: Application and department approval. 2 to 6 hours

CIS 7120 Professional Field Experience Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Restricted to MBA or MSA students. Prerequisite: Department approval. 2 to 12 hours

Finance and Commercial Law

FCL 6000 Seminar in Business Intensive problem solving in the primary business fields. May be repeated for credit. Open to graduate students only. Enrollment in HCOB graduate business courses requires admission to the MBA or MSA program or the approval of the Director of Graduate Business Programs. Prerequisite: Instructor approval. 3 hours

FIN 5530 Student Managed Investment Fund A course in which students get hands-on experience in investment research and portfolio management. Under the guidance of an instructor, the students have fiduciary responsibility to manage a portfolio of real money on behalf of the WMU Foundation, subject to the WMU Foundation Investment Policy Statement and other guidelines provided by the WMU Foundation Investment Committee. The students, acting as research analysts, utilize quantitative, qualitative and fundamental analysis to determine whether a financial security should be included in the portfolio. The students must present their research findings to the class. Admission to this unique class is by application, and class size is limited to 10 to 15 students. Restricted to MBA students with a concentration in Aviation, Finance or Health Care.May be repeated for credit. Open to upperclass and graduate students. Prerequisite: FIN 6120 3 hours

FIN 6020 Corporate Finance This course will introduce students to financial principles and techniques which are essential for understanding the financial management function of a firm. Open to graduate students only. Enrollment in HCOB graduate business courses requires admission to the MBA or MSA program or the approval of the Director of Graduate Business Programs. Prerequisite: BUS 6010 or ACTY 6010. 3 hours

FIN 6120 Financial Management This course will focus on a contemporary study of financial management. Topics to be examined include short-term financing, capital budgeting, asset pricing theory, sources of long-term capital, optimal capital structure, corporate restructuring and international dimensions of corporate

financial management. Open to graduate students only. Enrollment in HCOB graduate business courses requires admission to the MBA or MSA program or the approval of the Director of Graduate Business Programs.
Prerequisite: FIN 6020 or equivalent. 3 hours

FIN 6130 Managerial Finance This course focuses on a contemporary study of financial management so as to understand the link between operations and corporate financial performance. Topics to be examined include: interpreting and analyzing financial statements by using various performance metrics and financial ratios, Company valuation techniques, measuring cost of capital, using decision tools such as break-even analysis, and capital budgeting techniques. Learning how supply chain and operations decision-making directly impacts return on investments, return on assets, working capital, payables and credit risk, cash conversion cycle and other key financial metrics will be a large component of the course. Open to graduate students only. 3 hours

FIN 6190 Financial Markets and Institutions Study of money and capital markets, financial instruments, and intermediaries in a global context. Topics include interest rate and security price determination, term structure theory, hedging techniques with derivatives, commercial and investment banking practices, and monetary policy methodology and influences. Open to graduate students only. Enrollment in HCOB graduate business courses requires admission to the MBA or MSA program or the approval of the Director of Graduate Business Programs. Prerequisite: FIN 6120 3 hours

FIN 6219 Essentials of Health Care Financial Management This course focuses on introducing the key financial management principles, concepts and decisions that create value for health care organizations. The course will cover a broad range of topics, including an overview of the health care system; reimbursement methodologies; health care accounting; economic value and market value added; managing cash, billing and collections; and an analysis of financing major capital investments. Budgeting and pricing will also be reviewed. Open to graduate students only. 3 hours

FIN 6220 Financial Restructuring An investigation and analysis of the financial aspects of corporate restructuring. The course emphasizes valuation of public and private companies. In addition, it examines the financial implications of leveraged buyouts, spin-offs, and other types of divestitures. Open to graduate students only. Enrollment in HCOB graduate business courses requires admission to the MBA or MSA program or the approval of the Director of Graduate Business Programs. Prerequisite: FIN 6120 3 hours

FIN 6250 Financial Strategy The main focus of this course is on value creation. It attempts to bridge the gap between theory and practice. Topics include financial analysis and forecasting, risk management, working capital management, capital budgeting, capital structure theory and dividend policy. Students identify problems facing the financial executive and recommend the best course of action utilizing financial theory. Open to graduate students only. Enrollment in HCOB graduate business courses requires admission to the MBA or MSA program or the approval of the Director of Graduate Business Programs. Prerequisites: FIN 6120
3 hours

FIN 6420 International Finance A study of contemporary issues in the areas of multinational financial management and international investments with emphasis on the management of currency risk. The areas to be examined include international treasury cash management, multinational capital budgeting and hedging of transactions, operations and translation exposure. Open to graduate students only. Enrollment in HCOB graduate business courses requires admission to the MBA or MSA program or the approval of the Director of Graduate Business Programs. Prerequisite: FIN 6120 3 hours

FIN 6450 Computer Applications in Finance Spreadsheets, web resources, and statistical analyses are used to analyze finance issues with current computer software. Web research includes searching security databases, downloading stock prices, and using stock screening programs. Statistical analyses use regression. The cases cover topics such as capital budgeting, cash budgeting, estimating beta, financial forecasting, and ratio analysis. Students work in teams to solve cases and give presentations. Open to graduate students only. Enrollment in HCOB graduate business courses requires admission to the MBA or MSA program or the approval of the Director of Graduate Business Programs. Prerequisite: FIN 6120 3 hours

FIN 6540 Investment Analysis and Management A detailed analysis of the investigation of corporate securities as long-term investment media, largely from the standpoint of the individual investor. Investigates the techniques for security valuation and portfolio management, with some discussion of financial institution investment procedures. Considers mechanics, markets, institutions, and instruments important to the investment process. Open to graduate students only. Not open to students with credit earned in FIN 4530 or its equivalent. Enrollment in HCOB graduate business courses requires admission to the MBA or MSA program or the approval of the Director of Graduate Business Programs. Prerequisite: FIN 6120 3 hours

FIN 6910 Seminar in Finance The analysis of specialized financial problem areas (e.g., financial futures markets, financial forecasting, commodities, and similar contemporary problems). Topics will vary from semester to semester. May be repeated for credit. Open to graduate students only. Enrollment in HCOB graduate business courses requires admission to the MBA or MSA program or the approval of the Director of Graduate Business Programs. Prerequisite: FIN 6120 3 hours

FIN 6980 Readings and Research in Finance Directed individual study of bodies of knowledge not otherwise treated in departmental courses. Open to graduate students only. Enrollment in HCOB graduate business courses requires admission to the MBA or MSA program or the approval of the Director of Graduate Business Programs. Prerequisite: Department approval. 1 to 3 hours

FIN 7100 Independent Research Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Restricted to MBA or MSA students. Prerequisite: Department approval. 2 to 6 hours

FIN 7120 Professional Field Experience Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Restricted to MBA or MSA students. Prerequisite: Department approval.. 2 to 12 hours

LAW 6040 Legal, Regulatory, and Political Aspects of Business This course provides an introduction to the legal, regulatory, and political environments of business. The course will examine the role of law in society; the structure of the American legal, regulatory, and political systems; and basic legal principles governing business conduct. The course reviews major legal problems encountered by business managers. The manager's role in dispute resolution and factors affecting the organization of business are also examined. Open to graduate students only. Enrollment in HCOB graduate business courses requires admission to the MBA or MSA program or the approval of the Director of Graduate Business Programs. 3 hours

LAW 6980 Readings and Research in Law Directed individual study of bodies of knowledge not otherwise treated in departmental courses. Open to graduate students only. Enrollment in HCOB graduate business courses requires admission to the MBA or MSA program or the approval of the Director of Graduate Business Programs. Prerequisite: Department approval. 1 to 3 hours

LAW 7100 Independent Research Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Restricted to MBA or MSA students. Prerequisite: Department approval. 2 to 6 hours

LAW 7120 Professional Field Experience Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Restricted to MBA or MSA students. Prerequisite: Department approval. 2 to 12 hours

Management

MGMT 6000 Seminar in Management (Topic) Intensive problem solving in advanced management topics, including the preparation of a major staff report. Repeatable for different topics. Open to graduate students only. Enrollment in HCOB graduate business courses requires admission to the MBA or MSA program or the approval of the Director of Graduate Business Programs. 3 hours

MGMT 6050 Business and Supply Chain Basics This course develops a common business and supply chain literacy across core concepts, information technologies and quantitative methods. Basic skills in computer software and quantitative methods are emphasized to develop a student's abilities, thus developing a baseline of prerequisite knowledge and skills necessary to move into future courses. Various core supply chain concepts and skills are covered in several modules, delivered by faculty from respective areas with exercises and projects to demonstrate the application of the skill. A simulation is used to demonstrate the need for concept and the skill development. Open to graduate students only. 1 to 3 hours

MGMT 6100 International Management The purpose of this course is to develop the skills, knowledge, and sensitivities necessary to manage successfully in an international environment. Students will learn why and how companies internationalize their operations, and the implications of managing in diverse environments worldwide. Open to graduate students only. Enrollment in HCOB graduate business courses requires admission to the MBA or MSA program or the approval of the Director of Graduate Business Programs.
Prerequisite: BUS 6150. 3 hours

MGMT 6140 Supply Chain and Process Management Students acquire and apply the knowledge and skills needed to improve integrated purchasing, operations, and logistics processes in manufacturing and service firms. Strategies, principles and techniques included in lean systems, total quality management, six-sigma and constraints management will be used by students to develop innovative solutions to process design, management and improvement challenges presented in strategic business cases, simulated systems, or projects within the value chain of an organization. Open to graduate students only. Enrollment in HCOB graduate business courses requires admission to the MBA or MSA program or the approval of the Director of Graduate Business Programs. Cross-listed with MKTG 6140, students can only receive credit for one of these courses. 3 hours

MGMT 6170 Leading People and Organizations Leading people and organizations is a course designed to promote your understanding of human behavior and assist you in developing your leadership skills. The course will help you discover methods to enhance human performance and promote sustained organizational success. Essentially, the course focuses on the importance of identifying, motivating, leading and retaining high performing employees. Open to graduate students only. Enrollment in HCOB graduate business courses requires admission to the MBA or MSA program or the approval of the Director of Graduate Business Programs.
3 hours

MGMT 6200 ERP System Configuration Through hands-on experiences, students learn how to configure an integrated Enterprise Requirements Planning (ERP) system to manage a firm’s business processes and gain a better understanding of the nature of these processes. Management issues associated with implementing these packages are also explored. Open to graduate students only. Enrollment in HCOB graduate business courses requires admission to the MBA or MSA program or the approval of the Director of Graduate Business Programs. Cross-listed with CIS 6200, students can only receive credit for one of these courses. 3 hours

MGMT 6305 Supply Chain Management I This course examines the integrated/cross-functional core concepts of supply chains from product/service development and launch through customer service and redemption. The course stresses critical analysis and decision-making tools necessary to develop and manage supply chain networks. A comprehensive business simulation combined with online presentations and assignments is used to demonstrate the multi-dimensional nature of supply chain decisions and their impact on performance. Open to graduate students only. 3 hours

MGMT 6315 Supply Chain Management II This course continues to examine the concepts of integrated supply chain networks. The primary focus of the course is the continued use of critical analysis to determine how to best develop/manage supply networks that ensure competitive advantage and customer success, and are economically justified. As in the previous course, the same comprehensive business simulation, combined with online curriculum presentations, is used to provide participants with an opportunity to apply the tools and techniques in a trial-and-error fashion, thus gaining experience in their application and uses. Open to graduate students only. 3 hours

MGMT 6325 Process Management and Problem Solving Structured and data-driven problem solving approaches such as DMAIC and PDCA and the associated tools such as process mapping, root cause analysis, 5S,

capability analysis, cycle time analysis and inventory analysis are used to identify, prioritize, and improve operations and supply processes that need improvement. Establishing and utilizing critical organizational enablers of improvement and problem solving such as business culture, change management, team dynamics and buy-in will also be addressed. Participants will conduct process improvement projects that impact their personal or professional lives, and be engaged in simulated problem solving activities. Open to graduate students only. 3 hours

MGMT 6330 Managing Risk in the Supply Chain This course provides the knowledge and tools necessary for supply chain professionals to ensure their organizations become industry leaders by better managing their supply chains to achieve reduced costs while also improving customer service levels. Supply chain risk can range from general issues of business continuity to the impact of natural disasters. In this course, participants will gain a solid understanding of Supply Chain Risk Management principles including effective ways to identify, mitigate and measure the impact of potential supply chain disruptions. Global trade has brought about proportionally high levels of risk and uncertainty. This increased risk and uncertainty are accompanied by increased costs and reduced levels of customer service. Risk is found in all supply chains, but with analysis, preparation and action, these risks can be managed and the impact of disruptions can be mitigated. Open to graduate students only. 3 hours

MGMT 6350 Demand/Supply Integration The design and implementation of distribution channels emphasizing customer service, least-total-cost design, and time-based competition. The course will include particular attention to the application of information technology; the integration of important strategic issues; the coordination of activities impacting channel efficiency; and the management of channel relationships. Supply Chain Strategy identifies two primary sets of processes through which a firm creates value for its customers by moving goods and information through marketing channels; demand-focused processes and supply-focused processes. Historically, firms have invested resources to develop a core differential advantage in one or the other of these areas - but rarely in both - often resulting in mismatches between demand (what customers want) and supply (what is available in the marketplace). Successfully managing the supply chain to create customer value requires extensive integration between demand-focused processes and supply-focused processes, which will be a major theme in the course and overall curriculum. Open to graduate students only. 3 hours

MGMT 6370 Transformational Leadership This course/seminar is designed to provide students/learners with theoretical knowledge, practical guidelines and skill building exercises that will enhance their leadership abilities with specific emphasis on improving an organization through transformational leadership using creativity and innovation. Transformational leadership describes ways leaders can initiate, develop, and execute significant positive changes in organizations through engaging others to create a connection that increases motivation in both the leader and the follower. To create these connections and increase motivation, highly effective leaders use creativity and innovation to ignite the intrinsic motivation and internal drive of those they lead. This course/seminar examines current and cutting-edge trends and techniques to foster creativity and innovation in organizations and their people with the primary application of leading effective change and creating a positive organizational culture. Open to graduate students only. 3 hours

MGMT 6390 Global Supply Chain Strategy Supply Chain Strategy is an integrated/cross-functional process that uses critical analysis to determine how the organization can best develop and manage a supply chain network that meets the needs of its customers and ensure its competitive advantage. The decision process is rooted in a deep understanding of the overall value chain and the business case behind configuring its supply/value chain network. Open to graduate students only. 3 hours

MGMT 6410 Business Venturing Focuses on all aspects of starting a new business, with emphasis on the critical role of recognizing and creating opportunities. Topics include evaluation of opportunities, sources of financing, and challenges of rapid growth. Term project involves development and presentation of a professional business plan. Open to graduate students only. Enrollment in HCOB graduate business courses requires admission to the MBA or MSA program or the approval of the Director of Graduate Business Programs. 3 hours

MGMT 6450 Capstone The course provides the participant an opportunity to apply the principles and concepts examined in the Master of Science in Supply Chain Management to a specific topic or issue they wish to examine. The capstone project can be a research project studying a specific topic or a sponsor-based,

supply chain-based project. Projects are jointly approved by management of sponsoring organization and faculty and administration of the MS-SCM program and have the potential to contribute significant financial impact to the sponsor. Open to graduate students only. 3 hours

MGMT 6500 Managing Change The process of change inside organizations with particular emphasis on managerial actions that influence effectiveness is investigated. Change is examined at the strategic, organizational and behavioral levels. Open to graduate students only. Enrollment in HCOB graduate business courses requires admission to the MBA or MSA program or the approval of the Director of Graduate Business Programs. 3 hours

MGMT 6580 International Human Resource Management The purpose of this course is to investigate issues in the management of human resources on a global basis. It includes topics such as globalization and business strategy, culture, employment law, expatriate staffing, performance appraisals, cross-cultural training, and international labor relations. Open to graduate students only. Enrollment in HCOB graduate business courses requires admission to the MBA or MSA program or the approval of the Director of Graduate Business Programs. 3 hours

MGMT 6800 Management of Innovation and Technology (MOIT) An understanding of the concepts involved in developing core technological competencies, managing existing technologies, and developing new technologies through innovation. Focus will be on the management dimension of technology and innovation. Topics covered will include: technology and strategy (including technological forecasting), management of technology (including development of core technical competencies and technology acquiring options), management of innovation (including internal entrepreneurship and organizational change, and managing R&D), the economics of innovation, and the relevance of Management of Innovation and Technology in helping a firm meet or surpass global competition. Open to graduate students only. Enrollment in HCOB graduate business courses requires admission to the MBA or MSA program or the approval of the Director of Graduate Business Programs. 3 hours

MGMT 6950 Advanced Independent Study Independent study of current trends and advanced problems in the organization and management of complex organizations. May be repeated for credit. Open to graduate students only. Enrollment in HCOB graduate business courses requires admission to the MBA or MSA program or the approval of the Director of Graduate Business Programs. Prerequisite: Approval of department chair. 1 to 3 hours

MGMT 7100 Independent Research Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Restricted to MBA or MSA students. Prerequisite: Application and department approval. 2 to 6 hours

MGMT 7120 Professional Field Experience Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Restricted to MBA or MSA students. Prerequisite: Application and department approval. 2 to 12 hours

Marketing

MKTG 6050 Business and Supply Chain Basics This course develops a common business and supply chain literacy across core concepts, information technologies and quantitative methods. Basic skills in computer software and quantitative methods are emphasized to develop a student's abilities, thus developing a baseline of prerequisite knowledge and skills necessary to move into future courses. Various core supply chain concepts and skills are covered in several modules, delivered by faculty from respective areas with exercises and projects to demonstrate the application of the skill. A simulation is used to demonstrate the need for concept and the skill development. Open to graduate students only. 1 to 3 hours

MKTG 6130 Customer-Driven Marketing Management An examination of marketing theory, concepts, and processes used by organizations to create customer value, achieve and sustain competitive advantage and accomplish their strategic mission and objectives. Emphasis on planning, implementing, and evaluating

customer-driven marketing strategies to respond effectively to complex global, cultural, technological, competitive, and other market or environmental factors. Open to graduate students only. Enrollment in HCOB graduate business courses requires admission to the MBA or MSA program or the approval of the Director of Graduate Business Programs. Prerequisite: Completion of all MBA basic core requirements or written approval of Director of Graduate Business Programs. 3 hours

MKTG 6140 Supply Chain and Process Management Students acquire and apply the knowledge and skills needed to improve integrated purchasing, operations, and logistics processes in manufacturing and service firms. Strategies, principles and techniques included in lean systems, total quality management, six-sigma and constraints management will be used by students to develop innovative solutions to process design, management and improvement challenges presented in strategic business cases, simulated systems, or projects within the value chain of an organization. Open to graduate students only. Enrollment in HCOB graduate business courses requires admission to the MBA or MSA program or the approval of the Director of Graduate Business Programs. Cross-listed with MGTG 6140, students can only receive credit for one of these courses. 3 hours

MKTG 6305 Supply Chain Management I This course examines the integrated/cross-functional core concepts of supply chains from product/service development and launch through customer service and redemption. The course stresses critical analysis and decision-making tools necessary to develop and manage supply chain networks. A comprehensive business simulation combined with online presentations and assignments is used to demonstrate the multi-dimensional nature of supply chain decisions and their impact on performance. Open to graduate students only. 3 hours

MKTG 6315 Supply Chain Management II This course continues to examine the concepts of integrated supply chain networks. The primary focus of the course is the continued use of critical analysis to determine how to best develop/manage supply networks that ensure competitive advantage and customer success, and are economically justified. As in the previous course, the same comprehensive business simulation, combined with online curriculum presentations, is used to provide participants with an opportunity to apply the tools and techniques in a trial-and-error fashion, thus gaining experience in their application and uses. Open to graduate students only. 3 hours

MKTG 6325 Process Management and Problem Solving Structured and data-driven problem solving approaches such as DMAIC and PDCA and the associated tools such as process mapping, root cause analysis, 5S, capability analysis, cycle time analysis and inventory analysis are used to identify, prioritize, and improve operations and supply processes that need improvement. Establishing and utilizing critical organizational enablers of improvement and problem solving such as business culture, change management, team dynamics and buy-in will also be addressed. Participants will conduct process improvement projects that impact their personal or professional lives, and be engaged in simulated problem solving activities. Open to graduate students only. 3 hours

MKTG 6330 Managing Risk in the Supply Chain This course provides the knowledge and tools necessary for supply chain professionals to ensure their organizations become industry leaders by better managing their supply chains to achieve reduced costs while also improving customer service levels. Supply chain risk can range from general issues of business continuity to the impact of natural disasters. In this course, participants will gain a solid understanding of Supply Chain Risk Management principles including effective ways to identify, mitigate and measure the impact of potential supply chain disruptions. Global trade has brought about proportionally high levels of risk and uncertainty. This increased risk and uncertainty are accompanied by increased costs and reduced levels of customer service. Risk is found in all supply chains, but with analysis, preparation and action, these risks can be managed and the impact of disruptions can be mitigated. Open to graduate students only. 3 hours

MKTG 6350 Demand/Supply Integration The design and implementation of distribution channels emphasizing customer service, least-total-cost design, and time-based competition. The course will include particular attention to the application of information technology; the integration of important strategic issues; the coordination of activities impacting channel efficiency; and the management of channel relationships. Supply Chain Strategy identifies two primary sets of processes through which a firm creates value for its customers by moving goods and information through marketing channels; demand-focused processes and supply-focused processes. Historically, firms have invested resources to develop a core differential advantage in one or the other of these areas

- but rarely in both - often resulting in mismatches between demand (what customers want) and supply (what is available in the marketplace). Successfully managing the supply chain to create customer value requires extensive integration between demand-focused processes and supply-focused processes, which will be a major theme in the course and overall curriculum. Open to graduate students only. 3 hours

MKTG 6390 Global Supply Chain Strategy Supply Chain Strategy is an integrated/cross-functional process that uses critical analysis to determine how the organization can best develop and manage a supply chain network that meets the needs of its customers and ensure its competitive advantage. The decision process is rooted in a deep understanding of the overall value chain and the business case behind configuring its supply/value chain network. Open to graduate students only. 3 hours

MKTG 6450 Capstone The course provides the participant an opportunity to apply the principles and concepts examined in the Master of Science in Supply Chain Management to a specific topic or issue they wish to examine. The capstone project can be a research project studying a specific topic or a sponsor-based, supply chain-based project. Projects are jointly approved by management of sponsoring organization and faculty and administration of the MS-SCM program and have the potential to contribute significant financial impact to the sponsor. Open to graduate students only. 3 hours

MKTG 6610 Healthcare Marketing This course presents the field of marketing and its application to the healthcare industry. Emphasis is on the design and use of marketing analyses in areas of patient and client satisfaction, critical path and performance models, continuous quality improvement, and the managerial application of market research findings. A range of health care provider services are researched using marketing techniques such as segmentation, fail point and boundary analyses for healthcare services. Open to graduate students only. Enrollment in HCOB graduate business courses requires admission to the MBA or MSA program or the approval of the Director of Graduate Business Programs. 3 hours

MKTG 6630 Electronic Marketing Electronic marketing links customers directly with companies, suppliers, and other participants for the development and delivery of products and services. This course examines electronic marketing in terms of specific industries and designated target markets. Students will gain knowledge about customer relationship management using electronic technology, for example the Internet, and related methods and tools used to attract, delight, and retain customers via electronic platforms. Open to graduate students only. Enrollment in HCOB graduate business courses requires admission to the MBA or MSA program or the approval of the Director of Graduate Business Programs. Prerequisite: MKTG 6130 3 hours

MKTG 6650 Global Negotiation This course will look at a process-model of negotiation with special attention to how to utilize that model in both a domestic and global environment. Students will participate in a series of cases that will require negotiation preparation and execution with the ultimate goal of gaining transferable negotiation skills. The course will consist of lectures, discussions, cases, role-plays, written and oral reports, and in-class exercises. Open to graduate students only. Enrollment in HCOB graduate business courses requires admission to the MBA or MSA program or the approval of the MBA advisor. 3 hours

MKTG 6700 Sales Leadership This course is designed to be a "learning laboratory" for exploring key sales leadership concepts related to the sales function and that of the sales leader in the firm. We will focus on developing hands-on analytical and management coaching skills through the use of business case studies, active practice in the classroom/lab and videotaped interactions. Special attention will be given to how and when to use marketing analytics for decision-making, the role of the sales leader as coach, and the role of technology in the sales organization. Open to graduate students only. Enrollment in HCOB graduate business courses requires admission to the MBA or MSA program or the approval of the MBA advisor. 3 hours

MKTG 6710 Applied Marketing Research Applications of marketing research methods for marketing management using a variety of analytical techniques. Required for all MBA marketing concentrations. Open to graduate students only. Enrollment in HCOB graduate business courses requires admission to the MBA or MSA program or the approval of the Director of Graduate Business Programs. Prerequisite: MKTG 6130 recommended 3 hours

MKTG 6730 New Product Management A systematic examination of market-driven processes for developing and launching new products and managing them over their life cycles. Includes application of marketing research along with consideration of organizational, technological, competitive, and societal issues. Open to graduate students only. Enrollment in HCOB graduate business courses requires admission to the MBA or MSA program or the approval of the Director of Graduate Business Programs. Prerequisite: MKTG 6130 and (FIN 6120 is recommended). 3 hours

MKTG 6740 Integrated Marketing Communications Strategy The course focuses on the study of the theoretical and practical sides of integrated marketing communications strategy development from a managerial perspective. Included is exposure to the elements of the integrated marketing communications mix (advertising, sales promotion, public relations, interactive marketing, and selected personal selling actions). Media strategy, creative strategy, integrated marketing communication objectives, and budget determination are also explored. Course format may include case studies and/or group projects. Open to graduate students only. Enrollment in HCOB graduate business courses requires admission to the MBA or MSA program or the approval of the Director of Graduate Business Programs. Prerequisite: MKTG 6130 3 hours

MKTG 6760 Multinational Marketing Management Managerial analysis of the global marketing environment and evaluation of market entry strategies including exporting, licensing and direct investment; developing and assessing multinational product, pricing, promotional, and distribution strategies; critical discussion of contemporary international marketing issues. Open to graduate students only. Enrollment in HCOB graduate business courses requires admission to the MBA or MSA program or the approval of the Director of Graduate Business Programs. Prerequisites: BUS 6150 and MKTG 6130 (may be taken concurrently). 3 hours

MKTG 6770 Buyer Behavior This course presents the theoretical and practical foundations of consumer and organizational behavior from a managerial perspective. Students will develop an understanding of why consumers and organizational decision makers think and act as they do in the marketplace. Emphasis is placed on decision-making processes. Resource availability, cultural and intercultural contexts, psychological and sociological influences on decision making are explored. Open to graduate students only. Enrollment in HCOB graduate business courses requires admission to the MBA or MSA program or the approval of the Director of Graduate Business Programs. Prerequisite: MKTG 6130 3 hours

MKTG 6780 Special Topics in Marketing Critical examination of advanced topics within the marketing discipline. The course topic will be indicated in the student record. May be repeated for credit under different topics. Open to graduate students only. Enrollment in HCOB graduate business courses requires admission to the MBA or MSA program or the approval of the Director of Graduate Business Programs. Prerequisite: MKTG 6130 3 hours

MKTG 6800 Global Sourcing and Logistics This course will examine concepts in international purchasing and logistics to provide an in-depth understanding of the international supply chain and how sourcing and logistics activities change and become more complex in the global environment. These aspects will be discussed in terms of opportunities, challenges and changing customer requirements resulting from trading blocs, emerging markets and developing countries. Open to graduate students only. Enrollment in HCOB graduate business courses requires admission to the MBA or MSA program or the approval of the Director of Graduate Business Programs. Prerequisite: BUS 6150 and (MKTG 6130 is recommended). 3 hours

MKTG 6970 Special Problems in Marketing Special problems based on individual and/or group need or interest under the direction of a member of the graduate faculty. Student application must be submitted to the individual faculty member and approved by the department chair prior to election of the course. May not be repeated for credit. Open to graduate students only. Enrollment in HCOB graduate business courses requires admission to the MBA or MSA program or the approval of the Director of Graduate Business Programs. Prerequisites: MKTG 6130, MKTG 6710 and department approval. 3 hours

MKTG 7120 Professional Field Experience Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Restricted to MBA students. Prerequisite: Application and department approval. 2 to 12 hours

Interdisciplinary Courses

BUS 6150 Global Business This course is designed to provide a foundation of how to conduct business in a dynamic multi-dimensional global environment. The objectives are for students to develop a greater understanding of the economic, socio-cultural, political, legal, and ethical environment of international business and to analyze how differences in the global business environment, particularly intercultural diversity, influence a firm's global business functional activities such as production marketing, management, information management, accounting and finance. Additionally, contemporary developments influencing international business operations will be examined. Open to graduate students only. Prerequisites: Admission to the MBA or MSA program or approval of the MBA advisor. 3 hours

BUS 6160 Law, Ethics and Corporate Social Responsibility This course introduces students to the influences of ethics, law and society on corporate responsibility. An examination of a firm's mission, goals, and business strategy will be considered within an ethical and legal framework, including issues of sustainability. Diverse viewpoints regarding the nature and limits of corporate social responsibility will be explored in the context of alternative strategic choices for the firm. The course will provide opportunities to analyze the legal and ethical implications of business decisions and to devise viable solutions, including sustainability efforts. Open to graduate students only. Prerequisite: Admission to the MBA or MSA program or approval of the MBA advisor. 3 hours

BUS 6180 Information Technology Management This course enables students to recognize

- information technology as part of overall business strategy
- technology as an enabler of business processes, and
- technology effects on organizations (e.g. knowledge-based, networked, extended, agile, mobile, and/or virtual)

The course focuses on strategic issues involving information technology management rather than application of specific computer tools; however some projects and information technology tools are used in the course to enhance knowledge, wisdom and skills in aligning business and information technology processes and strategies. Information technology supporting sustainability of economic vitality, environmental accountability, and social responsibility will also be examined. Students will understand the essential role played by technology in the creation of integrated business systems, and will experience technology applied to decision making processes. Enrollment in HCOB graduate business courses requires admission to the MBA or MSA program or the approval of the Director of MBA Program. Open to graduate students only. Prerequisite: Admission to the MBA or MSA program or approval of the MBA advisor. 3 hours

BUS 6960 Study Abroad Seminar An international study abroad seminar designed for qualified and capable graduate students, teachers and business executives. The seminar introduces participants to a firsthand knowledge of business operations abroad through visits to foreign manufacturing, service, governmental and or non-governmental organizations supplemented by coordinated lectures and assigned readings. May be repeated for credit. 1 to 6 hours

BUS 6990 Strategic Management An advanced examination of the tasks of formulating and implementing long-run strategy for the organization. New conceptual knowledge is added to the concepts students have learned in previous MBA courses. The combined knowledge is applied by analyzing strategic cases and/or competing in business simulations. The course examines how companies develop strategies from analyses of the organization's internal and external environments and successfully implement and evaluate the strategies. This is an integrative capstone course designed to provide a total business perspective. Enrollment in HCOB graduate business courses requires admission to the MBA or MSA program or the approval of the Director of MBA Program. Open to graduate students only. Prerequisites: ACTY 6110, (FIN 6120 or FCL 6120), MKTG 6130, (MKTG 6140 or MGMT 6140), and MGMT 6170; or approval of the HCOB director of graduate programs. 3 hours

College of Education and Human Development

College of Education and Human Development

CEHD 5000 Topics in Education and Human Development An interdisciplinary topics course exploring issues and trends in education and human development that are not offered in other courses. Topics will be designated by faculty offering the course and announced in the schedule of course offerings. May be repeated for credit. Open to upperclass and graduate students. 1 to 6 hours

CEHD 7010 Topics in Education and Human Development An interdisciplinary topics course exploring issues and trends in education and human development that are not offered in other courses. Topics will be designated by faculty offering the course and announced in the schedule of course offerings. May be repeated for credit. Open to graduate students only. 1 to 6 hours

Counselor Education and Counseling Psychology

CECP 5200 Foundations of Rehabilitation Counseling This course surveys the role of the rehabilitation counselor in establishing eligibility, planning services, the tracking system, counseling, case management, work evaluation, work adjustment, supported employment, transition, client assistance programs, job analysis, job development, postemployment, and advocacy. Major emphasis is given to the operation of the state vocational/federal system. Open to upperclass and graduate students. 3 hours

CECP 5830 Workshops in Counselor Education and Counseling Psychology Workshops designed to enhance skill development related to Counselor Education and Counseling Psychology practices. Open to Upperclass and Graduate students, but is not intended for counseling majors. 1 to 4 hours

CECP 6010 Research Methods The study of research designs and techniques utilized in the field of Counselor Education and Counseling Psychology. Students are expected to formulate and submit a research project in their area of specialization. Open to Counselor Education and Counseling Psychology Graduate Students only. Graduate students from other programs may enroll by special permission. 3 hours

CECP 6020 Group Dynamics and Procedures The study of group dynamics, i.e., the nature of groups and the laws affecting group development and process. An analysis of the various group procedures and the process associated with these procedures. Open to Counselor Education and Counseling Psychology Graduate Students only. Graduate students from other programs may enroll by special permission. 3 hours

CECP 6030 Tests and Measurement Designed to develop skills in analyzing, scoring, administering, and interpreting standardized tests. Students will examine selected aptitude, achievement, intelligence, personality and vocational instruments, as well as analyze their use in the student's area of specialization. Issues related to testing will be reviewed, including legal matters, ethical concerns, and use of tests with persons of varying social, economic, cultural, and ethnic backgrounds. Open to Counselor Education and Counseling Psychology Graduate Students only. Graduate students from other programs may enroll by special permission. 3 hours

CECP 6040 Counseling Techniques An introductory laboratory study of the concepts and skills required in interviewing and counseling. In addition to developing basic techniques and skills, special attention will be given to the impact of interview settings, interviewer/counselor attire, sex, ages of clients, and their social, economic, cultural, and ethnic backgrounds. Open to Counselor Education and Counseling Psychology Graduate Students only. Graduate students from other programs may enroll by special permission. 3 hours

CECP 6050 Professional Issues and Ethics Identification and discussion of issues in counseling, psychological services, and related programs will be the focus of this course. The study of ethical standards of relevant professional organizations. A presentation of case studies applicable to an understanding of current issues, multicultural concerns, legal decisions, and ethics in the field. Open to Counselor Education and Counseling

Psychology Graduate Students only. Graduate students from other programs may enroll by special permission. 3 hours

CECP 6070 Multicultural Counseling and Psychology This course is designed to help students develop knowledge, skills, and attitudes for more effective work as helping professionals with culturally different groups and individuals. Substantial attention is given to interpersonal issues, concerns related to different cultures, and programming in a variety of settings. Open to Counselor Education and Counseling Psychology Graduate Students only. Graduate students from other programs may enroll by special permission. 3 hours

CECP 6080 Counseling and Life Span Development The course addresses counseling implications for assessing and enhancing human development across the lifespan. The content includes: (a) theories of human development; (b) theories of learning and personality development; (c) human behavior, including an understanding of developmental crises, disability, exceptional behavior, addictive behavior, psychopathology, and situational and environmental factors that affect both normal and abnormal behavior; (d) the stages of family development; and (e) strategies for facilitating optimum development over the life span. Open to Counselor Education and Counseling Psychology Graduate Students only. Graduate students from other programs may enroll by special permission. 3 hours

CECP 6100 Career Development: Theory and Practice Course content includes: (1) a study of the world of work as it impacts the psychological and sociological life of the individual; (2) an examination of career development theory, decision-making, and the application to counseling and psychotherapy; (3) the identification of informational resources related to career choice; and (4) an exploration of the needs and concerns of clients from a variety of cultural backgrounds. Open to Counselor Education and Counseling Psychology Graduate Students only. Graduate students from other programs may enroll by special permission. 3 hours

CECP 6110 Theories of Counseling The nature, rationale, development, research and use of theories in counseling are studied. Major points of view including the psychoanalytic, cognitive, behavioral, phenomenological, existential, and family systems perspectives are studied and compared. Models of counseling that are consistent with current professional research and practice in the field and application of theory and intervention strategies to case studies are included. Open to Counselor Education and Counseling Psychology Graduate Students only. Graduate students from other programs may enroll by special permission. 3 hours

CECP 6120 Counseling Practicum This course emphasizes practical work in the student's area of specialization. Counseling experiences are provided in a laboratory setting so that students can apply knowledge and skills acquired during previous studies. Each student, by participation and observation, will be expected to work with clients from differing social, economic, cultural, and ethnic backgrounds. Open to Counselor Education and Counseling Psychology Graduate Students only. Graduate students from other programs may enroll by special permission. Graded on a Credit/No Credit basis. 4 hours

CECP 6130 Field Practicum A supervised field placement in a setting appropriate to the student's M.A. option arranged in consultation with advisor and department coordinator. A minimum of 600 clock hours on site are required for all M.A. options. Open to Counselor Education and Counseling Psychology Graduate Students only. Graduate students from other programs may enroll by special permission. Prerequisite: Consent of advisor. Graded on a Credit/No Credit basis. 1 to 6 hours

CECP 6210 Psychopathology: Classification and Treatment Basic concepts of history, current paradigms, and assessment of psychopathology with special emphasis on the APA diagnostic classification system and counseling/clinical approaches to treatment. Open to Counselor Education and Counseling Psychology Graduate Students only. Graduate students from other programs may enroll by special permission. 3 hours

CECP 6220 Psychoeducational Consultation A study of the process of consultation with emphasis upon methods, stages and strategies used with individuals, small groups and organizations. Consideration will be given to the consultant's role in psycho-affective education and primary prevention. Open to Counselor Education and Counseling Psychology Graduate Students only. Graduate students from other programs may enroll by special permission. 3 hours

CECP 6230 College Student Development Explores the nature and development of college students pertaining to student affairs. Theories of college student development, administrative strategies and techniques of program implementation are studied. Open to Counselor Education and Counseling Psychology Graduate Students only. Graduate students from other programs may enroll by special permission. 3 hours

CECP 6280 Foundations of Clinical Mental Health Counseling This course provides an overview of professional clinical mental health counseling including historical perspectives; ethical and legal issues; licensure, certification, and other credentialing; as well as rules and functions of clinical mental health counselors. Students will have opportunities to interact with mental health counselors, assess community mental health needs, and learn about the organization and function of mental health agencies. Additionally, counseling implications for working with racial minority and other disenfranchised groups will also be discussed. Open to Counselor Education and Counseling Psychology Graduate Students only. Graduate students from other programs may enroll by special permission. 3 hours

CECP 6340 Causes of Substance Abuse This course will examine the three major theories that explain the causes of psychoactive substance use: the biological, psychological, and sociological. The historical responses of society to substance use such as strategies including control, prevention, intervention, and treatment will be outlined and the research of various epidemiologic patterns and social correlates of substance use will also be studied. Open to Counselor Education and Counseling Psychology Graduate Students only. Graduate students from other programs may enroll by special permission. (Cross-listed with ADA 6060 and SWRK 6530). 3 hours

CECP 6350 Foundations of College Counseling Explores college counseling as a profession, examines the diverse characteristics of today's college students, and details the variety of roles and services provided by college counselors. Course is designed to provide an overview of the holistic, developmentally-based profession of college counseling. Open to Counselor Education and Counseling Psychology Graduate Students only. Graduate students from other programs may enroll by special permission. 4 hours

CECP 6360 Recovery Oriented Systems of Care This course will examine the understanding that recovery from substance abuse and dependency is a process of change which occurs within a systemic model of care that includes prevention, intervention, treatment, and management of substance use disorders. Students will have exposure to various substance abuse screening and assessment instruments, counseling strategies, and treatment modalities in order to assess, treat, and refer to the appropriate service providers along the continuum of care. This course will also provide students with an understanding of the ethical codes related to substance abuse counseling. Open to Counselor Education and Counseling Psychology Graduate Students only. Graduate students from other programs may enroll by special permission. (Cross-listed with ADA 6340 and SWRK 6550). 3 hours

CECP 6370 Organization and Principles of a Comprehensive School Counseling Program The purpose of this course is to enable students to understand, apply, and formulate a comprehensive school counseling program. In particular the history, philosophy, role, function, organization, administration, and development of school counseling will be examined in depth so that the counselor in preparation will have the necessary skills to assume an entry-level position as a professional school counselor. Restricted to Counselor Education and Counseling Psychology graduate students only. Graduate students from other programs may enroll by special permission. May be repeated for credit. Open to graduate students only. 3 hours

CECP 6380 School Counseling for Postsecondary and Career Readiness The purpose of this course is to enable students to understand, apply, and formulate programs of guidance as they apply to postsecondary planning and career readiness. This course is designed for pre-service school counselors to develop an understanding of the role of the school counselor, especially as this relates to developing a college-going and career readiness culture for all students, particularly students in poverty or facing other barriers in postsecondary planning. This course includes a focus on engaging students in early career awareness, planning, and making informed postsecondary choices. Students will learn about the usefulness of data to guide academic planning, and the steps involved for transitioning students from middle school to high school, and then to postsecondary training and college. This course also includes topics that relate to postsecondary planning, including financial literacy. financial aid, completing FAFSA's, and the college admission process. Restricted to Counselor Education and Counseling

Psychology graduate students only. Graduate students from other programs may enroll by special permission. May be repeated for credit. Open to graduate students only. 3 hours

CECP 6500 Intellectual Assessment This course provides instruction in clinical assessment with primary emphasis on individually administered intelligence tests. Emphasis is placed on accuracy of administration, scoring, and interpretation of psychological results via written and oral reports. Laboratory experience provides instruction in the administration of the Wechsler scales, Binet IV, and other individually administered measures of intellectual functioning. Additional topics include theories of intellectual development, neuropsychological assessment, test bias, and procedures for non-biased assessment. Open to Counselor Education and Counseling Psychology Graduate Students only. Graduate students from other programs may enroll by special permission. Prerequisite: CECP 6030 3 hours

CECP 6510 Personality Assessment Survey of theory of personality assessment and the basic concepts of non-projective measurement, with emphasis on the administration, scoring, and interpretation of various instruments. Primary attention given to the MMPI. Additional emphasis includes study of the Millon, 16-PF, CPI, and other measures. Open to Counselor Education and Counseling Psychology Graduate Students only. Graduate students from other programs may enroll by special permission. Prerequisite: CECP 6030 3 hours

CECP 6610 Foundations of Systemic Family Therapy An in depth focus on the theoretical foundations of family therapy. Emphasis is placed on systems theory and recent theoretical developments. Nomenclature and concepts particular to family therapy are stressed. Course content also includes an overview of the historical development, major models, and diversity issues related to family therapy. Open to Counselor Education and Counseling Psychology Graduate Students only. Graduate students from other programs may enroll by special permission. 3 hours

CECP 6620 Couple Interaction and Therapy Application of a systemic perspective to the assessment and treatment of couples who are seeking therapy. Models of couple therapy are examined and applied to problems common to couples. Attention is given to gender, race, culture, and couple forms. Open to Counselor Education and Counseling Psychology Graduate Students only. Graduate students from other programs may enroll by special permission. Prerequisite: CECP 6610. 3 hours

CECP 6630 Family Interaction and Therapy Application of a systemic perspective to the assessment and treatment of families who are seeking therapy. Models of family therapy are examined and applied to a variety of families and common problems. Multicultural and gender perspectives on family life are integrated in course content. Open to Counselor Education and Counseling Psychology Graduate Students only. Graduate students from other programs may enroll by special permission. Prerequisite: CECP 6610. 3 hours

CECP 6640 Seminar on Families and Family Therapy This advanced seminar course will address current issues faced by couples and families and focus on recent developments in couple and family therapy to meet the needs of contemporary couples and families of various forms. Emphasis is placed on post-modern approaches. A collaborative style will invite students to actively engage as teachers/learners. Articulation of one's evolving personal approach to therapy and the development of expertise in a particular area within family therapy will promote students' professional development. Open to Counselor Education and Counseling Psychology Graduate Students only. Graduate students from other programs may enroll by special permission. 3 hours

CECP 6650 Sex Therapy The subject of human sexuality is examined from a variety of social, physiological, and cultural viewpoints. Various forms of sexual dysfunction are studied and examined for understanding of both physiological and psychological components and role of each in the dysfunction. Finally, there is in depth study of current approaches to therapy as well as attention to other issues such as conjoint treatment of couples, resistance, sexual dysfunction in both partners, and sexual dysfunction and its relationship to marital discord. Open to Counselor Education and Counseling Psychology Graduate Students only. Graduate students from other programs may enroll by special permission. Prerequisite: CECP 6610 or CECP 6620. 3 hours

CECP 6670 Practicum in Couple and Family Therapy Practicum is a part-time clinical experience completed concurrent with didactic course work. Practicum gives the student an opportunity to apply knowledge and skills in couple and family therapy. Qualified couple and family therapy supervisors provide individual and group

supervision. The student develops a small caseload of clients and refines skills in case conceptualization, assessment, treatment planning, clinical intervention, documentation, and case management. Students begin practicum in a university laboratory setting, followed by community-based placements. Open to Counselor Education and Counseling Psychology Graduate Students only. Graduate students from other programs may enroll by special permission. This course is cross-listed with FCS 6670. Prerequisite: Permission of instructor. 1 to 4 hours

CECP 6740 Psychological Development Theory The course surveys theories of psychological development from a variety of perspectives such as analytic, humanistic, multicultural, social learning, behavioral, and constructive models. This learning experience is designed to both acquaint students with developmental theory and provide a basis for conceptualizing counseling issues within a developmental framework. The course is recommended for students of advanced standing in their degree programs. Open to Counselor Education and Counseling Psychology Graduate Students only. Graduate students from other programs may enroll by special permission. 3 hours

CECP 6750 Counseling Theories and Practices This is an advanced course in counseling theory and practice, which examines the principles and practices of major theories of counseling such as analytic, cognitive, humanistic, and integrative approaches to counseling in contemporary professional practice. Special attention is given to understanding and evaluating the underlying assumptions and principles within a cultural context. Empirically supported treatments and common factors in treatment are also examined. The learning experience is designed to assist students in clarifying their personal approach to counseling relationships. Open to Counselor Education and Counseling Psychology Graduate Students only. Graduate students from other programs may enroll by special permission. Prerequisites: CECP 6110, 6120, or equivalents. Prerequisites for the class include one formal course exposure to counseling theory, supervised laboratory work, and experience in the field of counseling. 3 hours

CECP 6800 Professional Seminar in Counseling Psychology Issues and Ethics This seminar explores current professional issues, including professional identity, professional development, the history of counseling psychology, professional organizations, the science and practice of counseling psychology, diverse populations, research and publishing, training issues, and professional ethics. The American Psychological Association's ethics code and principles of ethical reasoning and decision-making are studied and applied to professional conduct. Open to Counselor Education and Counseling Psychology Graduate Students only. Graduate students from other programs may enroll by special permission. Prerequisite: Admission to the doctoral program in Counseling Psychology.3 hours

CECP 6810 Professional Seminar in Counselor Education This seminar explores current professional issues such as professional identity, career options, professional organizations, and professional practice literature for doctoral students in Counselor Education. Open to Counselor Education and Counseling Psychology Graduate Students only. Graduate students from other programs may enroll by special permission. Prerequisite: Admission to the Counselor Education doctoral program or permission of instructor. 3 hours

CECP 6820 Advanced Multicultural Counseling This course will assist advanced counseling students in enhancing the knowledge and skill components of their multicultural training. Emphasis will be on pedagogy relevant to current social and cultural issues, including social change theory and advocacy action planning. As such, course activities will address multicultural skill development, research competencies, and facilitation of group discussions on racial, ethnic, and diversity issues in counseling. Open to Counselor Education and Counseling Psychology Graduate Students only. Graduate students from other programs may enroll by special permission. Prerequisites: Admission to the Counselor Education doctoral program and CECP 6070 or permission of instructor. 3 hours

CECP 6840 College Teaching in Counseling This course is designed for doctoral students who will become faculty in counselor education programs. The course examines the process of teaching styles and learning strategies appropriate for counselor preparation. Students will become familiar with the responsibilities and activities of counselor educators and learn how to prepare for employment as a counselor educator. Open to Counselor Education and Counseling Psychology Graduate Students only. Graduate students from other programs

may enroll by special permission. Prerequisite: Admission to the Counselor Education doctoral program or permission of instructor. 3 hours

CECP 6860 Topical Seminars Seminars to study current topics relevant to counseling psychological services and related fields. For advanced graduate students with sufficient maturity and experience to engage in seminar-structured learning. Topics will be designated by professors offering the seminars. Open to Counselor Education and Counseling Psychology Graduate Students only. Graduate students from other programs may enroll by special permission.
1 to 4 hours

CECP 6880 Advanced Multicultural Counseling Psychology This course is designed to assist counseling psychology doctoral students in enhancing the depth and complexity of their multicultural awareness, knowledge, and skills. The primary focus of the course will be on race and ethnicity with coverage of contemporary theoretical, practical and research developments in multicultural counseling psychology. Open to Counselor Education and Counseling Psychology Graduate Students only. Graduate students from other programs may enroll by special permission. Prerequisites: Admission to the Counseling Psychology doctoral program. CECP 6070, 6120, or an equivalent. 3 hours

CECP 6910 Supervision in Counseling and Psychotherapy This course is intended for practitioners and advanced graduate students who plan on assuming supervisory roles in counseling and psychotherapy. Attention will focus on models, techniques, roles and functions for supervision in a variety of organizational settings. Students will be expected to demonstrate supervisory style in the laboratory setting. Open to Counselor Education and Counseling Psychology Graduate Students only. Graduate students from other programs may enroll by special permission.Prerequisite: CECP 6930A, Individual Counseling & Psychotherapy. 3 hours

CECP 6930 Doctoral Practicum Supervised practicum for doctoral students with emphasis in (a) Individual Counseling and Psychotherapy, (b) Group Counseling, (c) Marital and Family Therapy, (d) Career Counseling, and (e) Clinical Supervision. Open to Counselor Education and Counseling Psychology Graduate Students only. Graduate students from other programs may enroll by special permission. 1 to 4 hours

CECP 6940 Vocational Development Theory An advanced course that involves the critical examination of existing theories of vocational development, the motivation to work and their application to the counseling therapeutic process. Research pertaining to vocational development and the world of work will be analyzed. Open to Counselor Education and Counseling Psychology Graduate Students only. Graduate students from other programs may enroll by special permission. Prerequisite: CECP 6100. 3 hours

CECP 6950 Doctoral Practicum in Counselor Education The doctoral practicum provides students with a supervised experience in advanced clinical counseling. It links counselor practice to teaching and supervision. Advanced counseling skills and counseling-related issues are addressed, including, but not limited to, diagnosis and treatment, multicultural issues, consultation, group counseling, assessment, and ethical and legal considerations. Open to Counselor Education and Counseling Psychology Graduate Students only. Graduate students from other programs may enroll by special permission. Prerequisite: Admission to the Counselor Education doctoral program or permission of instructor. 4 hours

CECP 6980 Readings in Counselor Education and Counseling Psychology Advanced students with good academic records may elect to pursue independently the study of a special topic. The topic chosen must be approved by the instructor involved and arrangements made with instructor's consent. Open to Counselor Education and Counseling Psychology Graduate Students only. Graduate students from other programs may enroll by special permission. May be selected more than once; total may not exceed four hours.
1 to 4 hours

CECP 6990 Dissertation Seminar Designed to orient students to the dissertation process. Students interested in beginning the dissertation process may take the course with the concurrence of their doctoral committee chairperson. Open to Counselor Education and Counseling Psychology Graduate Students only. Graduate students from other programs may enroll by special permission. Graded on a Credit/No Credit basis.
3 hours

CECP	7100	Independent Research	2 to 6 hours
CECP	7120	Professional Field Experience	1 to 12 hours
CECP	7250	Doctoral Research Seminar	2 to 6 hours
CECP	7300	Doctoral Dissertation	12 hours
CECP	7320	Doctoral Clinical Internship	1 to 4 hours
CECP	7350	Graduate Research	2 to 10 hours

Education

ED 5020 Curriculum Workshop Opportunity provided for teachers, supervisors, and administrators in selected school systems to develop programs of curriculum improvement. This may include short-term offerings to resolve a particular curricular problem, as well as long-range curriculum studies. A wide variety of resources is used for instructional purposes, including several specialists, library and laboratory facilities, field trips, audiovisual materials, and the like. Each offering of 5020, Curriculum Workshop, will be given an appropriate subtitle, which will be listed on the student's official transcript. Students may earn up to three hours of credit for any given subtitle. No more than six hours of 5020 may be applied toward a master's degree with advisor's approval. Open to upperclass and graduate students. 1 to 6 hours

ED 5750 Administration of Child Development Centers Presentation of trends in child care regulations and/or requirements, and knowledge of administrative materials and duties in providing optimum growth for young children. Includes management, planning, and organizing child development centers. Program requires a grade of "CB" or better. May repeat course one time only. Open to upperclass and graduate students. 3 hours

ED 5950 Experiential Education and Place-Based Learning This course is an invitation to the world of experiential education and place-based learning. In context of current policies and practices in American education, it explores the benefit of "learning by doing," and the potential of "schools without walls. This course is informed by philosophical conceptions, psychological perspectives, and best pedagogical practices, and is designed for aspiring educators and youth development professionals. Open to upperclass and graduate students. 3 hours

ED 5980 Selected Reading in Education Designed for highly qualified students who wish to study in depth some aspect of their field of specialization under a member of the departmental staff. Open to upperclass and graduate students. Prerequisite: Written consent of departmental advisor and instructor. 1 to 4 hours

ED 6000 Fundamentals of Measurement and Evaluation in Education This course is designed to develop understandings and competencies in educational measurement and evaluation. Emphasis is placed on the application of research techniques to evaluation, the interpretation of quantitative data in educational situations, and the application of basic evaluation models. Open to graduate students only. 3 hours

ED 6010 Introduction to Research in Educational Settings This course is designed to provide students with an overview of major research models that are used in educational settings, and to assist students in the development of their skills in interpreting and evaluating educational research studies, and to guide students in the design of an action research study. Open to graduate students only. Prerequisites: 21 credit hours of any graduate-level course (5000 and above), ES 6330 and ES 6340 (ES 6330 and ES 6340 may be taken concurrently). A minimum grade of "B" is required in all prerequisites. 3 hours

ED 6020 School Curriculum and Assessment This course is designed to assist students in their examination of curriculum development from the early 20th century to the present, to compare and contrast the perspectives of noted curriculum theorists and developers across this span of time, to learn the key elements of curriculum and assessment design, and to conduct an independent examination of the research literature associated with a curriculum and/or assessment issue they have identified in their professional role. Open to graduate students only. 3 hours

ED 6035 Risk and Resilience in Adolescent Development Examines the social contexts that promote or inhibit positive outcomes for youth development. Based on the prevention sciences, this course frames an examination of adolescent development in the biological, cognitive, and social domains. We will consider youth-serving settings and contexts that support adolescent and community development. Emphasis will be place on self-reflection, and translating theory to practice for the benefit of all students. Open to graduate students only. Restricted to masters in the Practice of Teaching: Foundations for Teaching. Prerequisite: Admission to graduate level initial teacher preparation program. 3 hours

ED 6040 Childhood Learning and Development: Theory to Practice This course provides an in depth exploration of the multiple influences on learning and development during the elementary school years (kindergarten through sixth grade, approximately ages 5-12). Contemporary developmental perspectives and learning theories will be applied to the cognitive, physical, psychological, and social aspects of living and learning that are relevant to supporting children during this time of life. Open to graduate students only. 3 hours

ED 6060 Early Childhood Workshop: Methods and Materials Focuses on developing an understanding of how children learn and how these principles relate to curriculum development and teaching practices. Current topics related to educating young children, including special needs learners, and relevant impacts on professional practice are also presented. The importance of play as a medium for learning will be emphasized throughout the course. Open to graduate students only. 3 hours

ED 6070 Research Methods in Early Childhood Education The purpose of this course is to acquaint the student with major types of research about young children, the steps involved in conducting such investigations, and the basic statistical concepts needed for understanding and designing research. Students will be required to present a research proposal. Open to graduate students only. Prerequisites: ED 6060 and permission of instructor. 3 hours

ED 6080 Seminar in Early Childhood Development This course is designed to provide in-depth exploration of particular facets of development in young children. This course provides students with opportunities to enhance knowledge of multiple theoretical approaches and to examine early childhood education from a historical perspective. Students will research and study current areas of emphasis in early childhood education and will focus on strategies for applying new knowledge in their own professional work. Open to graduate students only. 3 hours

ED 6110 Assessment in Early Childhood Inclusive Education This course presents pertinent theories of development and familiarizes students with techniques for observing young children both individually and in groups. Varied informal and formal assessment techniques will be presented and assignments will focus on assisting students to prioritize approaches for use in their work with young children. Strategies related to assessing and guiding learners with special needs between the ages of birth to five years will be emphasized. Open to graduate students only. 3 hours

ED 6130 Early Childhood Problems and the Teacher Deals with the concepts of discipline and questions of behavior. Teachers will acquire practical knowledge of research concerning children's social behavior and will review and apply systems for promoting prosocial behavior in their classrooms. Open to graduate students only. 3 hours

ED 6140 Engaging Diverse Families in Educational Settings Focuses on theoretical and practical aspects of strategies for working with parents and other caregivers. Enhanced knowledge of many challenges commonly facing today's families will enable professionals to work more effectively with family members to meet students' diverse needs. Formal and informal interactions with family members, as well as relevant applications to daily work with students and their families, will be emphasized. Open to graduate students only. 3 hours

ED 6210 The Early Adolescent Learner Theoretical background and research related to the intellectual, emotional, perceptual, social, and personality development are presented and explored. Emphasis is placed upon problems teachers face with early adolescent learners and appropriate strategies for helping these students realize their potential. Open to graduate students only. 3 hours

ED 6280 Curriculum Theory This course provides students with an in-depth examination of significant historical and philosophical influences on curriculum, as well as important theoretical orientations within the field. The purpose of the course is to enable students to engage in critical reflection from theoretical perspectives on the purposes and practices of schooling, and to bring this critical reflection to curriculum planning and evaluation, and to their own teaching practices. Open to graduate students only. 3 hours

ED 6360 Classroom Pedagogy: The Art and Science of Teaching This is an advanced course focused on pedagogy, the study of the art and science of teaching. Three aspects of pedagogy are central to this course: first, an examination of current and classical theories; this is followed by an exploration of ways each of the theories might be applied to classroom practice; and third, a study of the roles and relationship of assessment to pedagogy. Open to graduate students only. 3 hours

ED 6445 Secondary School Field Experience Field experience and seminar is a supervised field experience in middle and high school settings, and is associated with work in other program courses. Candidates will spend three full days in a middle or high school setting, and have a one-hour seminar once a week. Assignments from other program courses, those assigned by the mentor teacher, or the field supervisor form the basis of experience, with the goal of maximizing work with a variety of students, working in a variety of school settings, and activities and developing professional dispositions and skills. Seminar will be used to discuss similarities and differences in field sites, offer mentor teachers, and program instructors the opportunity to debrief and discuss field assignments. Graded on a Credit/No Credit basis. Open to graduate students only. Restricted to masters in the Practice of Teaching: Foundations for Teaching. Prerequisite: Admission to graduate level initial teacher preparation program. 4 hours

ED 6452 Secondary School Internship Supervised internship in a middle or high school setting. Builds off previous coursework, and provides the candidate with a full time experience in a secondary school. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Restricted to Master of Arts in Teaching: Science and Master of Arts in Teaching: Mathematics. Prerequisite: Admission to graduate level initial teacher preparation program and ED 6445. Corequisite: ED 6455
2 to 10 hours

ED 6455 Secondary School Internship Seminar Seminar will be directly related to the candidates' classroom experiences; it will further the candidates' practical understanding of research on effective teaching and effective schools, help to refine their techniques of effective classroom management and curriculum design, and enhances their sense of their own teaching style. The seminar will build the students' self-images as professionals as they are encouraged to take professional responsibility and to practice professional ethics. May be repeated for credit. Open to graduate students only. Restricted to Master of Arts in Teaching: Science and Master of Arts in Teaching: Mathematics. Prerequisite: Admission to graduate level initial teacher preparation program and ED 6445. Corequisite: ED 6452 1 hour

ED 6605 Mathematical Thinking Grades 6-12 This graduate level introductory secondary mathematics methods course is designed to strengthen mathematics content knowledge and build familiarity with the nature of student mathematical thinking in grades 6-12. The course develops models of effective instructional strategies designed to promote student learning and understanding of mathematics concepts and processes. This course focuses upon student mathematical thinking and teaching mathematics at the secondary school level. Open to graduate students only. Restricted to masters in the Practice of Teaching: Foundations for Teaching. 3 hours

ED 6615 Mathematics Curriculum Grades 6-12 This graduate level secondary mathematics methods course is designed to strengthen mathematics content knowledge and build familiarity with the nature of mathematics instruction and curriculum in grades 6-12. Focuses upon teaching mathematics and the mathematics curriculum at the secondary school level. This course considers curriculum issues and trends in secondary school mathematics focusing on methods and materials for effective teaching designed to promote student learning and understanding of mathematics concepts and processes. Open to graduate students only. Restricted to masters in the Practice of Teaching: Foundations for Teaching. 3 hours

ED 6700 Authority and Autonomy in Schooling This course examines definitions of and theories about authority and autonomy as well as the ways in which the two are interpreted and integrated in today's schools. Conceptual and clinical links between critical elements in schooling are analyzed, e.g. teacher/student relationships, teaching, learning, authority and autonomy. The diverse ways in which authority and autonomy combine to create and impact school and classroom environments are investigated. Open to graduate students only. 3 hours

ED 6760 Learning in Social Contexts This course examines current definitions and theories of the human cognition, that is, how humans think and learn in social context. Graduate students will engage in a detailed theoretical and clinical investigation of the ways in which professional teachers and others who are in teaching roles may foster cognitive development and learning in varied social contexts through the organizational, relational, social, emotional, curricular, pedagogical and assessment choices they make. Open to graduate students only. 3 hours

ED 6790 Capstone Research Project Completion of an advisor-approved research, application, and curriculum project related to the student's professional practice. Project must reflect a synthesis of skills and knowledge from concentration core course work, but at the same time represent a practical application product which can be completed in a one semester time frame. Students will identify and define the nature and scope of the capstone project prior to enrollment in this course, and enroll when completion of the project is planned. Open to graduate students only. Prerequisites: Completion of Master of Arts in the Practice of Teaching core courses, program concentration courses, and advisor permission. 3 hours

ED 6980 Resolving Educational Problems in the Schools With variable topics and variable credit, this course is offered for in-service teachers, supervisors, and administrators who come together to solve school problems which they are encountering in the field. Problem-solving techniques, theoretical and evidential support for solutions, and workshops will be applied to actual school or classroom situations. The topic of the course will be stated in the Schedule of Course Offerings. Each time the course is offered. Students may repeat this course, providing topics vary. No more than six hours of ED 6980 may be applied toward a graduate degree. Open to graduate students only.
1 to 6 hours

ED 7000 Master's Thesis Please refer to The Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. 6 hours

ED 7100 Independent Research Please refer to The Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. 2 to 6 hours

ED 7120 Professional Field Experience Please refer to The Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. 1 to 12 hours

Educational Leadership

EDLD 5890 Special Topics in Higher Education Various seminars exploring contemporary issues and emerging trends relevant to higher education and student affairs that are not offered in other courses. Topics will be designated by professors offering the seminars. Topics are announced in the Schedule of Course Offerings. May be repeated for credit. Open to upperclass and graduate students. This course is not intended to satisfy Program of Study requirements for degree-seeking Education Leadership (EDLD) HESA Masters, Certificate of Educational Leadership, or Doctoral students unless approved by faculty advisor. 1 to 3 hours.

EDLD 6000 Academy This course offers topics of interest to professionals in the field of educational leadership are examined in academies offered by the department. Open to graduate students only. May

be repeated. Graded on a Credit/No Credit basis. Total credits earned in academies applicable to degree programs not to exceed four hours.

1 to 4 hours

EDLD 6010 Workshop Seminar This course specializes in studies requiring integration of theory and practice with application of topics studied provided through site practices, (e.g., personnel evaluation, use of personnel assessment techniques, evaluation of curriculum and instruction). Open to graduate students only. May be repeated. Total credits not to exceed six hours. May not be applied to degree programs in educational leadership.

1 to 4 hours

EDLD 6020 Educational Leadership, Systems and Change This course is an introduction to educational leadership and leadership theory and practice. It provides the foundation for leadership in educational programs and institutions. Students will be required to demonstrate an understanding of transformational leadership and other leadership theories, effective communication and problem solving, motivation and decision-making, organizational change and renewal, and consensus building and conflict resolution. 3 hours

EDLD 6060 Advanced Systems Thinking This course will focus on steps that leaders take in developing and maintaining a learning organization. The emphasis will be on providing students the tools to develop productive long-term organizational relationships that contribute to worker satisfaction and increased worker commitment. Students will be required to establish a framework to develop team learning, and demonstrate an understanding of shared vision, laws of the fifth discipline, organizational learning disabilities, archetypal patterns, and the importance of systems thinking on mental moods. This course is restricted to students in the Ed.S. or Ph.D. educational leadership programs. 3 hours

EDLD 6090 Theories of Leadership Critical examination of principles of leadership theory construction; practice with and development of skills in evaluating contending theoretical perspectives regarding leadership. Prerequisites: Admission to the Educational Leadership doctoral program, and the completion of EDLD 6020 or equivalent. 3 hours

EDLD 6300 Data-Informed Decision-Making, Research and Evaluation This research course focuses on using data as a tool to enhance decision making process for school improvement emphasizing the simultaneous use and analysis of multiple data streams to guide leaders through curriculum alignment development and enhancement, supervision of instructions, and targeted professional developments for teachers, administrators, and support staff. 3 hours

EDLD 6510 Foundations of Student Affairs in Higher Education This course is designed to introduce students to: (a) the history and development of U.S. higher education; (b) history and philosophical foundation of the student affairs profession; (c) the college and university settings where the profession is practiced; (d) professional development and professional organizations in the field; and (e) the skills and competencies necessary to be a successful professional in student affairs. Open to graduate students only. Restricted to the following students: Educational Leadership Higher Education and Student Affairs Masters, Student Affairs in Higher Education Graduate Certificate program, Educational Leadership in Higher Education PhD. Others may register with instructor approval. 3 hours

EDLD 6530 The College Student This course examines the theoretical and research literature on contemporary college students from a variety of perspectives: demographic changes, patterns of growth and change during the college years, and the educational needs of diverse student groups. The impact of campus environments and various institutional contexts on students is explored, particularly focusing on the design of administrative and educational policy and practice. Open to graduate students only. Restricted to the following students: Educational Leadership Higher Education and Student Affairs Masters, Student Affairs in Higher Education Graduate Certificate program, Educational Leadership in Higher Education PhD. Others may register with instructor approval.

3 hours

EDLD 6545 Higher Education Environments and Administration This course examines leadership, management, and administrative practices in a variety of higher education environments. Topics may include: environment theory, campus ecology, campus culture, institutional types, organizational culture, ethical

issues in administrative practices including supervision, human resource management, budget and finance, facilities management, accessibility in higher education, issues of sustainability and technology. Open to graduate students only. Restricted to the following students: Educational Leadership Higher Education and Student Affairs Masters, Student Affairs in Higher Education Graduate Certificate program, Educational Leadership in Higher Education PhD. Others may register with instructor approval. Prerequisites: EDLD 6510 and EDLD 6530, or instructor approval. 3 hours

EDLD 6548 Assessment and Accountability in Higher Education and Student Affairs This course provides an introduction to assessment best practices in higher education and student affairs and an overview of accountability and professional standards in higher education and student affairs administration. Utilizing student development models of assessment, students will explore a variety of topics, techniques, and methods and apply their learning in real-world assessment cases. Topics addressed may include: accountability, accreditation, professional standards, outcomes based assessment, program evaluation, higher education databases, student learning outcomes, college impacts, benchmarking, needs assessment, and satisfaction surveys. Open to graduate students only. Restricted to the following students: Educational Leadership Higher Education and Student Affairs Masters, Student Affairs in Higher Education Graduate Certificate program, Educational Leadership in Higher Education PhD. Others may register with instructor approval. Prerequisites: EDLD 6510 and EDLD 6530, or instructor approval. 3 hours

EDLD 6550 Intervention Skills for Higher Education Professionals This theory-to-practice course teaches basic interpersonal skills necessary for successful higher education professionals, as well as individual, group, and organizational interventions; crisis management skills, referral skills; and approaches to handling difficult students, parents, colleagues, and others in the higher education environment. Open to graduate students only. Restricted to the following students: Educational Leadership Higher Education and Student Affairs Masters, Student Affairs in Higher Education Graduate Certificate program, Educational Leadership in Higher Education PhD. Others may register with instructor approval. 3 hours

EDLD 6570 Equity and Diversity in Higher Education This course is designed for students to develop an understanding of the individual and organizational issues of diversity and multiculturalism in U.S. higher education. A broad definition of diversity will be utilized in an effort to capture the range of populations served by higher education in this country. Through the integration of relevant information from history, law, interpersonal development, organizational development, and philosophy, this course will attempt to develop a complex, comprehensive understanding of equity and diversity. Open to graduate students only. Restricted to the following students: Educational Leadership Higher Education and Student Affairs Masters, Student Affairs in Higher Education Graduate Certificate program, Educational Leadership in Higher Education PhD. Others may register with instructor approval. 3 hours

EDLD 6580 Field Experience in Higher Education This course emphasizes practical experience in the student's area of specialized interest within higher education and student affairs. Student affairs administrative experiences are provided in selected supervised settings so that students can apply knowledge and skills acquired during pervious studies. Graded on a credit/no credit basis. Prerequisite: Advisor approval (EDLD 6020, EDLD 6510, and EDLD 6540 strongly recommended; students should be toward the end of their program.) Graded on a Credit/No Credit basis. 3 hours

EDLD 6590 Higher Education Law and Ethics This course will explore legal and ethical issues in higher education from multiple perspectives and points of view. Topics include those necessary for effective college leadership and administration. Historical and current legal issues affecting higher education will be discussed and monitored throughout this course. Ethical codes of conduct, integrity and commitment to ethical practice will be the foundation of the course discussions. Topics may include: ethical codes, professional standards of practice, federal/state/province laws that effect policy development, legal theories, issues impacting public and private college campuses, human resources, contracts, risk management, discrimination, constitutional provisions, case law, and other topics determined by instructor. Open to graduate students only. Restricted to the following students: Educational Leadership Higher Education and Student Affairs Masters, Student Affairs in Higher Education Graduate Certificate program, Educational Leadership in Higher Education PhD. Others may register with instructor approval. Prerequisite: Advisor approval. 3 hours

EDLD 6610 School Law & Ethics This course is a study of federal and state constitutions, legislation, regulatory guidelines, and court decisions as related to operation of educational institutions and organizations. Development of awareness and knowledge of legal and ethical parameters related to education. Students will be required to synthesize legal mandates and district responsibilities, apply knowledge of common law and contractual requirements, analyze constitutional provisions such as the separation of church and state, analyze special education litigation, and demonstrate an understanding of ethical issues related to school leadership and operations, and legal provisions for student participation, student and parent rights, torts, and liabilities. Open to graduate students only. 3 hours

EDLD 6620 School Business Management Development of knowledge and skill in management of business operations in schools: budget planning, budget management, standardization, accounting, inventory of equipment and supplies, use of standard budget forms, preparation of required reports. Students will be required to analyze fiscal and non-fiscal resources, plan for faculty and staff involvement in efficient budget planning, and demonstrate an understanding of managing fiscal and material assets, school accounting procedures, consensus building, and budget evaluation. Open to graduate students only. 3 hours

EDLD 6630 Personnel Administration This course is a systematic study of personnel administration tasks and functions as applied to education and training. Subtopics include recruitment, selection, orientation, supervision, appraisal, and development of personnel. Emphasis placed on understanding of standards for legal and valid personnel administration practices. Effects of style and behaviors on employee satisfaction and/or productivity are studied. 3 hours

EDLD 6640 Curriculum, Instruction and Assessment Leadership This course will provide an introduction to the principles of curriculum, instructional, and assessment alignment, design, implementation, and evaluation. There will be a strong focus on the foundations and history of curriculum inquiry and school reform. Students will examine strategies to increase learning opportunity through interpretation and communication of curricular outcomes, differentiated instruction, and classroom interventions. The course will also address issues related to the hidden curriculum, ideology, and culture as they affect the organization and administration of the scope and sequence of curricular offerings in educational institutions. Students will be required to design curriculum-based learning experiences aligned with standards, benchmarks, and assessments. In addition, students will be required to demonstrate knowledge of ideological critique, effective instructional strategies, the use of technology, and curriculum evaluation. Open to graduate students only. 3 hours

EDLD 6650 Principles and Practices of Adult Learning This online course is designed to help students discover how principles and theories of adult learning can be applied to create effective learning and training outcomes in formal and informal settings across multiple organizational contexts. Students will explore conditions, both internal (age, gender, race/ethnicity, life situation, experience, physical ability) and external (workplace or educational setting, distance, family obligations, other commitments) to the learner, which are known to affect learning outcomes. In addition, alternative methods, strategies, and technologies that increase instructional effectiveness for diverse students, in various learning situations and circumstances will be explored. Open to graduate students only. 3 hours

EDLD 6670 The Principalship This course provides a systematic study of the tasks and functions of the school principal, covering all areas of K-12 education. Emphasis is given to planning within the context of the community, planning and evaluation for program development and school improvement, and planning for supervision of personnel and programs. Students will be required to develop a vision statement and strategic plan based upon the principles of transformative leadership, appraise the duties of various building staff members, and demonstrate an understanding of scheduling, parent and community involvement, procedures that support a safe and positive school climate, motivational strategies for effective instructional leadership, and legal and contractual issues related to the principalship. Open to graduate students only. 3 hours

EDLD 6710 History and Foundation of Higher Education Leadership This course provides an introduction to the roles and functions of higher education from historical and contemporary perspectives, and is designed for advanced graduate students who aspire to serve in administrative and instructional capacities on college and university campuses. The knowledge from this course provides the foundation for leadership in educational programs and institutions. Students will be required to demonstrate an understanding not only of historical events

but also of the transformational leadership and other leadership theories, effective communication and problem solving, motivation and decision-making, organizational change to be an effective leader in higher education in the twenty-first century. Open to graduate students only. 3 hours

EDLD 6720 School Finance This course is an intensive instruction and discussion of political and economic value premises involved in the funding and financing of schools. Critical examination of alternative patterns for design of public funding formula and practices for funding public schools. Consideration of patterns of fiscal resource development other than public funds as a means of financing public or private education. 3 hours

EDLD 6730 Instructional Leadership and Supervision This course is a study of the principles and practices for the effective supervision of personnel. It will focus on the practices of developmental supervision, mentoring, professional development and renewal, and effective instruction. Students will be required to demonstrate understanding of effective instruction and how to develop a learning organization that supports instructional improvement, models of effective staff development and school renewal, and mentoring and clinical supervision that enhance growth and development. Special attention is given to differing perspectives on the supervision function within organizational contexts. 3 hours

EDLD 6740 School Community Relations and Cultural Competence This course provides a thorough examination of the school and its interaction with the community. Consideration will be given to internal and external "communities" and the relationships between and among the communities of the school as an organization. Role of communications in school-community relations and consideration of the balance of rights and responsibilities between schools and communities will also be addressed. Students will be required to conduct a needs assessment, establish a conflict resolution program and a crisis intervention plan, and demonstrate an understanding of public relations, communication, and evaluation of school-community relations. 3 hours

EDLD 6750 The Work of Teacher Leaders This course is designed to provide a hands-on experience in which K-12 certified teachers develop the leadership dispositions and practices teacher leaders use to help their schools develop a culture of professionalism and professional learning. The course focuses on teachers becoming leaders in their schools for continuous improvement through teacher teaming, professional development, evaluation, mentoring, and coaching. Students enrolled in this course will develop and apply strategies of team leadership and facilitation, personal and collegial performance assessment, professional practice demonstration and documentation, peer observation and feedback; reciprocal critique; professional growth plan (PGP) development, peer mentoring, peer coaching, and performance portfolio review. Additionally, students will examine principles and models of performance evaluation and develop strategies to work effectively with performance evaluation instruments and models available to them in the schools they serve. Open to graduate students only. 3 hours

EDLD 6760 How Schools Work: Organization, Finance and Legal Systems This course includes the study of the overall structure of how public schools are organized and administered, including laws and financial issues affecting teachers. Topics will include the study of legislation, regulatory guidelines, and court decisions as related to operation of educational programs concerning teachers. Topics will include teacher rights, classroom issues, speech and publications, searches Tenure Act, termination procedures and FERPA. In addition, the course will include school finance topics such as state aid, property taxes, cash flow, and budgetary impacts on student achievement. Open to graduate students only. 3 hours

EDLD 6791 Educational Leadership Masters Seminar This course provides an overview of the Master’s Degree program including instruction on how to create an electronic on-line portfolio. This will be accomplished through the use of classroom discussion, writings, presentations and on-line discussions. Students will gain understanding of effective educational leadership strategies as reflected in the standards set forth by their professional disciplines. 1 hour

EDLD 6792 Capstone Experience This course provides students a final opportunity to reflect upon merging educational leadership theory with best practices. This will be accomplished through the completion of field-based assignments, completion of a Performance-Driven Leadership Electronic Portfolio and interaction with leaders in educational or other institutions. This final course in the Performance-Driven Leadership Master of Arts program has as a major theme the development of transformational leaders who understand and have the will to

create effective relationships within their institutions. Prerequisites: Students must have completed all but one of their required classes in their Master of Arts in Educational Leadership prior to registering for EDLD 6792. 2 hours

EDLD 6793 Principal Internship I This course is the first of two courses devoted to providing students with a significant and sustained 240 hour internship in building level leadership within a K-12 school environment. The internship is jointly supervised by the WMU-EDLD faculty instructor of record and an on-site supervisor from the district hosting the intern. The purpose of the internship is to provide students opportunities to apply the theories, concepts, and practices studied through the course of the K-12 Education Leadership MA program in an actual school setting. The internship may be adapted to accommodate working students, but students must log the completion of 240 hours of site-based internship experience over the combination of the EDLD 6793 and EDLD 6794 courses. This course is to be taken near the end of the MA in Educational Leadership: K-12 Principal concentration program, with the goal of completing all other required courses except EDLD 6794 (Principal Internship I). Students are encouraged to take EDLD 6670 (The Principalship) during the same semester or immediately preceding this course. Open to graduate students only. Prerequisite: Admission to the MA in Educational Leadership: K-12 Principal concentration (ELPM) 3 hours

EDLD 6794 Principal Internship II This course is the second of two courses devoted to providing students with a significant and sustained 240 hour internship in building level leadership within a K-12 school environment. The internship is jointly supervised by the WMU-EDLD faculty instructor of record and an on-site supervisor from the district hosting the intern. The purpose of the internship is to provide students opportunities to apply the theories, concepts, and practices studied through the course of the K-12 Education Leadership MA program in an actual school setting. The internship may be adapted to accommodate working students, but students must log the completion of 240 hours of site-based internship experience over the combination of the EDLD 6793 and EDLD 6794 courses. This course is to be taken as the last course within the MA in Educational Leadership: K-12 Principal concentration program, with the goal of completing all other required courses prior to taking this class. Open to graduate students only. Prerequisite: Admission to the MA in Educational Leadership: K-12 Principal concentration (ELPM) and completion of the EDLD 6793 class. 2 hours

EDLD 6800 The Superintendency This course examines the line and staff roles involved in the superintendency with emphasis on the role of the superintendent of schools as the chief executive officer in school and school-related organizations. Prerequisite: Master of Arts in Educational Leadership or equivalent master's degree program, or permission of instructor. 3 hours

EDLD 6810 Policy Development This course includes examination of policy issues, purposes, functions, methods, and approaches for policy development. Critical review of development of policies for educational institutions. Prerequisites: Master of Arts in Educational Leadership or equivalent master's degree program, or permission of instructor. 3 hours

EDLD 6850 Facilities and Technology Systems for Learning This course will provide a study in evaluation, design, and planning of the present and future faculties and equipment requirements for the school organization. Attention will be given to the educational program and stated philosophy of schools and to the present and future needs of the student and the learning environment respective to facilities development. Integration of technology in the planning and design of facilities will be addressed as well as the human physiological and psychological needs. Current state and Federal regulations will be reviewed as they relate to new facilities and to remodeling of current facilities. Open to graduate students only. 3 hours

EDLD 6861 Doctoral Studies Seminar I This course is a problem-posing or problem-identification seminar, this course is intended to be taken during the first year of a student's doctoral program, with two primary goals. First, students will examine key issues facing education institutions today, both within the broader context and within their own organizations. Second, students are to be exposed to various research studies and associated methodologies related to their general areas of interests. This course is restricted to students in the Ed.S. or Ph.D. in Educational Leadership. 3 hours

EDLD 6862 Doctoral Studies Seminar II This course is offered as a combined seminar/field-work experience class this course is to be taken following EDLD 6861. The overall goal is to build upon the

problem-posing focus students received within the seminar and further immerse them into identified research topics as part of a problem-development experience. Students will complete structured interviews and other internship-type experiences with various professionals in the field, as well as more intensive readings in these areas.
Prerequisite: EDLD 6861 3 hours

EDLD 6872 Governance and Organization in Higher Education This course will examine key administrative structures with various types of higher education institutions. This will include statewide systems, university level, departmental level, and unit level governance. We will analyze the impact of social, political, economic, technological and legal environments on such structures, and the challenges faced by higher education leaders within these areas. The course will also delve into theories of leadership that occur on each level. Open to graduate students only. Prerequisite: EDLD 6710 or instructor approval. 3 hours

EDLD 6875 Higher Education Finance This course will provide an overview of the economics and financing of post-secondary education in the United States. It will include public policy as it relates to the funding of higher education at the federal and state level. The course will review trends in establishing tuition and fees, and review the basic elements of budgeting and fiscal management at the institutional level. Open to graduate students only. Prerequisite: EDLD 6710 or instructor approval. 3 hours

EDLD 6880 Higher Education and the New Technological Frontier This course examines how the evolving technological world is impacting higher education institutions, including its effect on curriculum, teaching, and learning, as well as governance and leadership. Reviews growing roles of virtual universities, extended university programs, and various types of distance learning. 3 hours

EDLD 6890 Special Topics in Higher Education Seminar Various seminars focused on current topics relevant to higher education and/or adult learning leadership issues. Topics will be designated by professors offering the seminars. May be repeated for credit. Open to graduate students only. 1 to 4 hours

EDLD 6899 Special Topics Seminar in Educational Leadership Special topics seminars focus on current and timely issues related to Educational Leadership (except higher education which has its own special topics course). Faculty teaching each course will designate the specific topic or issue to be addressed. Each seminar course will identify, analyze, critique and apply the primary principles and practices related to the particular topic in the rapidly changing discipline of educational leadership. May be repeated for credit. Open to graduate students only. 1 to 4 hours

EDLD 6950 Dissertation Seminar This seminar is designed for the doctoral student who has identified the topic for his/her dissertation research and will focus on the production and evaluation of proposals for the doctoral dissertation. Open to graduate students only. Prerequisites: Successful completion of departmental core comprehensive examination, EDLD 6861, and EDLD 6862; simultaneous registration in one hour of EDLD 7300; and approval of advisor. 3 hours

EDLD 6980 Readings in Educational Leadership This course is directed individual study of topics or bodies of knowledge not otherwise treated in department courses. A maximum of four hours earned in EDLD 6980 is applicable on degree programs. Prerequisite: Permission of advisor. 1-4 hours

EDLD	7100	Independent Research	2-6 hours
EDLD	7120	Professional Field Experience	2-12 hr.
EDLD	7200	Specialist Project	1-6 hours
EDLD	7250	Doctoral Research Seminar	2-6 hours
EDLD	7300	Doctoral Dissertation	1-15 hours

Educational Studies

ES 5850 Social Justice and Community Organizing This course is a critical examination of the role of social justice and community organizing in education and society. It is informed by philosophical conceptions, literary perspectives, and best pedagogical practices, and is designed for youth development professionals and aspiring educators. This course will enjoin community partners that provide powerful examples of

how individuals and organizations can address social inequities and promote human flourishing. Open to upperclass and graduate students. 3 hours

ES 6030 Social and Philosophical Foundations This course centers on the development of American educational policy and practice in its broad social-historical setting. Consideration is given to historical, economic, social, and philosophical factors which influence educational thought and practice. The need for historical perspective and sound analysis of conflicting points of view is emphasized in the study of current educational problems and consideration of approaches to present issues. Open to graduate students only. 3 hours

ES 6150 Education from a Socio-Cultural Perspective This is a graduate-level introduction to relationships between schooling in the United States and the wider social, political, and economic milieu. It focuses on educational issues in a democratic and culturally diverse society, how educational policies and practices are affected by historical, political, and economic factors, and how schooling affects democratic, social, economic, and political relationships, as well as sustainable human-Earth relationships, with particular attention to economically disadvantaged persons and communities. Restricted to W.K. Woodrow Wilson Teaching Fellows only. Open to graduate students only. Prerequisite: Admission to graduate level initial teacher preparation program or instructor approval. Corequisites; ED 6035 or ED 6605 or SCI 6205. 3 hours

ES 6290 Culture and Schooling The purpose of this course is for students to examine culture as a system for organizing thought and perception and to explore its various influences on the content and methods of schooling in the United States. Particular attention is given to cultural dissonance among students, teacher, and text, and to culturally grounded ways of knowing that emerge from schooling experiences. 3 hours

ES 6300 History of Education in the United States Development of educational thought, practice, and social change in the United States is the focus of this course. This includes a critical examination of the development of the American commitment to commonality in education: The changing relationship between school and community since 1800; the rise of the professional educator; and the shift and progress toward educational goals. Implications of historical background for present problems in education with emphasis on the revision of previously held conventional thinking about schooling in America will be addressed. 3 hours

ES 6310 Global Perspectives on Educational Reform This course examines policies and practices of educational reform around the world, as well as the ways in which the two are interpreted and integrated in today's schools. The systemic policies and practices of teacher education in high-achieving countries are analyzed to show how they are dealing with teacher quality, equity, and the changing global society. By exploring the issue of educational reform from a multinational perspective, students will develop their own new and enhanced conceptions of the best and most appropriate agenda for school reform in the United States. Open to graduate students only. 3 hours

ES 6330 Education and Human Flourishing This course centers on the idea that education is conceived in relation to visions of human flourishing; we educate to make lives better. The long history of education reveals many interpretations of what human flourishing entails. Shifting ideas about human nature and diversity - involving social categorization, stereotyping, and cultural bias - play an important role in our understanding what kinds of flourishing, and education, are possible and desirable. As such, this course provides historical context for thinking about today's leading ideas regarding the nature and diverse forms of human flourishing in relation to the role and purposed of education in our society. Open to graduate students only. 3 hours

ES 6340 Culture and Politics of Educational Institutions Divergent notions of human well-being and flourishing have long generated contentious debate as to the nature, structure, and form of educational institutions. This course explores how educational aims and practices within the context of educational institutions relate to wider patterns of belief, value, and controversy. Explicit and implicit assumptions about school and society are examined, with a particular focus on social justice and the sustainability of the forms of flourishing that educational institutions promote. Open to graduate students only. 3 hours

ES 6730 Class, Ethnicity, and Gender in Education This course centers on the significance of social class, race, gender, and ethnicity in educational practice and outcomes. Social identity and cultural diversity are explored in relation to classroom communication patterns, teacher expectations, and student achievement.

Patterns of biases and discrimination will be examined, as well as current issues, challenges, and opportunities of education with respect to student diversity. 3 hours

ES 6750 Multicultural Education This course provides a foundation to examine the major ethnic groups that make up school populations in the U.S. Special attention will be given to the subject of prejudice with an analysis of how stereotypes about ethnic groups and women can be eliminated. The origin of racist theories will be studied. Strategies for resolving cross-cultural conflicts will be stressed. 3 hours

Educational Technology

EDT 5030 Special Topics for Instructional Technology Applications This course is designed to permit students to update knowledge and skills in current instructional technology and apply this learning for use in instructional programs. Such applications include methods of using computers, and digital technologies, video and audiovisual technologies for a variety of instructional and communication tasks. Participation in the course presumes subject matter knowledge and basic computer literacy on the part of the students. Final course outcomes include application of material to the classroom/workplace. These different instructional technology offerings bring students with specific needs, instructors with unique expertise together for intensive and highly-focused learning experiences. May be repeated for credit. Open to upperclass and graduate students. 1 to 3 hours

EDT 5410 Foundations of Instructional Technology This course introduces foundational theories, ideas and history that are critical for the development of expertise in the field of instruction technology. Students will engage with this content in a variety of ways and will be given opportunities to synthesize and apply what they learn in ways that are meaningful and productive for their professional interests. This course also introduces students to a variety of computer-base tools and supports their development of instructional strategies that utilize these tools. Many of the tools presented in this course will be used in the delivery of the course. Open to upperclass and graduate students. 3 hours

EDT 5420 Teaching with Technology: Design and Development for Learning This course focuses on the design, development, and integration of educational technology methods for teaching, learning, and personal productivity. This course provides an overview of learning theory and instructional design principles related to the development of educational technology programs. A review of the theory of individual learning styles and application of technology will be presented. Upon completion of this course, students will possess knowledge in the planning, delivery, and evaluation of instruction through the implementation of various technologies. Students will design and develop educational technology products (computer based, hypermedia/multimedia, internet, etc.) based upon learning theory and instructional design principles. Open to upperclass and graduate students. 3 hours

EDT 5500 Digital Photography Intended to sharpen visual perception while improving technical skills, this workshop course emphasizes the photographic process as a creative and expressive medium of visual communication. Using digital photographic equipment, students are expected to produce new photographic images, edit the images using common computer editing tools, and publish the images using common desktop publishing, desktop presentation, and multimedia software for group critique. Each student will be required to find access to appropriate photographic/multimedia and software. May be repeated up to a total of six credits. Open to upperclass and graduate students. 1 to 3 hours

EDT 6410 Instructional Technology for School Leaders This course would explore the effective use of a variety of advanced technology and multi-media applications and how these can assist with curricular objectives and improvement of student achievement. This class will develop significant projects which will integrate technology into the classroom and building environment and support teaching and learning. Open to graduate students only. 3 hours

EDT 6420 Instructional Design This course focuses students on learning a systematic approach to the design and development of instructional interventions, strategies and environments. This course provides an overview of innovative instructional design methods and principles that are supported by current learning theories. Students will have opportunities to apply their learning through applied course projects in which

students will practice all aspects of instructional design including analysis, design, development, implementation and evaluation. Instructional design that integrates learning and communication technologies will be featured. Open to graduate students only. 3 hours

EDT 6430 Fundamentals of Online Learning This course focuses on the history, purposes, theories and methods behind the creation and implementation of online learning tools and environments. This course grounds an examination of online learning in learning and instructional theory and actual cases. Students are helped to link content to their own practice through the examination of actual online learning tools and systems. Upon completion of this course, students will possess knowledge in making strategic decisions regarding the planning, delivery, and evaluation of online instruction. Students will develop a proposal for the design of an online learning solution. Open to graduate students only. 3 hours

EDT 6440 Instructional Technology Tools and Development This course provides a detailed review of the latest technological advancements and their potential impact on learning organizations. Students will receive information on the wide array of media types and methods for transmitting them. Students will also be exposed to and experience a variety of data, video, and audio technologies. This course will include an introduction to management issues , including equipment and costs necessary to implement these systems and the impact these technologies have on the learning system. Students will acquire skills that will enable them to select and use both newly emerging and future instructional technologies. Open to graduate students only. 3 hours

EDT 6450 Technical and Operational Issues This course covers management issues related to the selection, purchase, installation, and maintenance of software programs for computers and computer network systems. Students will learn how to conduct a technology needs assessment. Using information gained from the needs assessment, students will also learn methods of planning for, implementing, and maintaining technology across an entire system. A detailed review of networking items including hardware, software, Internet connectivity, and troubleshooting issues will also be addressed. Open to graduate students only. 3 hours

EDT 6460 Special Issues in Instructional Technology A variety of state-of-the-art topics are covered in different semesters. Students may be immersed in deep theoretical study or trained in high-level competencies that will be of use and of interest to technology practitioners and leaders. Recent topics have included Creating Online Courses, Digital Video and Animation, Google Apps and Project Based Learning. May be repeated for credit. Open to graduate students only. 1 to 3 hours

EDT 6480 Professional Development in Technology This course will provide students with necessary skills to plan, present and implement professional development activities. The course focuses on technology rich teaching strategies to promote learning, along with gaining skills in designing and assessing instruction for a wide variety of audiences. This course is designed to assist students to grow personally and professionally. Open to graduate students only. 3 hours

EDT 6490 Instructional Technology Leadership This course focuses on the development of creative leadership skills for technology planning and administration. Steps involved with planning, implementing, maintaining, and evaluating technology integration will be addressed. Specific management issues include creating technology plans and managing and budgeting technology finances. Policy and procedure issues such as staffing, scheduling, and technology security will also be discussed. Students will be able to make informed decisions about technology selection, purchase, and implementation based upon the organization technology goals and financial resources. Open to graduate students only. 3 hours

EDT 7000 Master's Thesis Please refer to The Graduate College section for course descriptions. Open to graduate students only. Graded on a Credit/No Credit basis. May be repeated for credit. Prerequisite: Department approval. 6 hours

EDT 7100 Independent Research Please refer to The Graduate College section for course descriptions. Open to graduate students only. Graded on a Credit/No Credit basis. May be repeated for credit. Prerequisite: Department approval. 2 to 6 hours

Evaluation, Measurement and Research

EMR 5400 Fundamentals of Evaluation, Measurement, and Research This course is designed to develop skills in the fundamentals of research design and the uses and interpretations of research findings. Each student is expected to prepare a review of literature and a design for a research study. Open to upperclass and graduate students. 3 hours

EMR 5410 Introduction to Educational Measurement and Assessment This course provides the student with an examination of the basic concepts, principles, and tools used in the construction and use of educational tests, for the evaluation of classroom learning outcomes. Many aspects of testing will be presented: including writing and using educational objectives; constructing tests; evaluating the psychometric properties of a test reliability and validity; interpretation of test scores norms, scales, and grades; and some of the current controversies in testing. Class discussions will additionally include standardized testing in the areas such as achievement, intelligence, and specific aptitudes, and general teacher teaching evaluation. Open to upperclass and graduate students. Prerequisite: EMR 5400 with a grade of "B" or better, or instructor approval. 3 hours

EMR 6410 Fundamentals of Measurement in the Behavioral Sciences The criteria by which instruments are selected and developed serve as the central focus of this course. Information regarding the theory and practice of measurement and testing are applied across educational, social, and behavioral settings. Students are expected critically to evaluate instrumentation as well as to develop a plan for the creation of an instrument. Open to graduate students only. Prerequisite: EMR 6450 and (EMR 5400 or EMR 6400). 3 hours

EMR 6420 Evaluation I: Theory, Methods, and Program Evaluation Emphasis is on evaluation theory and methods and how these apply to the evaluation of programs. Skills addressed include effective verbal and written communication as well as critical thinking. Students will apply their knowledge to the design of program evaluations. Open to graduate students only. Prerequisite: EMR 5400 3 hours

EMR 6430 Evaluation II: Evaluating Products, Personnel and Policy This course is an advanced graduate seminar designed to provide an overview of theory and practice related to evaluating products, personnel, and policy. Participants will learn how to design and conduct evaluations of products, personnel, and policy. The course will require that participants design evaluations of products, personnel, and policies. Open to graduate students only. Prerequisite: EMR 5400 3 hours

EMR 6450 Data Analytics I: Designed Studies This class focuses on the principles of research design and data analysis. Primary topics include: descriptive statistics, t-tests, chi-square, correlation, analysis of variance, post-hoc comparisons, non-parametric statistics, and statistical power. All topics will be taught from an applied perspective. Students will learn how to use statistical software for analyses. Open to graduate students only. Prerequisite: EMR 5400 (may be taken concurrently) or instructor approval. 3 hours

EMR 6480 Qualitative Research Methods A study of the philosophical and methodological foundations of naturalistic research in education. Students will develop skills in planning and conducting naturalistic studies in education. Standards for judging naturalistic inquiry will be studied and applied to selected naturalistic study reports. Open to graduate students only. Prerequisite: EMR 5400 3 hours

EMR 6490 The Nature of Science and Scientific Inquiry This course is designed for graduate students engaged or preparing to engage in social and educational research. As an introduction to philosophy of science, it centers on conceptual questions concerning the nature and scientific investigation of the world. The questions are both metaphysical, concerned with the most general account of what sorts of things science aims to represent, and epistemological, concerned with the justification of belief. The course examines debates surrounding the question of what distinguishes science and scientific reasoning from other forms of thought and sources of belief. Particular attention will focus on the rise of historicist, postpositivist conceptions of scientific inquiry and, in light of these, on questions about objectivity, relativism, and value neutrality in scientific research, particularly in social sciences. The course will conclude with examination of the status, aims, social context, and value commitments of educational research as a form of scientific inquiry. Open to graduate students only. 3 hours

EMR 6500 Survey Research The principles and practices of survey research design and analysis are the focus of this course. Critical examination is made of the appropriate uses of survey research in response to educational issues. Students are expected to develop instrumentation used in survey research, to engage in the design of a survey research study in a field setting, and to critique survey studies and findings. Open to graduate students only. Prerequisites: EMR 5400 and EMR 6450. 3 hours

EMR 6510 Advanced Applications of Measurement Methods Intensive study of applications of educational measurement theory and methodology to specific needs for instrumentation in education. Students will engage in development, validation, and application of new instruments for collecting educationally important data. Open to graduate students only. Prerequisites: (EMR 5400 or EMR 6400), EMR 6410 and EMR 6550. 3 hours

EMR 6520 Evaluation Practicum Planned field applications of principles of program evaluation under the guidance of a qualified instructor. The class meets weekly as a seminar to discuss evaluation progress and issues. Open to graduate students only. Prerequisites: EMR 5400 and (EMR 6420 or EMR 6430). 3 hours

EMR 6550 Experimental and Quasi-experimental Design for Applied Research and Evaluation With an emphasis on casual inference and various types on validity, this course consists of systematically studying the principles for designing experimental, quasi-experimental and, to a lesser extent, non-experimental investigations for applied research and evaluation. Students also will be introduced to design sensitivity/statistical power for individual-level and group-level studies. Open to graduate students only. Prerequisite: EMR 6450 and EMR 6650, or instructor approval. (EMR 6650 may be taken concurrently.) 3 hours

EMR 6580 Qualitative Research Practicum The focus of this course is on carrying out the qualitative study designed in EMR 648. Topics of discussion include forms of qualitative data, grounded theory, identifying patterns in data, codes and coding, data interpretation, data presentation, and use of the computer to facilitate data collection and analysis. The emphasis of the course is on the implementation, analysis, interpretation, and writing of a qualitative research study. The final product is a research paper based on the qualitative study conducted in the class. At the heart of EMR 6580 is the practicum experience: Each student will carry out a small-scale research project. If we combine EMR 6480 and EMR 6580, the goal of the sequence is for students to experience the full cycle of research, from the identification and narrowing of a problem to the final rendering and reporting of results. Open to graduate students only. Prerequisite: (EMR 5400 or EMR 6400) and EMR 6480. 3 hours

EMR 6590 Contemporary Trends in Research This course is intended to develop awareness of current inquiries in the areas of evaluation, measurement, and research methodology. This is an advanced core course in the master's degree program. Each year the instructor will examine the annual meeting programs of the American Educational Research Association, the American Evaluation Association, and the National Council on Measurement in Education to identify areas of activity in evaluation, measurement, and research methodology. Students will read and critique selected papers from those meeting, identify issues in need of further research and development, and prepare proposals for addressing those issues. Open to graduate students only. Prerequisite: EMR 5400 or EMR 6400. 3 hours

EMR 6600 Advanced Seminar in Research This is a seminar course focusing on theoretical and methodological research methods and techniques utilized when conducting meta-analyses in the educational and social sciences. This course will cover topics relevant to planning and carrying out a meta-analysis. Open to graduate students only. Prerequisite: EMR 6550 or 6580 or permission of instructor. 3 hours

EMR 6610 Advanced Seminar in Measurement A seminar for students seeking advanced theoretical understanding of the principles of measurement. Theories of instrument construction beyond classical test theory (e.g., item response theory and generalizability theory) are applied to instruments relevant to education. Open to graduate students only. Prerequisite: (EMR 5400 or EMR 6400), EMR 6410, EMR 6510, and EMR 6550; or permission of instructor. 3 hours

EMR 6620 Advanced Seminar in Evaluation An advanced seminar for the study of theoretical and practical problems in evaluation. Issues of ethics and quality in evaluation are addressed. Open to graduate students

only. Prerequisite: (EMR 5400 or EMR 6400) and (EMR 6420 or EMR 6430) and EMR 6520, or permission of instructor. 3 hours

EMR 6650 Data Analytics II: Correlation Studies This course presents a continuation in the study of the principles of data analytics appropriate for correlation and related research designs. The general linear model serves as the over-riding analytical model. Advanced skills in design and analysis are developed through examination of design issues common in educational, social science and health science settings. Design tools covered will include experimental, quasi-experimental, cross-sectional, and correlational designs. Analytics topics covered will include ANOVA for unbalanced designs, ANCOVA, stratified analysis, multiple and logistic regression. All topics will be taught from an applied perspective that will include statistical computing and interpretation of statistical output. Some prior skills in the use of computer programs for data analysis are required. Open to graduate students only. Prerequisite: EMR 6450 or instructor approval. 3 hours

EMR 6680 Qualitative Research: Computer Assisted Data Analysis This graduate course is an invitation to the world of computer software programs that support data analysis in qualitative research. It introduces the "tools" of the trade as well as strategies to promote rigor and efficiency in qualitative analysis. This course is designed for advanced graduate students experienced in qualitative research methods in the social and behavioral sciences. Open to graduate students only. Prerequisite: EMR 6480 3 hours

EMR 6710 Structural Equation Modeling This is an introduction course in structural modeling with latent variables (SEM). Currently SEM represents an extremely large array of topics, methodologies and models that are applicable to almost all aspects of social, behavioral, health, educational, economic research. As such, there are many possible topics and together they greatly exceed what can be effectively covered within the scope of a single course. Some of the basic topics will include but will not be limited to confirmatory factor models, path models, latent class models, structural regression models and invariance studies. Open to graduate students only. Prerequisites: EMR 6650 and EMR 6510, with a grade of "B" or higher; or permission of instructor. 3 hours

EMR 6750 Applied Multivariate Statistics A continuation of the study of the principles of research design and data analysis techniques concentrating on the multivariate general linear model as an over-riding analytical model. Skills in the use of computer programs for data analysis are required. Design topics covered will include experimental, quasi-experimental cross-sectional, and correlational designs. Analytic topics covered will include Hotelling's T2, MANOVA, MANCOVA, logistic and non-linear regression, principal component analysis, canonical correlation, discriminate function analysis, factor analysis, cluster analysis. All topics will be taught from an applied perspective which will include statistical computing using a PC environment and interpretation of statistical output. Open to graduate students only. Prerequisite: (EMR 5400 or EMR 6400), EMR 6450, EMR 6550, and EMR 6650. 3 hours

EMR 6770 Ethnographic Research Methods This is an advance seminar in ethnographic inquiry applicable to school and community settings. The course will explore advanced topics in design, analysis, implementation, and articulation of findings related to qualitative research. Open to graduate students only. Prerequisite: EMR 6580 3 hours

EMR 6790 Capstone Portfolio Project This course is intended to be the opportunity for master's degree students in the Evaluation, Measurement, and Research program to demonstrate mastery of evaluation, measurement, and research methodology at the master's level. In addition to evidence of mastery of each master's level course, the student will develop for presentation a project where evaluation, measurement, and research methods are used. The project is supervised by one faculty member and is then presented to a three-faculty member panel for final grading. Portfolios must be submitted for grading three months prior to an anticipated graduation date. Open to graduate students only. Prerequisite: Completion of all M.A. in EMR course work. 3 hours

EMR 6970 Special Topics in EMR This is a variable topics course designed to provide instructors and students with a mechanism to explore current topics in evaluation, measurement, and research. Open to graduate students only. Prerequisite: EMR 5400 or EMR 6400, and permission of instructor. 1 to 6 hours

EMR 7100 Independent Research 2 to 6 hours

EMR 7120 Professional Field Experience Professional Field Experience allows a student to gain practical evaluation, measurement, or research experiences under the supervision of a qualified instructor. For every 3 credit hours of field experience registered, 120 hours of field experience will be completed. Students must complete an Application for Permission to Elect form and secure their advisor's signature prior to registration. Prerequisite: Completion of the Doctoral Core requirements. 3 to 6 hours

EMR 7300 Doctoral Dissertation 15 hours

Family and Consumer Sciences

FCS 5100 Teaching Sexuality Education Teaching Sexuality Education is designed as a teaching methods course to prepare family life educators, secondary education instructors, and other human service professionals for the implementation of sexuality education in school-based curricula and/or in a variety of community settings. Open to upperclass and graduate students. 3 hours

FCS 5110 Kinship Care Family Members: Strengths and Challenges Focuses on highlighting varying experiences and realities for multi-generational kinship care family members, including adult caregivers, the children in their care, and children's biological parents. Common challenges will be presented, along with strategies for assisting family members in resiliency building and accessing available resources. Socio-cultural differences, both within the United States and internationally, will be examined. Topics addressed in this course may vary to some extent each semester, depending on students' professional experiences, needs, and interests. Open to upperclass and graduate students. 3 hours

FCS 5120 Educational Systems and Kinship Care Families Explores the interface between educational systems and kinship care families. Topics will include the history of family engagement in U.S. schools, current practices in American schools, educational risks for children living in poor families, models and strategies of family engagement and common school-related experiences for kinship care family members. Students will focus on strategies for reducing educational challenges for both kinship caregivers and children living in kinship care families. Open to upperclass and graduate students. 1 hour

FCS 5130 Health Care and Kinship Care Families Focuses on health care systems in the United States and their interfaces with kinship care family members. Topics will include the evolution of health care in the United States, current status of health care systems within the U.S., common health challenges for kinship care family members and effective responses and programming. Open to upperclass and graduate students. 1 hour

FCS 5140 Economic Realities and Kinship Care Families Focuses on theories of family economics as well as financial challenges and realities for kinship care family members. Topics will include an overview of family economic theory, poverty in the United States, financial information and challenges for kinship care families, and an analysis of existing and needed services and programs. Open to upperclass and graduate students. 1 hour

FCS 5220 Topics in Family and Consumer Sciences A study of the current issues impacting the areas of study in Family and Consumer Sciences: Dietetics, human nutrition, family life education, home economics education, textile and apparel technology or career and technical education. Prerequisite: Seniors and graduate students only. 1 to 3 hours

FCS 5240 Socio-Psychological Aspects of Dress Study of dress and adornment in human interaction. Considers the body in social and cultural contexts, dress in various stages of human development and in individual and group behavior. Uses an interdisciplinary approach to dress-related research. Open to upperclass and graduate students. 3 hours

FCS 5250 The Adolescent in Development The study of individuals between 10 and 22 years of age, the changes that characterize these years, and the role of the family and school in supporting and enhancing development. Open To upperclass and graduate students. 3 hours

FCS 5340 Consumer Behavior in the Fashion Environment This course is designed to give students an overview of the important topics in consumer behavior research and practice as they relate to the fashion/retail environment. Restricted to Family and Consumer Science masters. 3 hours

FCS 5350 Communication Skills for Working with Families across the Lifespan Laboratory study designed to develop interpersonal helping skills in delivery of family life education. The location of family life education within the range of helping professions is examined. Open to upperclass and graduate students. Prerequisite: Graduate student or undergraduate with 100+ hours. 3 hours

FCS 5440 Global Aspects of the Fashion Industry The course addresses issues facing fashion-related businesses in global markets, including ethical, economic, political, socio-cultural and professional aspects of working in globally connected industry. Restricted to Family and Consumer Science masters. 3 hours

FCS 5500 Raising Children in Contemporary Society This course examines contemporary societal factors that influence children and parenting. Prerequisite: Graduate student or undergraduate with 100+ hours. 3 hours

FCS 5510 Families and Hospitalization I This course introduces students to aspects of hospital and medical interventions as they affect children and their families, and the role of child life specialists in making health care experiences positive ones. Open to upperclass and graduate students. 3 hours

FCS 5520 Families and Hospitalization II This course builds on theories and skills learned in Families and Hospitalization I, with emphasis on interventions and techniques used regularly by child life specialists. In addition, content will focus on professionalism, the process of certification as a child life specialist, and the field of child life in preparation for a successful practicum/internship. Open to upperclass and graduate students. Prerequisite: FCS 5510 with a grade of "B" or better. 3 hours

FCS 5530 Advanced Child Life Practice This course addresses advanced practices in child life, such as administering a child life program, facilitating support groups, and pain management strategies used in pediatrics. Open to upperclass and graduate students. Prerequisite: FCS 5510 with a grade of "B" or better. 3 hours

FCS 5680 Gender, Culture, and Families Study of the implications of gender and cultural orientation for family, work, social interactions and therapeutic interventions. Includes an examination of sexism and racism in the media, advertising, educational institutions, and social policies. Open to upperclass and graduate students. 3 hours

FCS 5750 Administration of Child Development Centers Examination of day care and preschool regulations and/or requirements and knowledge of administrative materials and duties in providing optimum growth for young children. Includes management, planning, and organizing child development centers. Open to upperclass and graduate students. 3 hours

FCS 5900 Project/Problems in Family and Consumer Sciences Directed independent project in specialized curricula within Family and Consumer Sciences. Open to upperclass and graduate students. Prerequisite: Departmental approval. 1 - 6 hours

FCS 5980 Independent Study in Family and Consumer Sciences Directed independent advanced study in subject matter area not otherwise treated in departmental courses. Open to upperclass and graduate students. Prerequisite: Departmental approval required prior to enrollment. 1 - 6 hours

FCS 6000 Clothing Techniques Meets the needs of the advanced student in clothing construction techniques. Open to graduate students only. 2 hours

FCS 6010 Basic Research Methods and Design This course introduces students to applied methods and basic research design. It is appropriate for producers of research and for students who plan to emphasize practice. Emphasis throughout is on concrete examples from applied settings appropriate to Family and Consumer Sciences and Career and Technical Education. Open to graduate students only. Prerequisite: Acceptance in FCS or CTE Master of Arts program. 3 hours

FCS 6100 Nutrition Across the Lifespan Examination of changes in nutrient needs that accompany growth and development from the prenatal stage through old age. Emphasis will be on high risk groups and current issues affecting people at various stages of the life cycle. Open to graduate students only. Prerequisite: FCS 4600 or 5650. 3 hours

FCS 6140 Nutrient Metabolism I Study of the functions, requirements, and interrelationships in metabolism of energy, protein, carbohydrate, and lipids. Open to graduate students only. 3 hours

FCS 6150 Nutrient Metabolism II Study of the functions, requirements, and interrelationships in metabolism of vitamins and minerals. Open to graduate students only. 3 hours

FCS 6160 Consumer Education Course includes family resource management; goals and resources in family financial planning; the role of the consumer in the marketplace; decision-making for individuals and families; information processing; clarifying values and determinants of quality in the spending process; and specific consumer economic issues across the life-span and within different economic and family settings. Open to graduate students only. 3 hours

FCS 6220 Practicum in Family and Consumer Sciences This practicum is designed to give the student an opportunity to apply knowledge and information acquired in the family and consumer sciences academic setting and further develop and refine professional skills with the guidance and assistance of professionals currently working in the field. The variation in credit hours allows the program to meet the individual needs of various students, some of whom may be fully employed. Each credit hour requires 100-200 hours of on-site experience. Restricted to master's in family and consumer sciences, or career and technical education. Open to graduate students only. Prerequisites: FCS 5250, (ED 6170 or LS 6170), CTE 5100, CTE 5120, CTE 5130, CTE 5420, and department approval. Prerequisites must be taken prior to intern teaching experience. 2 to 6 hours

FCS 6230 Dietetic Internship Practicum The Dietetic Internship Practicum is designed to provide supervised practice experiences for the student to apply knowledge in dietetics acquired in an academic setting and to develop and refine professional skills under the guidance of professionals currently working in the field. Experiences include assessment, diagnosis, intervention, and monitoring/evaluation of clients and situations in clinical, community, and food service management settings. Each credit hour represents 200 hours of on-site experience. Completion of two semesters of FCS 6230 does not constitute completion of the WMU dietetic internship (DI) program, which qualifies one to receive a Verification of Program Completion form from the DI program. May be repeated for credit once. Open to graduate students only. Restricted to students enrolled in the Master of Arts in Family and Consumer Sciences with an emphasis in Dietetics. 3 hours

FCS 6510 Child Development Theories and Practice This course applies child development theories and research to direct work with children in multiple health, family life education, and community settings. Open to graduate students only. 3 hours

FCS 6520 Family Life Education Current issues, trends, and methods in teaching family life education. Program development and philosophy including: needs assessment, design, development, promotion, justification, evaluation and funding sources. Emphasis placed on proposal writing and partnerships with community agencies, court systems, schools, and health care facilities. Open to graduate students only. 3 hours

FCS 6530 Families, Loss and Bereavement This course examines loss, disability, illness, injury, death, bereavement and theories of grief as applied to child, youth, and family services in multiple health, family life education, education, and community settings. Open to graduate students only. 3 hours

FCS 6550 Adult-Child Relationships Theories and strategies for promoting children's developmental needs and building strong adult-child relationships in therapeutic, school, or home settings. Open to graduate students only. 3 hours

FCS 6560 Family Law, Ethics, and Professional Issues Areas of study include the therapist's and family life educator's legal responsibilities and liabilities, fundamentals of family and consumer law across the life cycle, professional ethics for marriage and family therapists and family life educators, professional socialization, current issues in professional practice, and the role of the professional organizations, licensure and certification, legislation, independent practice, and interprofessional cooperation. Open to graduate students only. 3 hours

FCS 6570 Developing Effective Programming for Kinship Care Family Members Focuses on providing strategies for developing, implementing and assessing effective programs for members of kinship care families. Students will become familiar with research focusing on existing programs and services, both in the U.S. and internationally. Students will become more knowledgeable about varied service delivery options. Initial steps related to program development, including grant writing, advisory boards and community collaboration will be included. Strategies related to successful program implementation, the critical nature of evaluation, and the importance of reporting about program services will be additional areas of focus. Open to graduate students only. 3 hours

FCS 6600 Studies in Family Relationships The course will focus on family dynamics (i.e., family processes, communication skills, conflict management, stress, and family crises) and interpersonal relationship skills with specific attention given to translating this knowledge and these skills into family life education programming. Open to graduate students only. 3 hours

FCS 6900 Seminar in Family and Consumer Sciences Investigation and discussion of current research and literature in specified family and consumer sciences topics. Open to graduate students only. 2 hours

FCS 7000 Master's Thesis Please refer to GRAD 7000 for course description. Graded on a Credit/No Credit basis. May be repeated for credit. Open to graduate students only. Prerequisite: 3.70 GPA 1 to 6 hours

FCS 7100 Independent Research Please refer to The Graduate College section for course descriptions. Graded on a Credit/No Credit basis. May be repeated for credit. Open to graduate students only. 2 to 6 hours

Human Performance and Health Education

HPHE 5000 Studies in Human Performance and Health Education In depth study of selected topics in HPHE. Format can include clinics, workshops, seminars, travel and/or mini-courses, and provide opportunity to acquire skills and teaching techniques. State, national, and international authorities or consultants may be involved. Topics include: Aesthetics of Sport; Nutrition and Fitness; Outdoor Education; Physical Fitness; Relaxation; Special Physical Education Activities; Therapeutic Recreation; Supervision and Self Assessment in Physical Education. 1 to 2 hours

HPHE 5160 Issues in Health Education Issues vary or occasionally repeat depending on the timeliness of the issue. Following are currently recommended themes. Students may register for 516 more than once but may not repeat the same issue. Issues include: Aids; Alcohol and Drug Education; Biofeedback; Cardiovascular Health; Consumer Health; Health Careers; Health Promotion; Improving Health Behavior; Safety and Health in the Industrial Setting; Sexually Transmitted Diseases; Stress Management; Wellness and Lifestyle. Open to upperclass and graduate students. 1to 4 hours

HPHE 5610 Legal Issues in Sport This course is designed to help the sports professional become more conscious of legal responsibilities in the sport setting, thus reducing the penalties of legal action. Students will discuss basic legal concepts and structures as they apply to the physical activity context. Application will be made in

regard to improving risk management strategies and skills. Open to upperclass and graduate students. Restricted to majors/minors in Recreation/Sport Management. 3 hours

HPHE 5980 Readings in Human Performance and Health Education Advanced students with good academic records may elect to pursue independently a program of readings in areas of special interest. Open to graduate students only. Prerequisite: Department approval. 1 to 2 hours

HPHE 6210 Physical Activities for Exceptional Children Physical and recreational activities and games used in corrective, adaptive, and general physical education programs for special education children. Open to graduate students only. 3 hours

HPHE 6220 Programming in Adapted Physical Education A study of physical education programs for children with disabilities. Emphases will be placed on individualized, humanistic, developmental, functional, adapting, behavioral, sensori-motor, perceptual-motor, aquatic, fitness, movement, and inclusive programs. Open to graduate students only. 3 hours

HPHE 6250 Assessment in Adapted Physical Education A study of motor and fitness assessment in special physical education. Emphasis will be placed on the application of appropriate motor and physical fitness tests to make subsequent effective placement decisions and to determine selection of content for children with disabilities in school settings. Open to graduate students only. Prerequisites: HPHE 6210 and HPHE 6220. 3 hours

HPHE 6300 Professional Development Seminar for Coaches This course is to provide an opportunity for students in the Master of Arts Coaching Degree to pursue professional development in the specific sport of interest. Course structure is an independent study where students participate in a coaching development seminar of their choice (12-24 contact hours) to enhance competence in the National Standards for Sports Coaches. The seminar must develop student competence in Domain 5 Teaching and Communication and Domain 6 Sport Skills and Tactics. Open to graduate students only. 1 to 2 hours

HPHE 6310 Skill Acquisition and Human Performance This course provides an introduction to the various concepts of biomechanics and exercise physiology that interact to influence sport motor performance. Included in this course are theoretical concepts of movement observation, skill acquisition, mechanical factors that influence human performance, human energy systems and muscular activity with special attention to the effects of sport activity on physiological processes. Open to graduate students only. 3 hours

HPHE 6320 Theories of Strength and Conditioning This course is designed to provide knowledge in the strength and conditioning field for professionals entering the world of human performance. This class will also help prepare students for the NSCA Certified Strength and Conditioning Specialist Exam. Emphasis will be placed on developing, assessing, and implementing programs for athletes and the physically active population. Students will be presented with both in-class lectures as well as hands on training that deals with the enhancement of human performance and wellness. Students will participate in workout sessions. Open to graduate students only. 3 hours

HPHE 6340 Sports Safety and Injury Management for Coaches This course will prepare coaches to receive certification in the American Red Cross Sport Safety Training and First Aid for Coaches program. Course work enables coaches to recognize the signs of emergency and emergency situations and to guide them in proper response to these situations. Basic procedures in injury prevention, assessment, treatment, and rehabilitation will be covered. Principles and techniques are presented in a lecture and laboratory format. Prevention and communication will be emphasized. Open to graduate students only. 3 hours

HPHE 6350 Principles and Practices of Effective Coaching This course addresses the broad scope of principles and pedagogical practices necessary for coaches in meeting their responsibilities in youth sports. The eight domains of the National Standards for Athletic Coaches provide a basis for class structure and evaluation. The course serves to prepare the coach to fulfill his or her responsibilities through skillful problem solving and enhanced pedagogical knowledge, but to also understand and utilize purposeful reflection in professional development. Open to graduate students only. 3 hours

HPHE 6360 Principles of Sport Nutrition and Energy Systems The purpose of this class is to develop the knowledge, skills, and attitudes of proper nutrition relevant to managing health and body weight for optimal physical performance, regeneration and recovery. Course content is designed to assist coaches, to take responsibility for understanding appropriate nutrition and weight management practices and use sound nutritional principles as a part of training and preparation for competition; provide information about the myths and science associated with current trends in sport nutrition; hydration, nutritional periodization; body composition and weight management. Open to graduate students only. 3 hours

HPHE 6400 Instructional Materials in Physical Education This course is designed to provide students with experiences which will enable the physical educator to (1) select motor appropriate activities based on the developmental needs of specified learners; (2) develop effective instructional plans; (3) evaluate, select, and utilize appropriate commercial instructional resources; (4) evaluate and select appropriate instructional approaches; (5) develop strategies to assess the progress of students enrolled in a physical activity program; and (6) devise an effective public relations plan to promote physical activity within a school setting. Open to graduate students only. 3 hours

HPHE 6410 Teaching and Supervision Skills in Physical Education This course is the second of a three-series course sequence which is designed to prepare the physical education teacher for master's level competencies. This course facilitates the development of effective self-assessment and reflective teaching skills. An orientation to systematic observation of teaching in physical education is presented with emphasis on the collection and assessment of descriptive data in applied settings.Prerequisite: HPHE 6400 or permission of instructor. Open to graduate students only. 3 hours

HPHE 6420 Human Growth and Motor Development Study of the changes in the growth and development of humans across the lifespan that occurs due to the interaction between a person and the environment. Content includes physical, cognitive, perceptual-motor and personal social aspects of human development with special emphasis on the process of physical skill acquisition and decline. Open to graduate students only. 3 hours

HPHE 6430 Physical Skill Acquisition and Motor Learning Study of the variables that affect acquisition of motor skills among specified populations (children, adolescents, adults). Content includes perceptual-motor, information processing, and the study of physical aspects of the human motor learning. Open to graduate students only. 3 hours

HPHE 6440 Program Evaluation in Sport and Physical Education This course facilitates the evaluation of physical education and athletic programs using state, national, and international standards. Course content includes the process of evaluation involving school, community, and other personnel as well as the product of evaluation associated with the preparation of application materials to submit for specific accreditation or as action research designed for program improvement. Students will be exposed to methods of action research in creating and maintaining an optimal physical activity program. Open to graduate students only. Prerequisite: HPHE 6450 or permission of instructor. 3 hours

HPHE 6450 Curriculum Development in Human Performance and Health Education This course is an interdisciplinary approach to the development of curriculum reflecting local, national, and international standards and trends associated with the HPHE field. Students acquire the skills required for the development of a comprehensive program utilizing a systematic approach focused on a selected instructional settings (K-12, college, private settings). Open to graduate students only. 3 hours

HPHE 6480 Advanced Studies in Motor Development A series of advanced seminars dealing with specific topics in motor development, fitness education and special physical education. Emphasis will be placed on in depth study of theories, problems, practices, and issues with appropriate lectures and experiences leading toward the development of a research project or a master's thesis. Topics include: Play Theory; Psychology of Sport; Mainstreaming; Aquatic Programs in Special Physical Education; Methods and Materials in Physical Education; Teaching Skills and Strategies in Physical Education; Health-Related Fitness for Practitioners. Open to graduate students only. 1 to 3 hours

HPHE 6600 Governance and Administration of Sport This course serves as an introduction to the management, governance, and leadership of interscholastic, intercollegiate, corporate, and amateur sport. Focus will be directed towards general management and leadership principles, as well as specific competency areas required by all sport managers. This course serves as the introductory course for the MA in Sport Management/MA in Coaching by providing a conceptual foundation for sport governance and organization; specific duties assumed by coaches and sport managers including financial management, human resource management, group dynamics, labor relations, risk management, facility and event management and promotion. Open to graduate students only. 3 hours

HPHE 6630 Ethics in Sport This course is designed to provide physical activity professionals with an introductory experience in analyzing ethical and moral issues in the sport domain. The focus is on encouraging participants to develop a consistent, reflective value structure to utilize in addressing moral questions. In addition, the course structure is to allow participants to develop a personal model of integrity that will be successful in the sport environment. Content will include description of the "great game" and application of the guides to right actions in sport. Open to graduate students only. 3 hours

HPHE 6640 Marketing and Sales in Sport This course is designed to provide an introduction to the marketing and sales of sport products and services. Course content will include, but not limited to a discussion of contingency framework for strategic sport marketing and selling; understanding sport consumers; segmentation, targeting, and positioning; promoting and selling mix elements; sponsorship programs; and product distribution and pricing. Open to graduate students only. 3 hours

HPHE 6650 Financial and Economic Principles in Sport This course is intended to provide the student with an understanding of general economic principles and fiscal management strategies. This information will be applied to the specific requirements of sport management environments. Open to graduate students only. 3 hours

HPHE 6660 Human Resource Management in Sport This course focuses on the management of human resources in interscholastic, intercollegiate, and corporate sport with special attention to the unique and common characteristics of both paid and volunteer workers. Course content will center on differences among people; the processes of individual motivation in appraisal; and subsequent organizational and leadership processes in the management of human resources in sport. Open to graduate students only. 3 hours

HPHE 6670 Public Relations in Sport This course is designed to acquaint the sport management student with policies and procedures critical to the promotion of sport. Topics will include, but not limited to, news releases, radio news, television news, news conferences, feature stories, media relations, event promotion, sport photography and interviews and speeches. Special attention will be paid to the use and creation of written and oral public relations documents for various media outlets. Open to graduate students only. 3 hours

HPHE 6690 Event and Facility Planning and Management This course provides students with knowledge of the planning and supervision of recreational and sport facilities and events. Special attention will be paid to the planning elements of large-scale sport events; available literature related to facility management; and issues such as Americans with Disabilities Act compliance, fiscal management, maintenance and safety factors, and current trends in facility design. Open to graduate students only. 3 hours

HPHE 6700 Exercise Physiology I This course is the first of a series of two courses that will give the graduate student a much more in depth study of the various physiological processes and how they are transformed and manipulated by external stresses (e.g., work, exercise, disease, environment, etc.). Open to graduate students only. 3 hours

HPHE 6710 Exercise Physiology II This course is the second of a series of two courses that will give the graduate student a much more in depth study of the various physiological processes and how they are transformed and manipulated by external stresses (e.g., work, exercise, disease, environment, etc.). Open to graduate students only. 3 hours

HPHE 6720 Laboratory Techniques in Exercise Science The purpose of this course is to educate the graduate student in the areas of measurement and laboratory techniques used in the assessment of exercise and/or athletic performance. Specifically, the student will study the process and procedures used to determine a variety of parameters used in the study of exercise and sport performance. This information will then be used to help qualify and quantify exercise and sport performance. Open to graduate students only. Prerequisite: Permission of instructor. 3 hours

HPHE 6730 Biomechanics This course consists of an in depth discussion of biomechanics as it is applied to sports and other related physical activities. Open to graduate students only. 3 hours

HPHE 6740 Clinical Exercise Physiology The purpose of this course is to instruct the student in the pathophysiology of various disease states and how that change in physiology affects the evaluation and prescription of exercise for these populations. Special attention will be given to the ACSM KSAs for Clinical Exercise Specialists and Registered Clinical Exercise Physiologists. Open to graduate students only. 3 hours

HPHE 6760 Exercise Science Seminar Seminar on the most current research problems presented in exercise science related journals (within the last 3 years). Students and instructor will present and debate these problems to stay current in the research literature and to learn new perspectives and theories. Also included in this course is a look at the typical research designs used by researchers in the field. Open to graduate students only. Prerequisite: Permission of instructor. 3 hours

HPHE 6810 Sports Medicine: Applied Anatomy and Physiology This course will offer comprehensive material regarding anatomy and physiology and their implications in sports medicine. This course will concentrate on functional components of anatomy and physiology and utilize cadavers in lab. Open to graduate students only. 2 hours

HPHE 6821 Manual Therapy Techniques in Sports Medicine This course will offer practical applications in the art of manual therapy techniques which include massage, myofascial release, joint mobilization, muscle energy, and strain-counterstrain. Students will be instructed on appropriate form, pressure, and assessment outcomes when applying these techniques on a patient population. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Restricted to masters in Athletic Training, Occupational Therapy and Physician Assistant. 3 hours

HPHE 6830 Aquatic Therapy Techniques and Rehabilitation This course will offer comprehensive materials regarding aquatic rehabilitation techniques for athletic related injuries. Students will learn physiological and psychological aquatic benefits, implement various aquatic techniques used for pre- and post-injury and surgical rehabilitation for athletes, and pool safety and risk management in the aquatic environment. Open to graduate students only. 3 hours

HPHE 6840 Pharmacology for Sports This course will provide a basic understanding for the common prescription and over the counter medicines used to treat many of the medical conditions experienced by athletes and physically active individuals. This course will assist the athletic trainer/exercise science student in explaining the ramifications for the use and abuse of many of the prescription, over the counter, and abused medications of sport participation. This course will allow the athletic trainer/exercise science student to provide pharmacology information when direct access to the physician or pharmacist is not available. Open to graduate students only. Prerequisite: Enrollment in athletic training graduate program or by instructor permission. 3 hours

HPHE 6850 Advanced Techniques in Therapeutic Modalities This course will offer comprehensive material regarding advanced therapeutic techniques for treating injuries and conditions of physically active individuals. Scientific theory and application of clinical techniques will be emphasized. Open to graduate students only. Prerequisite: Enrollment in graduate athletic training program. 3 hours

HPHE 6880 Orthopedic Fabrication and Diagnostics in Sports Medicine This course will offer students practical experiences in manufacturing, fabricating, and fitting various casting, orthotic, and braces for

multiple orthopedic injuries. Student will also be instructed on deciphering and interpreting various diagnostic imaging techniques used for evaluation of orthopedic injuries of the body. Open to graduate students only. Restricted to masters in Athletic Training. 3 hours

HPHE 6890 Emergency Management in Athletic Training This course will offer comprehensive material covering life threatening medical and orthopedic situations in sports medicine, including assessment, treatment and transportation of injured athletes. Particular focus will be provided on splinting various body parts, spine board procedures, equipment removal and general medical emergency management. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Restricted to master's in Exercise and Sports Medicine, Athletic Training Concentration. Prerequisite: Instructor approval. 3 hours

HPHE 6900 Research Procedures in Human Performance and Health Education Required of all graduate students. This course introduces principles scientific inquiry, research methods applicable to the HPHE fields, evaluation of published research, and procedures for developing a research design using a quantitative or qualitative approach. Open to graduate students only. 3 hours

HPHE 6910 Psychological Preparation and Mental Training for Sport and Physical Activity. This course is designed to provide physical activity professionals with an applied view of the broad field of sport/exercise psychology. Students will be presented with theory and related research on the various constructs affecting psychological preparation and mental periodization for physical activity. Students will also be given an opportunity to explore mental training techniques and intervention strategies for sport competition. Course content helps develop mastery level competence in a number of Domains in the National Standards for Sport Coaches. Open to graduate students only. 3 hours

HPHE 6920 Analytical Techniques in Human Performance and Health Education Required of all graduate students. This course is designed to allow the student to develop the knowledge and skills necessary for the effective analysis of qualitative and quantitative data. Open to graduate students only. Prerequisite: HPHE 6900 3 hours

HPHE 6930 Sociology of Sport and Physical Activity This course is to provide a forum for discussion of the current social factors influencing sport and physical activity professions. Course structure will attempt to facilitate investigation and identification of the function of sport and physical activity in contemporary society with special emphasis on the relationship of sport to social institutions. Open to graduate students only. 3 hours

HPHE 6940 Technology in Human Performance and Health Education The integration of technology in field settings associated with physical education, coaching, sports administration, and adapted physical education is the focus of this course. Students will develop the basic technological skills required for the basic implementation of such an effort. Open to graduate students only. 3 hours

HPHE 7000 Master's Thesis Please refer to The Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Restricted to masters in Physical Education. Prerequisite: Approved application, approval of advisor, and the Graduate College. 1 to 6 hours

HPHE 7100 Independent Research Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Restricted to masters in Physical Education. Prerequisite: Approved application and approval of advisor. 2 to 6 hours

HPHE 7120 Professional Field Experience Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Restricted to masters in Physical Education. Prerequisite: Approved application and approval of advisor. 1 to 12 hours

Literacy Studies

LS 5020 Curriculum Workshop Opportunity provided for teachers, supervisors and administrators in selected school systems to develop programs of curricular improvement. This may include short-term offerings to resolve a particular curricular problem, as well as long-range curriculum studies. A wide variety of resources is used for instructional purposes, including several specialists, library and laboratory facilities, field trips, audiovisual materials, and the like. Each offering of LS 5020 will be given an appropriate subtitle, which will be listed on the student's official transcript. Students may earn up to three hours of credit for any given subtitle. No more than three hours of LS 5020 may be applied toward the master's degree with advisor approval. Prerequisite: Advisor approval. 1-6 hours

LS 5100 Diversity in Language, Literacy, and Learning This course explores how diversity influences language, literacy, and learning in K-8 settings. Students will examine and apply theories and research on instructional practices responsive to students' local, national, and international histories, individual identities, and languages/dialects as they affect language and literacy learning. The course emphasizes language arts and literacy instruction that promotes social justice and critical engagement with complex issues related to maintaining a diverse, inclusive, and equitable society. Open to upperclass and graduate students. 3 hours

LS 5160 Professional Symposium in Reading This course meets the Michigan reading course requirement for K-12 teachers seeking professional certification. The course examines reading, writing, and thinking processes with an emphasis on reading, writing, and communication across disciplines and across all grade levels. Special emphasis will be placed on the foundations of reading and writing, language development; vocabulary/concept development; sociocultural and linguistic factors that influence literacy; and the effective use of standards, strategic instruction, and assessment to support the diverse needs of all students. Open to upperclass and graduate students. 3 hours

LS 5220 Teaching Reading with Children's Literature Engage candidates in a wide reading of children's literature with particular application to classroom curriculum and instruction. Candidates will explore multiple genres of texts, both print and electronic, to support and enhance young students' learning and develop methods for integrating children's literature throughout the curriculum. Open to upperclass and graduate students. 3 hours

LS 5260 Teaching Reading with Adolescent Literature Engage candidates in a wide reading of young adult literature with particular application to classroom curriculum and instruction. Candidates will explore multiple genres of texts, both print and electronic, to support and enhance adolescent students' learning and develop methods for integrating young adult literature throughout the curriculum. Open to upperclass and graduate students. 3 hours

LS 5980 Selected Readings in Education Designed for highly qualified students who wish to study in-depth some aspect of literacy studies under a member of the departmental staff. Prerequisite: Department and instructor approval. 1-4 hours

LS 6100 Theory and Research in Reading and Literacy Instruction Designed to be the initial course in the Master of Arts in Literacy Studies. Content includes the theoretical and evidence-based foundations of reading and writing processes and instruction including major theories and research in literacy, both current and historical. Candidates will gain a solid, research-based foundation in the cognitive, linguistic, motivation, and socio-cultural foundations of reading and writing development, processes, and components. Open to graduate students only. 3 hours

LS 6170 Reading in the Content Areas Designed to acquaint K-12 teachers with reading theory and practice used in the process of reading to learn in content area classrooms. Candidates will learn to analyze a wide range of informational texts, both traditional and electronic, for factors that affect student learning. In addition, candidates will apply the foundations of reading and writing processes when developing and evaluation strategies and materials to enhance student learning in specific content areas. Open to graduate students only. 3 hours

LS 6180 Literacy Acquisition and Reading Instruction The purpose of this course is for candidates to use instructional approaches and materials in an integrated, comprehensive, balance curriculum to support student literacy learning. The course builds on literacy research related to language acquisition and language and reading development from the earliest years through adolescence, as well as the ties between oral language and literacy. Open to graduate students only. 3 hours

LS 6190 Clinical Studies in Reading This course is intended to provide the basic information needed in the examination of persons with reading disabilities. Interviewing techniques and examination procedures will be the basic content of the course. Emphasis will be placed on the educational, physical, psychological, and sociological factors affecting reading performance. Students will be provided with a knowledge of both standardized and informal reading tests. Students will have the opportunity to construct, administer, score, and interpret both standardized and non-standardized reading tests. Emphasis will be placed on producing a practical bibliography of measurement instruments and materials. Prerequisite: ED 3120 or 3220. 3 hours

LS 6200 Educational Therapy in Reading Laboratory application of knowledge gained concerning the psychological, sociological, and physiological factors affecting children's reading ability is stressed. The prevention, diagnosis, and treatment of reading problems is experienced through working with struggling readers. Students will become familiar with testing instruments, their use, administration, and interpretation. Students will also learn techniques of therapy and recognize those factors necessary for effective therapy. Prerequisite: ED 6190. 3 hours

LS 6240 Reading Assessment and Effective Instruction Throughout this course, candidates will use a variety of assessment tools and practices to plan and evaluate effective reading and writing instruction. Content includes analyzing different types of assessments, learning how to interpret the results, using this information to plan effective instruction for struggling readers, and ultimately communicating this information to a variety of audiences. Open to graduate students only. Prerequisite: LS 6100 or LS 6180. 3 hours

LS 6250 Strategic Learning Through Texts for Middle School Teachers This course is designed to assist teachers who are instructing at the middle level in their use of appropriate strategies for accessing meaning of text. The course will give ways to help early adolescent learners apply strategies aimed at using reading and writing as ways of knowing across the middle level curriculum. 3 hours

LS 6300 Teaching Reading in a Diverse Society Designed to help candidates acquire awareness, understanding, respect, and a valuing of differences in society through creating effective literacy instruction for all students. Emphasis is placed on the ethical responsibility to provide differentiated curriculum materials and methods free from cultural and linguistic bias that are responsive to student interests and their reading development. Open to graduate students only. Prerequisite: LS 6100 and LS 6180. 3 hours

LS 6320 Literacy Coaching Literacy coaches are “professionals whose goal is to improve reading achievement in their assigned school or district positions” (International Reading Association, 2010, p. 103). This course is designed to investigate the professional learning and leadership role of the literacy coach with an emphasis on teacher mentoring and assessment of school literacy needs. Open to graduate students only. Prerequisites: LS 6100, LS 6170 and LS 6240. 3 hours

LS 6330 Early Childhood Literacy Focused on early/emergent literacy, this course explores the developmental aspects of young learners as they acquire reading and writing skills. Candidates will investigate and apply literacy assessments and instruction designed for young students. Open to graduate students only. 3 hours

LS 6340 Adolescent Literacy Focused on the adolescent learner, this course explores the particular reading and writing needs of middle and high school students. Candidates will investigate and apply literacy assessments and instruction designed for adolescent learners. Open to graduate students only. 3 hours

LS 6350 Advanced Literacy Coaching Building on the knowledge learned in LS 6300, this course is designed to prepare the candidate for higher, more formal levels of literacy coaching as is defined by the International Reading Association. In particular, candidates will be engaged in co-planning and co-teaching lessons with colleagues and planning and implementing professional development on effective literacy theory and practice. Open to graduate students only. Prerequisites: LS 6100, LS 6170, LS 6240, LS 6300 and LS 6320. 3 hours

LS 6360 Advanced Clinical Studies in Reading Building on the knowledge learned in the prerequisite courses, this course is designed to hone the candidate's skills in the assessment of reading and writing achievement and difficulties to an advanced level of understanding and practice. Candidates will be involved in intensive tutoring and possible supervision of tutoring including advanced reading and writing assessments, interpretation, and instruction. Open to graduate students only. Prerequisites: LS 6100, LS 6190, LS 6240, LS 6320 and LS 6400. 3 hours

LS 6400 Clinical Practice for Reading Specialists Designed to give candidates individual and collaborative experience working with struggling readers in a supervised clinical environment. Candidates will implement assessments, interpret results, create effective literacy instruction based on student's needs, and communicate with parents/guardians and relevant school personnel. Open to graduate students only. Prerequisites: LS 6100, LS 6170, LS 6240 and LS 6320. 3 hours

LS 6420 Action Research Seminar To be taken in the last six hours of the candidate's program, this course engages the candidate in an action research study that centers on a professional aspect of literacy coaching. Topic is to be decided upon with discussion with program faculty. Open to graduate students only. Prerequisites: LS 6100, LS 6170, LS 6240, LS 6320 and LS 6400. 3 hours

LS 6870 Strategic Learning through Texts for High School Teachers This course is designed to assist high school classroom teachers and those interested in literacy for high school students in using appropriate strategies for accessing meaning of text. This course will give ways to help students use and apply strategies in using reading and writing as ways of knowing for high school students. Prerequisite: ED 5160. 3 hours

LS 6970 Special Topics in Reading A variable credit course designed to provide a vehicle for the development and implementation of special topics in the field of literacy. The purpose is to provide students with the opportunity to study topical current issues. 1-3 hours

LS	7000	Master's Thesis	6 hours
LS	7100	Independent Research	2-6 hours
LS	7120	Professional Field Experience	2-12 hours

Organizational Change Leadership

OCL 6400 Foundations in Organizational Change Leadership This course provides an overview of the Organizational Change Leadership (OCL) function in an organization and an overview of the whole OCL curriculum. The ability to lead and manage effective change in diverse domestic and cross-cultural contexts is one of the most sought after skills among managers and leaders working in today's organizations. Many researchers and practitioners believe that in order to lead effective change, one needs to be a theoretician, a manager, and a consultant. In other words, today's change leaders must know how to use theory to understand the organizational changes they encounter and lead; be able to apply change management principles to their change initiatives; and be skilled at diagnosing organizational problems and developing recommendations for improvement, using global/cross-cultural perspectives. Topics include organizational change theory, levels of organizational change, organizational change models, resistance, and change leadership. Open to graduate students only. 3 hours

OCL 6410 Organizational Culture and Globalization The capability to understand and to interact with diverse societal cultures across the world, and the skill to build effective local organizational cultures, are prerequisites to effective organizational change leadership. This course examines organizational culture from an interdisciplinary and global perspective. Key models of organizational culture and current research studies and

practice processes are examined, with an emphasis on how culture develops and evolves, and its relationship to leadership and organizational effectiveness. With a deep understanding of various organizational and national cultures, students become empowered to organize systems, symbols, and people in ways that influence planning, policies, and resource allocations in their organizations. Open to graduate students only. Prerequisite: OCL 6400 3 hours

OCL 6430 Group Dynamics and Team Development in an Age of Globalization This course examines theoretical perspectives and current research and practice on group dynamics including seminal and contemporary theories of intra and inter group dynamics, diversity in groups, group communication, and developing and leading teams. Adopting a group level perspective, specific topics include: inclusion and identity, formation, cohesion and development, structure, influence, power, leadership, performance, and decision making. Throughout the course, students engage in experiential group activities (both inside and outside the classroom) to enhance their competence to assess group performance and to more effectively lead and develop diverse teams. Open to graduate students only. Prerequisite: OCL 6400 3 hours

OCL 6440 Large Scale Change and Organizational Design This course focuses on organizational theory and practice at the organizational level, or change related to large human systems. Shouldering an open systems perspective, the models and methodologies supporting organizational level change are reviewed. In particular, students become skilled at Whole Scale Change, i.e., methodologies used when the goal is to change the entire organization. Managing strategic reorientations, mergers and acquisitions, culture change, technological change, and organizational process engineering are explored. In addition, this course reviews established organizational design models. Emphasis is placed on many internal and external factors that cause an organization to fit a particular architecture, and student design a forward-thinking organization creating all components, including vision, mission, strategy, structure, and processes. Open to graduate students only. Prerequisite: OCL 6400 3 hours

OCL 6792 Capstone Seminar in Organizational Change Leadership The capstone seminar is an action research project designed to increase one's individual capacity for leading and managing change. A cornerstone of the program and a key requirement for successfully completing the degree, the capstone seminar requires students to engage in an actual organizational consultation, either within their own organization or with a client organization, while receiving coaching and supervision from expert program faculty. Successfully fulfilling the requirements of the capstone seminar involves mastering both the key aspects of organizational consulting and the basic principles of applied and action research. All capstone projects are expected to be rigorous, theory-based and empirically driven. Open to graduate students only. Prerequisites: OCL 6400, OCL 6410, OCL 6430, OCL 6440, EDT 6420, EMR 5400, EDLD 6020 and EDLD 6650. 3 hours

OCL 6890 Special Topics in Organizational Change and Leadership This special topics course provides an opportunity for students to take courses on new and cutting edge topics in Organizational Change Leadership. While there are some foundational competencies and knowledge that all students graduating from this program should have, there will be additional emerging models and practices that may be explored during this seminar. Topics will vary in depth and scope, as will the number of credits for each topic. Open to graduate students only. May be repeated for credit. Prerequisite: OCL 6400 1 to 4 hours

Organizational Learning and Performance

OLP 6400 Principles of Human Resources Development The course provides an overview of the Human Resources Development (HRD) function in an organization. This includes the role of the HRD professional, the nature of HRD structure and function, and the planning and operation of HRD. Special emphasis in the course is devoted to analysis of the HRD function in any organization to identify those elements and characteristics of HRD associated with successful, state-of-the-art and worthwhile operations. These include, but are not limited to: respect for diversity, commitment to individual growth and development, and connections of individual goals with organizational outcomes. The course is a prerequisite for all OLP masters students, and a good choice for any other person who wishes to gain a critical understanding of the HRD function including: organizational development, training and development, and career development. Open to graduate students only. 3 hours

OLP 6410 Fundamentals of Needs Analysis The purpose of the course is to provide students an opportunity to develop the knowledge, skills, and abilities necessary to successfully conduct needs assessments. Students study a model of the essential functions and organizational variables that are critical to understanding how organizations work. This provides the foundational knowledge and contextual awareness for organizational needs assessments that are worthwhile and beneficial. The course content includes the study of theory and practice in a widely applicable approach to needs assessments. Students learn practical tools, methods, and processes of needs analysis work. The practice of needs assessment is diverse and adaptive; therefore no single best method or simplistic step by step approach is endorsed. Open to graduate students only. 3 hours

OLP 6430 Project and Change Management This is a course in the fundamentals of project management and organizational change for HRD professionals. Students will learn the basic concepts of project management and be proficient in the use of project management tools, including project scope and definition work-breakdown structure, workflow analysis and scheduling, project budgeting, project controls, and risk-management. However, the course emphasis is on managing Organizational Learning and Performance projects rather than capitol "brick and mortar" projects. A strong emphasis is on the role of project leaders with respect to personal and professional effectiveness, internal consulting and project team leadership. Open to graduate students only. 3 hours

OLP 6440 Organizational Effectiveness and Learning This is an online course that examines the role of learning as a primary element of effective organizations. Students study the systems, models, and characteristics of effective organizations and the influence of dialog and learning. Special attention is given to the study of organizations as adaptive systems that encompass multiple diverse elements (racial, ethnic, gender, generational, physical), and the roles of leaders, individuals, and teams in harnessing these diverse employees to improve organizational effectiveness. Major topics of the course include contrasting models of organizational learning, strategy, and leadership. Open to graduate students only. 3 hours

OLP 6791 Masters Seminar in Organizational Learning and Performance This course is the first step in completing the capstone. Student will choose a topic for their capstone and develop a literature review and project definition. When the literature review and the project definition are approved by the instructor, the student can begin working on the capstone. This course and OLP 6792 are typically taken in consecutive semesters. Open to graduate students only. 1 hours

OLP 6792 Capstone Seminar in Organizational Learning and Performance This course provides students a final opportunity to demonstrate competency in the integration and application of organizational learning and performance theory. It entails the completion of the Performance-Driven Leadership Portfolio initiated during the Masters Seminar (OLP 6791), and development of a Capstone Project that results in the creation of a product, such as a research report, a needs assessment report, a curriculum design and/or an evaluation study report. The Capstone Project is typically completed as the last program requirement, as its project embodies the knowledge and skills developed during the program's course work. Open to graduate students only. Prerequisites: Students must have completed all but one of their required courses in their Master of Arts in Leadership for Organizational Learning and Performance prior to registering for this course. 2 hours

OLP 6890 Special Topics in Organizational Learning and Performance This course will cover various topics important to the field of Organizational Learning and Performance. The goals of the course will vary as special topics are considered, they generally will be:

1. To familiarize students with current trends in the field of organizational learning and performance.
2. To examine in depth the development and diversity of emerging models.
3. To expose students to new development in the principles and practices of organizational learning and performance.
4. To provide students with the opportunities to develop skills in critically analyzing new applications of organizational learning and performance theory.

May be repeated for credit. Graded on a C/NC basis. Open to graduate students only. 3 hours

Special Education

SPED 5000 Topical Issues in Educating Learners with Disabilities This course provides a survey or in-depth coverage of current issues directly related to the education of learners with disabilities. May be repeated for credit. Prerequisite: Department approval. 1 to 4 hours

SPED 5040 Teaching Practicum in Special Education This course provides the student with a structured assignment working with a learner who is at-risk or has a disability. It is intended to enable the students to demonstrate skills in assessment and prescription and in the implementation and evaluation of a tutorial plan of instruction for a specific learner in a mainstreamed or self-contained setting. Graded on a Credit/No Credit basis. Restricted to graduate students only. Prerequisites: SPED 5300 and SPED 5330; and concurrent enrollment in SPED 5340. 1 to 2 hours

SPED 5070 Seminar in Special Education: Focus on Emotional Impairments This seminar provides a review of key concepts in the field of emotional impairments with emphasis on content from the Michigan Test for Teacher Certification and the PRAXIS tests in emotional impairments or severe behavior disorders. May be repeated for credit. Open to upperclass and graduate students. 2 hours

SPED 5080 Seminar in Special Education: Focus on Learning Disabilities This seminar provides a review of key concepts in the field of learning disabilities with emphasis on content from the Michigan Test for Teacher Certification and the PRAXIS tests in learning disabilities. May be repeated for credit. Open to upperclass and graduate students. 2 hours

SPED 5300 Introduction to Special Education This course introduces students to the characteristics and needs of learners with sensory, physical, mental, emotional, and learning disabilities. Students develop an understanding of the psychological, sociological, philosophical, legal, and educational aspects of each type of disability. Prerequisite: Department approval. 3 hours

SPED 5330 Introduction to Assessment and Data-Based Decision Making in Special Education This course introduces students to assessment within a multi-tiered system of support emphasizing progress monitoring and data-based decision making for screening, classification, instructional planning, and evaluation. Topics will include principles of measurement, informal and formal assessment procedures, use and limitations of assessments, legal and ethical issues in assessments, and using technology to conduct assessments. Program requires a grade of "C" or better. Restricted to graduate students only. 3 hours

SPED 5340 Evidence Based Interventions I: Foundations of Reading, Written Language and Content Areas This course will focus on theories and research that form the basis of curriculum development and instructional practices within the Common Core of English Language Arts, and Content Areas for K5 learners including students with high incidence disabilities and those students academically at-risk. The course will emphasize application of ethical principles and practices in planning and delivering explicit differentiated instruction using universal design for learning (UDL) principles, evidence-based instructional strategies, collaborative strategies, assistive technology, and development of self-determination skills that ensure access to general education curriculum for students with high incidence disabilities and those academically at risk. Open to upperclass and graduate students. Prerequisite: SPED 5330 (may be taken concurrently); Corequisite: SPED 5040. 3 hours

SPED 5400 Introduction to Cognitive Impairments This course provides an introduction to the field of mental retardation. Historical perspectives, definitions, service delivery systems, evaluation procedures, and major issues are examined. Corequisite: SPED 5450 3 hours

SPED 5450 Education of Learners with Mild and Moderate Cognitive Impairments This course focuses on understanding the ways in which teachers organize curriculum and implement assessment and instruction to insure maximum learning for students with mild and moderate cognitive impairments. Corequisite: SPED 5400 3 hours

SPED 5700 Introduction to Emotional Impairments This course provides an introduction to the field of emotional impairments. Historical perspectives, definitions, service delivery systems, evaluation procedures, and major issues are examined. Corequisite: SPED 5750 3 hours

SPED 5725 Preventing Problem Behavior through Effective Teaching This course is an advanced skill-building experience designed to scaffold university book-learned knowledge into effective classroom behavior management and teaching practice. The course is taught using a format focused on the development of problem solving and behavior intervention skills within a reflective teacher model. Course content will be directly related to problems and challenges experienced by class participants within their own elementary, middle, or high school classrooms. Emphasis in this seminar is on the direct application of behavioral principles and techniques to increase, decrease, and maintain academic and social behaviors within a public school classroom. The format of the class will be project based with each student completing and implementing Functional Behavior Assessment leading to an individual Positive Behavior Support Plan for either social/emotional or academic behavior. Open to upperclass and graduate students. Restricted to majors in Special Education: Learning Disabilities/Emotional Impairments. Corequisites: SPED 4100 and SPED 4760. 3 hours

SPED 5750 Education of Learners with Emotional Impairments This course focuses on understanding the ways in which teachers organize curriculum and implement assessment and instruction to ensure maximum learning for students with emotional impairments. Corequisite: SPED 5700 3 hours

SPED 5800 Introduction to Learning Disabilities This course provides an introduction to the field of learning disabilities. Historical perspectives, definitions, service delivery systems, evaluation procedures, and major issues are examined. 3 hours

SPED 5850 Advanced Theory and Practice in Learning Disabilities Explores theories of learning disabilities, including an in-depth examination of controversies in the field. Also, examines issues and practices relating to the instruction of students with learning disabilities, including assessment and identification of learning disabilities, and intervention options. Prerequisite: SPED 5800 3 hours

SPED 5980 Readings in Special Education This course is designed for advanced students interested in independent study. Topics chosen must be approved by the instructor and the department chairperson. May be repeated for credit. Prerequisite: Department approval. 1 to 4 hours

SPED 5990 Topics in Special Education This course provides a survey or in-depth coverage of topics related to the education of learners with disabilities. This course may be repeated for credit. Prerequisite: Departmental approval. 1 to 3 hours

SPED 6040 Field Experience in Special Education II This field experience provides students with practice in individualized decision-making and instruction in the areas of English Language Arts and other Academic Contact Areas in K-5 settings. Individualized instruction plans emphasize explicit modeling and efficient guided practice to assure acquisition and fluency through maintenance and generalization. Graded on a Credit/No Credit basis. May be repeated for credit. Open to graduate students only. 3 hours

SPED 6112 Universal Design for Learning This course is designed to provide students with knowledge and skill in the conceptualization, construction, adaptation, and evaluation of instructional programs and instructional plans based on principles of universal design for learning (UDL) and accommodating to state and national curricular trends and issues. The UDL principles emphasizes use of multiple means of representation, expression, and engagement during assessment, instructional planning, and instructional delivery to accommodate diverse needs of learners with disabilities, and learners from diverse cultural backgrounds. Additional topics include: service delivery systems, roles of teachers and ancillary personnel, legal requirements in terms of curriculum planning and teaching, and major issues that confront the field of special education. Open to graduate students only. 3 hours

SPED 6113 Culturally-Responsive Practices in Special Education Students will learn evidence-based evaluation and intervention practices with culturally diverse populations (including but not limited to ethnic, geopgraphic, religious, and socio-economic diversity). This course will cover research investigating educational programs and instructional strategies that support improved long term academic outcomes for students from culturally diverse backgrounds and how this body of research can inform practices in Special Education. Open to graduate students only. Prerequisite: Department approval. 3 hours

SPED 6150 Transition-Focused Education and Services for Individuals with Disabilities This course examines issues regarding effective transition education and services for youths with disabilities. The focal point of course content is on designing and implementing research-based practices that meet federal and state mandates regarding transition services. Instruction emphasizes active learning strategies that facilitate the application of course content to each student's professional context. Course topics include applying a transition perspective of education, student-focused planning, student development, interagency collaboration, and family involvement. Prerequisite: Department approval. 3 hours

SPED 6200 Advanced Assessment in Schools This course examines assessment in education, emphasizing assessment and evaluation of at-risk and special needs children and adolescents. The course prepares educators to engage in reflective decision making and research-based professional practice that results in effective instructional and intervention programs for diverse groups of learners. The course is designed to provide participants with the knowledge and skills necessary 1) to be educated consumers of assessment data shared in schools, and 2) to collect and to use a wide variety of assessment data in general and special education at the individual student, classroom, and building levels. Open to graduate students only. 3 hours

SPED 6210 Curriculum Development for Learners with Disabilities This course is designed to provide experienced special education personnel with knowledge and skill in the conceptualization, construction, adaptation, and evaluation of instructional programs for learners with disabilities, including accommodating to state and national curricular trends and issues. Prerequisite: Department approval. 3 hours

SPED 6290 Secondary ED Inclusive Practices The course prepares educators to provide for the individual special learning needs of students with learning and behavioral differences who are integrated into the general education program. Students will be provided with an overview of Special Education with an emphasis on emerging perspectives. Topics to be examined will include: Universal Design for Learning (UDL), effective teaching practices within a Multi-tiered framework including accommodations and modifications, co-teaching in inclusive settings, and observing, recording, and monitoring students' progress. Open to graduate students only. Restricted to Master of Arts in Teaching students. 3 hours

SPED 6300 Clinical Practice in Special Education This course serves as a field or practical experience to meet special education credentialing requirements. Students will apply their knowledge and skills in a school setting with children and youths with varying disabilities and exceptionalities. This course is offered on a credit/no credit basis. Open to graduate students only. Prerequisite: Department approval. 3 hours

SPED 6356 Evidence Based Instruction II: 6-12 LA, Ma, Sc, SS This course will focus evidence-based instruction in the areas of language arts, mathematics, science, and social studies for students in grades 6-12. This course will emphasize application of differentiated instruction using universal design for learning (UDL) principles, evidence-based assessment and instructional strategies, assistive technology, and development of self-determination skills in a context that ensures access to the general education curriculum for students with high incidence disabilities and those academically at risk leading to successful transition beyond high school. May be repeated for credit. Open to graduate students only. Restricted to master's in Special Education. 3 hours

SPED 6360 Topical Seminar in Special Education This course provides a survey or in-depth coverage of topics directly related to the education of learners with disabilities. May be repeated for credit. Open to graduate students only. Prerequisite: Department approval. 1 to 4 hours

SPED 6370 Applications of Research in Special Education This course is designed to provide students with fundamental knowledge and skills in research and evaluation in special education. The course will survey research methods typically used in school-based research, and will emphasize the use of single-subject research methodology. Open to graduate students only. Prerequisite: Department approval. 3 hours

SPED 6380 Applications of Behavior Analysis in Special Education Introduces the foundations of behavior analysis. Specific applications of behavior analysis in general and special education settings are emphasized. 3 hours

SPED 6381 School-Wide Positive Behavior Support The course will provide a detailed examination of service delivery within a multi-tiered system of support, specifically focusing on universal (Tier 1), strategic (Tier 2) and intensive individualized (Tier 3) approaches to positive behavior support processes in elementary and secondary educational settings. In particular, the course content will cover the foundations necessary for schools to implement school-wide positive behavior support including commitment to the process, the development of a team, knowledge of applied behavior analysis and data-based decision making, and the supports and strategies necessary at each of the three levels. Open to graduate students only. Prerequisite: SPED 6380 3 hours

SPED 6382 Intensive Interventions for Challenging Behaviors This course builds from the foundational skills taught to students in *Applications of Behavior Analysis in Special Education*. Instruction centers on interventions for students with emotional and behavioral disorders across four primary areas: (a) school-wide systems of positive behavior supports, (b) evidenced based Tier-2 Interventions, (c) functional behavioral assessment (FBA), and (d) the design and implementation of individualized behavior interventions plans (BIP). This course aims to support the continued development of students' knowledge base in applied behavior analysis and positive behavior supports. Upon successfully completing this course, students will be able to identify the function of a student's problem behavior and develop and appropriate intervention plan to support the child's educational growth. Open to graduate students only. Prerequisite: SPED 6380 3 hours

SPED 6390 Evidence-Based Instructional Practices: Autism Provides students with the foundational knowledge and skills required in the application of evidence-based instructional interventions to individuals with autism spectrum disorders and other developmental disabilities in educational settings. Among the topics covered are: functional assessment, positive behavioral supports, effective skill instruction, assistive technology, reinforcement-based interventions for problem behavior, and functional communication training. Open to graduate students only. Prerequisite: SPED 6380 3 hours

SPED 6400 Organization and Administration of Services for Learners with Disabilities This course examines the principles and practices of organization and administration of special education programs at the state, intermediate, and local levels. Prerequisite: Department approval. 3 hours

SPED 6410 Supervision of Special Education Programs and Services This course is designed to provide the experienced special educator with specific knowledge and skills necessary for supervising personnel who are providing both direct and indirect services to learners with disabilities. Emphasis is placed on procedures utilized in selecting personnel, identifying resources for program development and support, facilitating change in teacher behavior, and evaluating the effectiveness of program operations and personnel. Prerequisite: Department approval. 3 hours

SPED 6430 Legal Issues in Special Education Pending special education legislation, existing laws, and regulations at the national, state, and local levels will be examined. Legal issues in the context of the development and implementation of special education programs will be considered. 3 hours

SPED 6500 Seminar on Special Education in Higher Education This course examines the structure of higher education and the roles a faculty member plays within a department, a college, and a university (e.g., teaching competence, professional recognition, and service). In addition, current issues in higher education and teacher education will be examined. Prerequisite: Department approval. 3 hours

SPED 6560 Seminar: Current Issues in Special Education This course is designed to provide an in-depth exploration of current issues in the field of special education and in the various specific areas of exceptionality. Issues relating to the interface of general and special education will also be explored. Utilizing skills acquired in SPED 6010, 6020, and 6030, students will be expected to review, evaluate and present information on the various topics considered. Prerequisite: Department approval. 3 hours

SPED 6610 Collaboration and Consultation in Special Education Provides students with the knowledge and skills needed for effective collaboration, teaming and problem-solving in school and agency settings. Emphasis is placed on components of effective communication, collaboration, problem-solving, and the various direct and indirect service delivery models that can be used to facilitate the success of all learners. 3 hours

SPED 6655 Coaching Classroom Management The purpose of this course is to provide strategies and tools that enable an instructional coach or behavior intervention specialist to have a positive influence and impact on the behavior management skills and practices of classroom teachers in general and special education settings. The focus of this course will be how coaches can assist classroom teachers, in a non-evaluative context, to implement evidence-based proactive and positive instructional strategies. Open to graduate students only. 3 hours

SPED 6710 Field Experience in Emotional Impairments K-5 This field experience provides students with an opportunity to work in K-5th grade classroom with learners with emotional impairments. It is intended to build upon knowledge gained in SPED 5750 and allows students to more fully participate in classroom teaching activities. Graded on a Credit/No Credit basis. May be repeated for credit. Open to graduate students only. Restricted to master's in Special Education. Prerequisite: SPED 5750 3 hours

SPED 6711 Field Experience in Emotional Impairments 6-12 This field experience provides students with an opportunity to work in middle school and high school classrooms with learners identified with or at risk for emotional impairments or severe behavior problems. It is intended to build upon knowledge gained in SPED 5700 and allows students increased opportunities in school settings. Graded on a Credit/No Credit basis. May be repeated for credit. Open to graduate students only. Restricted to master's in Special Education. Prerequisite: SPED 5700 3 hours

SPED 6740 Intern Teaching in Special Education This final field experience is open only for special education graduate students who have completed all of their special education endorsement requirements. It will consist of full-time intern teaching in an appropriate educational setting serving students with disabilities. Students will participate in all phases of the school program to which they are assigned. Credit/No Credit only. Prerequisite: Department approval. 6 hours

SPED 6750 Internship in College Teaching This course is designed specifically for students officially admitted to the doctoral program in special education. The student will be expected to evidence ability to plan and execute instructional tasks, develop and apply appropriate evaluative techniques, and interpret students' performances. Prerequisite: Department approval. 3 hours

SPED 6815 Field Experience in Strategic Interventions with High Incidence Learners-LD (Grades 6-12) This field experience emphasizes the use of data-based decision making and functional assessment to design, implement, and evaluation interventions that address academic or social behaviors of learners in grades 6-12. Students will observe and apply information and skills gained in prerequisite courses. Graded on a Credit/No Credit basis. May be repeated for credit. Open to graduate students only. Restricted to master's in Special Education. Prerequisite: SPED 6356 3 hours

SPED 7000 Master's Thesis Open to Graduate students only-Please refer to the Graduate College section for course descriptions. Credit/No Credit only. May be repeated for credit. Prerequisite: Department and Graduate College approval required. 6 hours

SPED 7100 Independent Research Open to Graduate students only-Please refer to the Graduate College section for course descriptions. Credit/No Credit only. May be repeated for credit. Prerequisite: Department approval. 2 to 6 hours

SPED 7115 Capstone in Special Education This three-hour course is the last in the Master of Arts in Special Education. It is a culminating experience built upon the learning outcomes of a student's specific concentration area and the special education core. The course is designed as an opportunity for reflection and evaluation of professional practice, providing students with an opportunity to integrate isolated skills and knowledge through completion of a capstone project. May be repeated for credit. Open to graduate students only. Prerequisite: Departmental Approval. 3 hours

SPED 7120 Professional Field Experience Open to Graduate students only-Please refer to the Graduate College section for course descriptions. Credit/No Credit only. May be repeated for credit. Prerequisite: Department approval. 2 to 12 hours

SPED 7300 Doctoral Dissertation Open to Graduate students only-Please refer to the Graduate College section for course descriptions. Credit/No Credit only. May be repeated for credit. Prerequisite: Department and Graduate College approval required. 15 hours

Teaching English Learners

TEL 5150 Introduction to ESL/Bilingual Education This introductory course is designed to engage practicing teachers in learning about the history, theories, and principles related to English as a second language and bilingual education. Theories of language learning, and various historical approaches to language teaching form a foundation for principled practice. Open to upperclass and graduate students. 3 hours

TEL 5200 Linguistic Principles for ESL and Bilingual Education This course raises students' awareness of how human language is organized and learned so that they will be better able to understand what and how students gain proficiency in the languages they are learning. Emphasis is placed on the major components of language (phonology, morphology, lexicon, syntax, etc.) and recognizing how they are realized as children and adults learn a language. Open to upperclass and graduate students. 3 hours

TEL 6210 ESL Teaching Methods This course is designed to help candidates acquire awareness and understanding of various teaching methodologies for English learners. Through this course, candidates will begin to acquire an understanding and ability to provide differentiated curriculum materials and pedagogy free from cultural and linguistic bias that are responsive to student interests and their linguistic and literacy development. This class requires field experience in K-12 school settings which have English learners. Open to graduate students only. Prerequisites: TEL 5150 and TEL 5200, with a grade of "C" or better in all prerequisites. 4 hours

TEL 6220 Standards and Assessments in ESL Education This graduate course is an introduction to the basic, current, and innovative approaches to classroom-based assessments of ELLs. Through this course, candidates will begin to acquire an understanding of ESL/bilingual standards and how they relate to assessment and instruction. In this course, students will gain understanding which will allow them to critically examine assessment tools as well as design formative assessment specific to the ELLs' needs. Open to graduate students only. Prerequisites: TEL 5150 and TEL 5200, with a grade of "C" or better in all prerequisites. 3 hours

TEL 6310 Advanced ESL Teaching Methods This course is designed to advance candidates' understanding of ESL teaching methods both in theory and practice, with a focus on newcomer programs. Through this course, candidates will continue to develop ability to provide curriculum materials and methods that tailor to the linguistic and literacy development of newcomer English Language Learners. This class requires field experience in K-12 school settings which have English learners. Open to graduate students only. Prerequisites: TEL 5150, TEL 5200 and TEL 6210; with a grade of "C" or better in all prerequisites. 4 hours

TEL 6320 Advanced Standards and Assessments in ESL Education This advanced graduate course is designed to promote reflective practice with assessment administration and analysis. Students will administer assessments to ELLs in a required field experience and critically examine the assessment results. Students will link assessment results and discuss instructional implications to best meet the needs of ELLs at various levels of English proficiency. Open to graduate students only. Prerequisites: TEL 5150, TEL 5200 and TEL 6220; with a grade of "C" or better in all prerequisites. 4 hours

TEL 6350 Research Methods in TESOL This introductory course is designed to engage students in learning about quantitative and qualitative research methods in the field of Teaching English to Speakers of Other Languages (TESOL). The course will include an overview of the latest research interest areas in the field, the different theoretical frameworks in language learning and teaching research, how to collect quantitative, qualitative, and mixed-methods data with second language learners, how to analyze and interpret quantitative and qualitative date, and so on. In addition, students will learn how to use a statistical program to enter and analyze second language learner data. Students will learn to read research articles and critically analyze them. Students will also engage in writing a research proposal that could lead to a research project for the Capstone in TESOL course. Open to graduate students only. 3 hours

TEL 6450 Capstone in TESOL This course is designed for students to demonstrate the knowledge that they gained in the Master's of Arts in Teaching English to Speakers of Other Languages program. The students will design a final project that involves the creation of an online teaching portfolio in the form of a web page. In this portfolio, students will exhibit their Curriculum Vitae, teaching philosophy, and three of the following options: a) a teaching project, b) a program evaluation, c) a mini research project, d) a research proposal, and e) a critical analysis of second language assessment. Open to graduate students only. 3 hours

TEL 6700 Special Topics in TESOL This elective course is designed to engage students in learning about various different topics in Teaching English to Speakers of Other Languages (TESOL). Each year, this course will cover a different topic related to TESOL that is not covered in other classes for the M.A. TESOL program. Possible topics are the following: computer assisted language learning, teaching ESL grammar, Sociolinguistic issues in TESOL, teaching reading and writing, and so on. This particular course will cover topics in computer assisted language learning (CALL). Students will learn about how to use technology to enhance teaching ESL. May be repeated for credit. Open to graduate students only. 3 hours

Workforce Education and Development

WFED 5010 Topics in International Workforce Education and Development This course provides an overview of Workforce Education and Development systems around the world with a special focus on one country. Students will identify and analyze the characteristics of each system as well as the benefits/advantages compared to the United States. This course is typically offered as a short term study abroad experience, although it may be offered in traditional and online formats. Open to upperclass and graduate students. 3 hours

WFED 5100 Special Populations in Workforce Education and Development Special populations enrolled in workforce education programs and the identification of appropriate teaching strategies, materials, and support services for effective teaching and learning. Open to upperclass and graduate students. Restricted to students who have been admitted to the professional level of a Career and Technical Education major, students in the Workforce Education and Development minor, or graduate students. 3 hours

WFED 5120 Principles of Workforce Education and Development Explanation, identification, investigation of the history, philosophy, principles, programs, and services in workforce education. Open to upperclass and graduate students. Restricted to students who have been admitted to the professional level of a Workforce Education and Development major, students in the Workforce Education and Development minor, or graduate students. 3 hours

WFED 5121 Career Exploration in Workforce Development This course will provide students with an introductory field experience in workforce education and development. Each student will be placed in a non-profit organization, business, or government agency that focuses on workforce development. Students will spend a minimum of 72 hours at their placement site. In addition to performing tasks under the direction of a site supervisor, students will job-shadow at least two professionals in workforce development. Students will also create a portfolio that demonstrates their work and volunteer experiences in workforce education and development. Open to upperclass and graduate students. Prerequisites: WFED 5120, WFED 4010 and WFED 4020 (WFED 4010 and WFED 4020 may be taken concurrently). 3 hours

WFED 5130 Teaching Methods in Workforce Education and Development Analysis and methods of organizing instruction in workforce education. Included is a review of instructional theory and practice in workforce education, the development of lesson plans, the selection and use of instructional methods, and the presentation of content using various methods of delivery. Open to upperclass and graduate students. Restricted to students who have been admitted to the professional level of a Workforce Education and Development major, students in the Workforce Education and Development minor, or graduate students. 3 hours

WFED 5140 Workshop in Workforce Education and Development Investigation, research, and development of a particular topic or area of interest for workforce education. (Students may enroll for more than one topic, but in each topic only once, to a maximum of three credit hours.) Open to upperclass and graduate students. Prerequisite: Vocational Certification or consent. 1 to 3 hours

WFED 5150 Grant Writing for Workforce Education and Development Analysis of the grant writing process, including the identification of a sponsor, development of an idea and plan, and completion of a proposal. Open to upperclass and graduate students. 3 hours

WFED 5420 Curriculum Development in Workforce Education and Development Principles of analyzing, selecting, and arranging curriculum for instructional purposes in workforce education. Open to upperclass and graduate students. Restricted to students who have been admitted to the professional level of a Career and Technical Education major or graduate students. Prerequisites: Minimum of 26 hours completed.
3 hours

WFED 5430 Work-site Based Education Programs Study of work-site based education programs, including the organization and establishment of training programs, supervision of trainees on the job, and development of individual training plans and programs. Emphasis on establishing working relationships between school, business, and the community, including cooperative education, work experience, apprenticeship, work-study, and work exploration programs for Workforce Education. Open to upperclass and graduate students.
3 hours

WFED 5750 Internship in Workforce Development and Leadership This course will provide students with a capstone internship experience in workforce education and development. Each student will be placed in a non-profit organization, business, or government agency focusing on adult training, career assessment and development, or workforce development systems. Students will spend a minimum of 12 hours per week at their placement site per three credits. Students will also create a professional portfolio that demonstrates their expertise in workforce education and development. May be repeated for credit. Open to upperclass and graduate students. Prerequisites: WFED 5121, WFED 4010, WFED 4020, WFED 5120, WFED 5130 and WFED 5420; with a minimum grade of "B" in all prerequistes. All prerequisites except WFED 5121 may be taken concurrently.
3 to 9 hours

WFED 6120 Studies in Workforce Education and Development Designed to permit students to take advantage of opportunities offered through technical workshops, seminars, short courses, or field research offered on campus or in approved off-campus settings under the supervision of a member of the graduate faculty. Open to graduate students only. Prerequisite: Consent of instructor and department chair prior to registration.
1 to 4 hours

WFED 6140 Administration and Supervision of Workforce Education Emphasizes functions of administration and supervision, and problems involved in organizing and operating workforce education programs. For teachers, administrators, and supervisors of workforce education programs and those preparing for such positions. Open to graduate students only. 3 hours

CTE 6150 Trends and Developments in Career and Technical Education A review and exploration of contemporary trends and developments in career and technical education. Open to graduate students only.
3 hours

WFED 6160 Occupational Selection and Training Primarily designed for workforce educators and developers. Special emphasis on adapting instruction to individual needs. Open to graduate students only.
3 hours

WFED 6170 Seminar in Workforce Education and Development An intensive study of issues and initiatives related to workforce education. Topics vary from semester to semester, and a student may take more than one topic up to a maximum of six hours. Open to graduate students only. 2 to 6 hours

WFED 6270 Marketing Strategies in Workforce Education This course is designed to help Workforce Education teachers target students with a tentative career interest related to their program. Emphasis will be placed on developing a community survey, program website plan, student ambassador program, program brochure or poster, and five-year marketing plan. Open to graduate students only. 3 hours

CTE 6430 Measurement and Evaluation in Workforce Education Preparing and using written performance and alternative assessments for workforce education and development. Open to graduate students only. 3 hours

WFED 6450 Organization of Employment and Training Systems Study of various public and private employment and training systems, including the funding sources and authorizing legislation, description of available programs and services, identification of participants/clients served, explanation of participants/client intake and referral process, rationale and need for program and services offered by the agency/institution or organization. Open to graduate students only. 3 hours

WFED 6460 Leadership Development in Workforce Education An intensive study of the required leadership skills to perform the major duties and tasks of secondary and post-secondary career preparation administrators including business and financial management, facilities and equipment management, instructional management, personnel management, school-community relations, student services, organizational improvement, professional development, program planning, development, and evaluation related to career and technical education. A student may take up to a maximum of six hours. Open to graduate students only. 3 to 6 hours

WFED 6480 Adult Education in Workforce Education Influence of developmental needs of adults and changes in society affecting families and institutions in developing adult programs in workforce education. Open to graduate students only. 3 hours

WFED 6500 Advanced Studies in Work-based Learning Current practices and future prospects of national and international work-based learning. Applies school-business partnerships, federal and state regulations, changing work place skill requirements, labor market information, and assessment to work programs. Prepares the student to develop and evaluate transition models between secondary and post-secondary institutions, business, industry and the community. Open to graduate students only. 3 hours

College of Engineering and Applied Sciences

Aerospace Engineering

AE 5100 Foundations of Structural Mechanics Fundamental analysis techniques for aerospace structures. Analysis of stress and strain including linear elastic anisotropic materials. Multi-axial yield. Boundary value problems and an introduction to variational calculus. Energy methods for structural analysis including minimum potential. Castigliano's theorems and other approximate methods. Open to upperclass and graduate students. 3 hours

AE 5200 Advanced Aerodynamics Fundamental mathematical skills in vector analysis and perturbation methods. Theoretical studies of thin airfoils, finite wings, wing-body and vorticities. Low and high Reynolds aerodynamics. Boundary layer and viscous flow control. High lift aerodynamics. V/STOL and UAV Aerodynamics. Open to upperclass and graduate students. 3 hours

AE 5400 Aerospace Vehicle Dynamics Three-dimensional kinematics and dynamics with a focus on aerospace vehicles. Newton/Euler and Lagrangian formulations for systems of particles and rigid bodies. Translating and rotating reference frames. Aircraft static stability, aircraft equations of motion, orbital mechanics for the two-body problem, spacecraft rotational dynamics. Open to upperclass and graduate students. 3 hours

AE 5760 Advanced and Electric Propulsion Systems Introduction to electric propulsion with an overview of electricity and magnetism, atomic physics, non-equilibrium flows and electrothermal, electromagnetic, and electrostatic electric propulsion systems. Brief introduction to other types of advanced propulsion methods. Open to upperclass and graduate students. 3 hours

AE 5950 Topics in Aerospace Engineering A specialized course dealing with some particular area of aerospace engineering not included in other course offerings. Open to upperclass and graduate students. Prerequisite: Instructor approval. 3 hours

AE 6200 Biofluid Mechanics – From Earth to Space Introductory analytical studies of fluid dynamics in bioenvironment. Fundamentals of internal and external biofluidic flows. Circulations of blood and cerebrospinal fluid will be discussed. Applications to spaceflight-induced human body fluid distributions and flow dynamics for human space exploration missions. Open to graduate students only. Prerequisite: AE 5200 or ME 5300 or instructor approval. 3 hours

AE 6400 Atmospheric Flight Dynamics and Control Synthesis of basic autopilot and stability augmentation systems for atmospheric flight vehicles. Advanced flight control structures including control of inertial cross-coupling. Human pilot plus airframe and the relationship with flying qualities requirements. Extensive use of commercial software tools. Open to graduate students only. Prerequisite: AE 5400 with a grade of "C" or better. 3 hours

AE 6410 Space Flight Dynamics and Control Introduction to space vehicle dynamics and control. Two-body and restricted three-body problems, orbital trajectories, orbit transfers, orbit perturbations. Spacecraft attitude kinematics and dynamics. Formulation of spacecraft rotations and orbital targeting problems as control problems. Algorithms and software for analysis of spacecraft dynamics. Open to graduate students only. Prerequisite: AE 5400 with a grade of "C" or better. 3 hours

AE 6710 Molecular Gas Dynamics Analysis of basic gas properties at the molecular level. Kinetic theory; molecular collisions, the Boltzmann equation. Maxwellian distribution function. Quantum mechanics; the Schrodinger equations, quantum energy states for translation, rotation, vibration, and electronic models of atoms and molecules. Statistical mechanics; the Boltzmann relation, the Boltzmann energy distribution, partition functions. These ideas are combined for the analysis of a chemically reacting gas at the molecular level. Open to graduate students only. 3 hours

AE 6950 Advanced Topics in Aerospace Engineering A specialized course dealing with some particular advanced areas of Aerospace Engineering not included in other course offerings. Open to graduate students only. Prerequisite: Departmental approval required. 3 hours

AE 6970 Problems in Aerospace Engineering Special problems of individual need or interest under the direction of a member of the graduate faculty. May be elected with approval of department chairperson and faculty member. Application must be submitted and approved prior to the election of the course. May be repeated for credit up to six hours. Open to graduate students only. Prerequisite: Instructor approval. 1 to 6 hours

AE 7000 Master's Thesis Please refer to the Graduate College section for course descriptions. Graded on a Credit/No Credit basis. May be repeated for credit. Open to graduate students only. Prerequisite: Instructor approval. 1 to 6 hours

Chemical Engineering

CHEG 5100 Medical and Biomolecular Engineering Concepts A course focused on molecular biotechnology, bioprocessing, and pharmacology concepts related to engineering. Topics may include but are not limited to molecular biology and biochemical techniques, PCR and primer design, chromatography, gel electrophoresis and Western blotting, mass spectrometry, advanced bioprocessing, pharmacokinetics, and pharamacodynamics. Open to upperclass and graduate students. Prerequisites: BIOS 1610, CHEM 3750, and MATH 2720, or by instructor approval. 3 hours (3 – 0)

CHEG 5950 Topics in Chemical Engineering A specialized course dealing with some particular area of chemical engineering not included in other course offerings. May be repeated for credit with a different topic to a total of six credit hours. Open to upperclass and graduate students. Prerequisite: Approved application and department approval. 1 to 3 hours

CHEG 6000 Chemical Engineering Mathematics The application of mathematical techniques to the solution of chemical engineering problems. Analytical and numerical techniques will be considered. Open to graduate students only. Prerequisite: MATH 3740 3 hours

CHEG 6100 Chemical Engineering Thermodynamics The Application of thermodynamics, both theoretical and applied, to liquid solutions. Ideal and non-ideal behavior is considered. The analysis of multicomponent and multiphase liquid solutions is included. Open to graduate students only. Prerequisite: CHEG 3200 3 hours

CHEG 6200 Advanced Transport Processes Balance Equations for mass, energy and momentum. Heat and mass transfer with chemical reactions. Boundary layer theory. Approximate models for turbulent and boundary layer flows. Estimation of interfacial transport coefficients and application to equipment design. Open to graduate students only. Prerequisites: CHEG 3110, CHEG 3120 and CHEG 3300. 3 hours

CHEG 6300 Chemical Reaction Engineering Chemical kinetics and equilibria; reaction rate expressions from mechanisms and experimental data; design and analysis of homogeneous flow and batch reactors; heterogeneous reactor design; solid catalyzed reactions. Open to graduate students only. Prerequisite: CHEG 4100 3 hours

CHEG 6400 Pollution Prevention Engineering The course will explore the options available to minimize the environmental impacts associated with chemical engineering processes. The design of conventional effluent treatment and process modification alternatives will be evaluated with respect to economic, environmental and resource use costs. Open to graduate students only. Prerequisites: CHEG 3110, CHEG 3120, CHEG 3200 and CHEG 4100. 3 hours

CHEG 6500 Chemical Process Design and Analysis I A project-oriented course tailored to the interests of the students that covers concepts and principles of chemical process design and analysis, optimization,

capital estimation, and cost analysis. Discusses the time value of money and other economic measurement parameters, the profit motive, and making engineering knowledge-based recommendations. Computer simulation, written and oral communication intensive. Completion of a major project report is required. Open to graduate students only. Prerequisites: CHEG 4600 and CHEG 4870; or instructor approval. 3 hours

CHEG 6510 Chemical Process Design and Analysis II A follow-up course to CHEG 6500, taken as an elective. Individual student projects based on topics covered in CHEG 6500. Open to graduate students only. Prerequisite: CHEG 6500 3 hours

CHEG 6600 Methods of Research and Engineering Communication Discusses modern methods of research, ethical considerations in research, experimental techniques, and laboratory safety for graduate students. Provides practice in conveying technical topics in written, oral, and visual engineering communication mediums, including formulation of theses proposals and styles for publication of graduate-level research in discipline specific journals. Open to graduate students only. 3 hours

CHEG 6950 Graduate Topics in Chemical Engineering
A special course dealing with topics in a specific subject of interest in chemical engineering. May be repeated with different topics. Prerequisites: Graduate standing and instructor approval. 3 hours

CHEG 7000 Master's Thesis Graduate research activities under the direction of a graduate faculty member. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisite: Department approval. 1 to 6 hours

CHEG 7100 Independent Research Designed for highly qualified advanced graduate students, or small groups, who wish to pursue individual studies or projects under the direction of a member of the graduate faculty. The faculty member shall be the instructor of record who is responsible for turning in a grade to the Registrar's Office. A Permission to Elect form, signed by the student's graduate advisor and the faculty supervisor, must be submitted to the Records Office prior to registration. May be repeated for credit. MS degree program students may elect a maximum of three credit hours as part of their final degree program. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisites: Approved application and department approval. 2 to 6 hours

CHEG 7300 Doctoral Dissertation Please refer to the Graduate College section for course description. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Restricted to doctoral students in the PhD in Engineering and Applied Sciences degree program, Engineering track, who are focusing their research on chemical engineering related topic(s). Prerequisites: Department and Graduate College approval. 1 to 15 hours

Civil and Construction Engineering

CCE 5300 Construction Project Delivery Systems A comprehensive coverage of the standard contracts between various agencies involved in construction will be described in the course. Analysis of traditional and current project delivery methodologies will also be presented. Issues related to insurance and bonding in the construction industry will be highlighted. Advanced topics such as alternate dispute resolution will also be covered. Open to upperclass and graduate students. Prerequisites: CCE 4310 and CCE 4360 or instructor approval. 3 hours

CCE 5310 Advanced Construction Project Management Advanced course in construction engineering builds on the information in the undergraduate construction management courses on planning and control of construction projects. Quantitative tools that are used in planning and controlling construction projects are described. Building Information Modeling (BIM) and relevant construction data management tools for effectively applying the learned quantitative tools in assignments and course project are taught. Cash flow forecasting, site planning, site administration, risk analysis, contract documents and contracts administration are covered. Advanced project management tools such as line of balance, velocity diagrams, time-cost trade off, resource planning, design-construction integration are used. Open to upperclass and graduate students. 3 hours

CCE 5400 Transportation Planning Theoretical foundations of transportation planning, analysis, and evaluation methods. Theory and application of aggregate and disaggregate models for land use, trip generation, and destination, mode, and route choice. Travel demand modeling and transportation network analysis for evaluation of system alternatives. Open to upperclass and graduate students. 3 hours (2-2)

CCE 5440 Design of Concrete Structures A continuation of the fundamentals in concrete structural design introduced in CCE 4400 Introduction to Structural Design, with emphasis on the latest ACI design requirements and specifications for Reinforced Concrete. Topics covered include analysis and design of two-way slabs, slender columns, footings, structural walls as well as introduction to seismic design. Open to upperclass and graduate students. Restricted to the following: majors in Civil Engineering or Construction Engineering; or masters in Civil Engineering. Prerequisite: CCE 4400 with a grade of "C" or better, or instructor approval. 3 hours

CCE 5450 Design of Steel Structures A continuation of the fundamentals in steel structural design introduced in CCE 4400 Introduction to Structural Design, with emphasis on the latest AISC design requirements and specification for structural steel. Topics include design of beam-column member; welded and bolted connections of axial members, framed and seated shear connections, rigid and semi-rigid moment connections, base plate connections; steel-concrete composite construction; plastic analysis and design. Open to upperclass and graduate students. Restricted to the following: majors in Civil Engineering or Construction Engineering; or masters in Civil Engineering. Prerequisite: CCE 4400 with a grade of "C" or better, or instructor approval. 3 hours

CCE 5460 Design of Timber Structures Structural behavior of wood under loads; application of current timber design codes; design of structural components and systems in wood; mechanical properties of wood fasteners and connections. Open to upperclass and graduate students. 3 hours (3 – 0)

CCE 5470 Design of Masonry Structures The course focuses on use and design of masonry in structural applications. Topics include materials and testing, construction, and design of components (under flexural, flexural and axial, and shear loadings) and connections. Open to seniors and graduate students. Restricted to masters in civil engineering. Prerequisite: CCE 3860 3 hours (3 – 0)

CCE 5500 Civil Infrastructure Management and Spatial Analysis Study for management of civil infrastructure systems, such as highway features, bridges, pavement systems, roadside features, control devices, and pipelines, through spatial analysis techniques. Open to upperclass and graduate students.
Prerequisite: CCE 3300 or graduate standing. 3 hours (3 – 0)

CCE 5520 Highway Design Principles Traffic volume; speed; capacity and level of service; sight distances; horizontal curves and supper elevation; vertical grades and curves; cross section elements; earthwork; deceleration/acceleration lanes; medians and separations; design of interchanges; roadside design; drainage design; and highway design project. Open to upperclass and graduate students. Restricted to majors in construction engineering or civil engineering; masters in civil engineering; and doctorates in engineering. Open to upperclass and graduate students. Prerequisite: CCE 3300 with a grade of "C" or better, or instructor approval. 3 hours (3 – 0)

CCE 5560 Foundation Design Foundation analysis and design for different civil engineering facilities. High-rise building, bridges and other complex structures such as piles, drilled piers, and caissons. Theoretical aspects of engineered foundations as well as practical applications are discussed. Open to upperclass and graduate students. Prerequisites: CCE 3360 and CCE 4400 or instructor approval. 3 hours (3-0)

CCE 5610 Design of Wastewater Systems Design of wastewater collection and transport systems. Unit operations in wastewater treatment; physical, chemical and biological processes for treatment of wastewater; sludge treatment and disposal; design of a wastewater treatment plant; site visits to wastewater treatment plants. May be repeated for credit. Open to upperclass and graduate students. Prerequisites: CCE 3200 and CCE 3210. 3 hours

CCE 5650 Sustainability Design for Civil and Environmental Engineering The concept of design for sustainability will be introduced to the students. Sustainability will be represented as an extension of current practices and standards and simply addresses new concerns and constraints of civil engineering design and construction. Open to upperclass and graduate students. Restricted to masters in civil engineering.
3 hours (3 – 0)

CCE 5690 Principles of Fatigue and Fracture Basics of experimental techniques and modeling used in industry to study inelastic deformations, fatigue, and fracture of engineering materials and structures. Open to upperclass and graduate students. Cross-listed with ME 5690. 3 hours (3 – 0)

CCE 5960 Special Topics in Civil and Construction Engineering New or special topics on current developments in different aspects of civil engineering will be provided. Specific topics and prerequisites are identified by the instructor and will vary from semester to semester. Open to upperclass and graduate students. Restricted to masters in Civil Engineering. Prerequisite: Instructor approval. 3 hours

CCE 6020 Modeling and Analysis of Civil Engineering Applications The course covers some major numerical modeling and analysis methods that are useful for civil engineering applications. The topics include ordinary differential equations, system of linear equations, matrix and its engineering application, eigenvalue problems, Fourier analysis, partial differential equations, boundary value problems and optimization techniques. Open to graduate students only. 3 hours

CCE 6040 Advanced Structural Analysis Development and application of nonlinear matrix analysis techniques; analysis of civil structures using plastic analysis theory, stability of frames, analysis of thin-shell structures, shear wall, and introduction to finite element method. Open to graduate students only.
3 hours (3 to 0)

CCE 6060 Dynamic Analysis of Structures Analysis and design of structural systems subjected to dynamic loading; characterization of dynamic loads; response of lumped and distributed parameter systems of one and many degrees-of-freedom; approximate design methods; introduction to earthquake analysis and design. Open to graduate students only. Prerequisites: CCE 6020 with a grade of “B” or better, or instructor approval.
3 hours (3-0)

CCE 6100 Civil Systems Analysis Introduction to systems approach to analyze and design civil systems. Identification and formulation of civil engineering systems. Modeling the problems and their solution techniques. Modeling approaches include linear programming, simplex method, network analysis, simulation, and decision theory. Open to graduate students only. 3 hours

CCE 6110 Traffic Operations and Management Application of traffic engineering and control concepts, including data collection, analysis, and traffic control systems design to traffic operations and management. Traffic engineering studies, traffic flow theory, traffic control devices, traffic signal control and ramp metering systems, and intelligent transportation systems. Open to graduate students only. 3 hours

CCE 6310 Design and Analysis of Construction Operations The basic objective of the course will be to provide the students the knowledge to design and analyze construction operations and processes. The course is designed to provide a thorough understanding of the fundamentals of discrete event simulation methodologies. The CYCLic Operations Network (CYCLONE) modeling methodology will be used as the basis for design and analysis of construction operations. Recent advancement in the area of simulation based project planning will also be provided. Issues related to object-oriented simulation, hierarchical and modular simulation, query based simulation, and web based simulation will also be highlighted in this course. Open to graduate students only.
3 hours

CCE 6320 Construction Project Control The course will involve instruction on a number of topics related to the administration of construction contracts. The major focus of the course will be on topics such as financial control, cost control, schedule update and monitoring, integrated project management systems, and computer integrated construction. Cost/Schedule Control Systems Criteria (C/SCSC) will be used to demonstrate the

importance of monitoring, updating, and control functions on a construction project. Open to graduate students only. 3 hours

CCE 6330 Design of Construction Systems This course will focus on construction practices, construction equipment, construction methods, and construction productivity. It will provide the students with an overview of issues related to construction site logistics such as temporary structures, shoring structures, and supporting structures. Knowledge of structural analysis and design and construction practices will form the basis of this course. Open to graduate students only. 3 hours

CCE 6340 Quality Management in Construction This course addresses various quality management concepts applied in construction. The people and process aspects of quality in enhancing construction performance are addressed in detail. All quality applications in construction, including Total Quality in construction, lean construction, construction supply chain, and construction quality assurance are discussed. Open to graduate students only. 3 hours

CCE 6350 Project Cost Estimating Introduce a general overview of construction cost estimating. Techniques and procedures used for estimating cost of construction projects, which include cost estimating process; elements of project cost; conceptual and detailed cost estimating methods; risk assessment and range estimating. New and old version of the work breakdown structure applied in building projects besides the WBS used by Department of Transportation is covered. Different computer applications used in building construction cost estimating and infrastructure projects are going to be used during the course (software used includes: Timberline, R.S. Means, MERL). Open to graduate students only. 3 hours

CCE 6360 Life Cycle Cost Management and Analysis Introduce a general overview of building economics analysis through the application of time value of money concept. Financing strategies for construction projects and profitability analysis are introduced. The correlation of Value Engineering and Life Cycle Costing Analysis of construction projects is addressed in detail. Break Even, Sensitivity and Risk analysis are discussed due to their application importance in project Life Cycle Costing. Life Cycle Costing of infrastructure projects through the application of Assets Management is studied and the deficiencies that most transportation agencies are facing in its application are highlighted. Open to graduate students only. 3 hours

CCE 6370 Sensing and Modeling for Construction Management Developments of sensing and modeling technology provide construction project managers tools for achieving real-time construction site monitoring and integrated cost-schedule information management. The purpose of this course is to provide students with a comprehensive overview about the technical capabilities of various sensing (e.g., RFID, video cameras, laser scanners) and modeling technologies (3D modeling, CAD, Building Information Modeling, Geographic Information Systems), and experience how these technologies can help construction project managers to achieve efficient and effective construction project planning, job site monitoring, and integrated cost-time-safety-quality management. Students will learn various data processing and visualization methods for analyzing the data collected by various sensors, and have hands-on experiences of using BIM, GIS and 3D reverse engineering software systems (Autodesk Revit, Google Sketchup, ESRI ArcGIS, Google Earth, InnoveMetric Polyworks, etc.). Open to graduate students only. 3 hours (3 – 0)

CCE 6380 Cyber-Physical Systems (CPS) Approach to Construction The course provides the students with a comprehensive overview of how computing systems, sensing and modeling technologies, are tightly integrated and coordinated with the physical construction process/infrastructure systems for enhanced monitoring and control. This course will introduce the students to the concept of CPS, applications in other industry sectors, design methodologies and research directions in the field of application of CPS in the construction industry, with an emphasis on the design of the underlying computational architecture. In particular, how CPS requirements of predictability and reliability can lead to significant changes in the construction industry and the study state of the art solutions. The students will have the opportunity of developing applications and experimenting with these applications through the development of laboratory scale prototypes. Open to graduate students only. Restricted to masters in civil engineering. 3 hours (3 – 0)

CCE 6460 Earthquake Engineering The course focuses on basic engineering characteristics of earthquake ground motions, analysis, design and evaluation methods of structural systems under earthquake loadings. Open to graduate students only. Restricted to masters in civil engineering. 3 hours (3 – 0)

CCE 6470 Bridge Engineering The course focuses on analysis, design, and rating of bridges as per the AASHTO Specifications/Guidelines. Simplified analysis procedures as well as use of software tools will be covered. Open to graduate students only. Restricted to masters in civil engineering. 3 hours (3 – 0)

CCE 6480 Finite Element Applications The course focuses on the study of finite element applications to common engineering problems including linear static, heat transfer, flow through porous medium, seepage, resistivity, etc. During the course, ABAQUS and HyperMesh are used as the analysis and pre/post-processing tools. Open to graduate students only. Prerequisite: CCE 6040 3 hours

CCE 6500 Fatigue of Engineering Materials Advanced approach to the problem of fatigue damage and life prediction; cyclic stress-strain response under uniaxial and multiaxial loading, fatigue limit, high and low cycle fatigue; surface integrity and fatigue life improvement. Students must complete the prerequisite or have the instructor's approval. Open to graduate students only. Cross-listed with ME 6530. Prerequisite: CCE 5690 or instructor approval. 3 hours (3 – 0)

CCE 6510 Structural Systems and Assessment The course focuses on (1) behavior of structural systems made of concrete, steel, and precast components or a combination thereof and (2) structural condition assessment by visual inspection, nondestructive evaluation (NDE) techniques, and destructive testing techniques or a combination thereof. Students will be given an opportunity to conduct investigations using some NDE techniques. Open to graduate students only. 3 hours (3 to 0)

CCE 6520 Pre-stressed Concrete Design Theory and design of pre-stressed concrete members and structural systems; pre- and post-tensioning of components; loss of pre-stress; proportioning of flexural members; and deflections. Open to graduate students only. 3 hours (3 to 0)

CCE 6530 Traffic Model and Simulation Understanding the macroscopic and microscopic traffic flow models and applying simulation techniques to modeling traffic phenomena; application of traffic flow models to traffic operation studies; issues in data needs and model validation; incorporating advanced traffic operation and ITS technologies into traffic simulation models; advanced transportation simulation models. Open to graduate students only. 3 hours

CCE 6540 Traffic Safety Engineering Reasons causing traffic accidents, factors affecting traffic safety, countermeasures representing traffic crashes, applications of statistical modeling techniques to accident pattern and traffic conflict analysis, assessment of safety effectiveness, traffic safety policies and advanced safety technologies. Open to graduate students only. 3 hours

CCE 6550 Travel Demand Analysis Study of theoretical aspects of travel demand concepts and analytical methods; urban and regional travel demand analysis; forecasting methods and behavioral demand models. Open to graduate students only. 3 hours (3 – 0)

CCE 6580 Public Transportation Design and analysis of public transportation systems; their operation and management: demand and cost analysis. Technological characteristics along with their impacts on capacity, quality of service, and cost. Impact of transit systems on land use and environment. Open to graduate students only. Restricted to masters in civil engineering. 3 hours (3 – 0)

CCE 6570 Transportation Economics Study of theoretical aspects of transportation economics and analysis techniques; economic impact of transportation investment and project analysis; finance of public transportation and privatization. Open to graduate students only. Restricted to masters in civil engineering. 3 hours (3 – 0)

CCE 6680 Composite Materials Introduction to matrix and reinforcement (or filler) materials that form the basis of modern composites. Students learn about polymer-, metal-, and ceramic-matrix materials;

fabrication of these materials into composites; effect of geometry and materials on properties; experimental characterization of composites; and biocompatibility, environmental effects, fatigue, fracture mechanics, and impact. Open to graduate students only. Cross-listed with ME 6540. Prerequisite: Instructor approval. 3 hours (3 – 0)

CCE 6690 Engineering Fracture Mechanics Fundamentals of the theory of linear elastic fracture mechanics (LEFM), crack-tip opening displacement (CTTOD), J-integral, R-curve, mixed-mode fracture and fracture toughness testing. Open to graduate students only. Cross-listed with ME 6690. Prerequisite: CCE 5690 or instructor approval. 3 hours (3 – 0)

CCE 6850 Advanced Design Project Students pursuing the design project option for the graduate degree in civil engineering will enroll in this course when conducting the design project. Students enrolled in this course will work under the direction of their graduate program advisor. Open to graduate students only. Prerequisite: Instructor approval. 3 hours.

CCE 6960 Advanced Topics in Civil Engineering New or special topics on advanced developments in different aspects of civil engineering will be provided. Specific topics and prerequisites are identified by the instructor and will vary from semester to semester. The course is repeatable. Open to graduate students only. Prerequisite: Departmental approval. 3 hours (3 to 0).

CCE 7000 Master's Thesis Please refer to The Graduate College section for course descriptions. Graded on a Credit/No Credit basis. May be repeated for credit. Open to graduate students only. 1 to 6 hours

CCE 7100 Independent Research Please refer to The Graduate College section for course descriptions. Graded on a Credit/No Credit basis. May be repeated for credit. Open to graduate students only. 2 to 6 hours

CCE 7300 Doctoral Dissertation Please refer to The Graduate College section for course descriptions. Graded on a Credit/No Credit basis. May be repeated for credit. Open to graduate students only. Prerequisite: Doctoral students only. 1 to 18 hours

Computer Science

CS 5250 Computer Architecture General topics in computer architecture, memory systems design and evaluation, pipeline design techniques, RISC architectures, vector computers, VLSI systems architecture. Open to upperclass and graduate students. 3 hours

CS 5260 Parallel Computations Architecture, synchronization and communication aspects of parallel and distributed systems. This course will focus on the design and analysis of parallel algorithms with a prototype treatment on current machines. The algorithms may include parallel sorting, combinatorial search, graph search and traversal, applications in graphics, 2-d finite differences, 2-d finite element techniques, matrix algorithms and the Fast Fourier Transform. Open to upperclass and graduate students. 3 hours

CS 5270 Computer Graphics An introduction to modern computer graphics systems. Topics covered include graphics hardware, two- and three-dimensional geometry and transformations, rendering, shading, texturing, raster and vector graphics, and modeling with curves and surfaces. Students will learn basic concepts and techniques in interactive computer graphics with emphasis on modern graphics programming. Open to upperclass and graduate students. 3 hours

CS 5300 Artificial Neural Systems An introduction to neural net concepts, algorithms, and applications. A history of neural nets will be presented along with some discussion of models of biological neural systems. The salient features of a neural net (architecture, activation functions, weighting scheme) will be characterized. Standard algorithms will be presented including Hopfield nets, linear associative models, bidirectional associative memories, and adaptive resonance models. The student will use neural net software to experiment with standard models and to develop an application for a project. Open to upperclass and graduate students.
Prerequisite: CS 3310 3 hours

CS 5310 Algorithms This course is a continuation of the study of data structures and algorithms, emphasizing methods useful in practice. It provides a theoretical foundation in designing algorithms as well as their efficient implementations. The focus is on the advanced analysis of algorithms and on how the selections of different data structures affect the performance of algorithms. Topics covered include: sorting, search trees, heaps, and hashing; divide-and-conquer; dynamic programming; backtracking; branch-and-bound; amortized analysis; graph algorithms; shortest paths; network flow; computational geometry; number-theoretic algorithms; polynomial and matrix calculations; and parallel computing. It comprises four hours of lecture and recitation experience every week. Open to upperclass and graduate students. Prerequisite: CS 3310 with a grade of "C" or better. 3 hours

CS 5400 Design of User Interfaces An introduction to the specification, development, and evaluation of user interfaces. This course provides an overview of human capabilities, technological possibilities, interaction design, and interface evaluation. The course presents both the theoretical foundations of interaction design and practical case studies of good and bad interface design. During the course, students will design and test one or more interfaces. Open to upperclass and graduate students. 3 hours

CS 5430 Database Systems An introductory course on relational database design, query and programming. Topics include relational model, relational algebra, conceptual design using entity-relationship model, functional dependency and normal forms, SQL, constraints and triggers, indexes, views, authorization, stored procedures, database programming, and transactions. Other topic include object-relational data model and an overview of database management system implementations. Students will get experience on how to design and use a relational database. A student may not receive credit for both CS 4430 and CS 5430. Open to upperclass and graduate students. 3 hours

CS 5541 Computer Systems This course offers an intensive study of computer system design, emphasizing modern operating systems and their impact on application programming. Topics covered include: processes and threads, CPU scheduling; process synchronization; deadlock, memory management; cache; main memory; virtual memory; virtual machine; shared-memory and message-passing based parallelism; clusters; database concepts; security and protection; authentication; and cloud computing. It comprises four hours of lecture and recitation experience every week. Open to upperclass and graduate students. Prerequisites: CS 2240 and CS 3310, with a grade of "C" or better in all prerequisites. 3 hours

CS 5550 Computer Networks and Distributed Systems The design and evaluation of computer networks using current hardware and software are explained. Various types of computer buses, local area networks, and long haul networks are defined. Case studies of popular networks are presented. Layered network models are studied. There is lab work with local area and long haul networks. Open to upperclass and graduate students. 3 hours

CS 5560 Network Programming This course will cover the fundamental aspects of computer network programming, with emphasis on the Internet. The goal of this course is to introduce the student to the basics of distributed application developments. Students will be introduced to building application protocols using UDP, TCP and secure sockets programming. Students will also be introduced to multi-tier application development (presentation/client tier, application tier, data tier) and RPC technologies including: RMI, EJB and Web Services. The course will focus on web application development using XHTML, Java Script, CSS, AJAX, Java Servlets, JSP, and JSF. Open to upperclass and graduate students. Prerequisite: CS 3310. 3 hours

CS 5600 Software Requirements Analysis and Design Provides an in-depth study of notations, methodologies, and tools for the analysis and design of software requirements. This course includes object-oriented requirement development and design, the relationships between object-oriented design concepts and software engineering principles. The course concentrates on the techniques used in the early stages of software development. Open to upperclass and graduate students. Prerequisite: CS 3310. 3 hours

CS 5700 Computer Security and Information Assurance This course is an introduction to computer/network security and information assurance. The topics include cryptographic techniques; network security - threats, controls, and tools; program security; and legal, ethical and privacy issues in computer security. Students will learn fundamental concepts of security applicable to computer programming and computer system

design. Assignments will improve students' practical skills in using computer networks and systems. Open to upperclass and graduate students. Prerequisite: CS 5550 with a grade of "C" or better. 3 hours

CS 5710 Network Security Fundamentals This course examines the network security fundamentals needed for a basic understanding of the Information Security discipline. The course covers basic attacks and vulnerabilities against an organization's network infrastructure as well as their mitigation's. This course will help students understand network addressing, protocols, and vulnerabilities. Finally, students will learn to capture and analyze network traffic to monitor for potential attacks. Practical exercises and labs will be used during this course to allow the students to apply these concepts in real-world scenarios. Prerequisite: Admission to the Graduate College or senior standing. 3 hours

CS 5730 Secure System Administration This course will address the theory and practices involved in securely delivering services from both Linux/Unix and Windows servers in a networked environment. Topics will include encrypted communication channels, intrusion detection systems and log monitoring, and secure consumption of services by client systems. The course covers tools and techniques for building and maintaining servers in a secure manner. Open to upperclass and graduate students. Prerequisites: CIS 5710 and CS 5710. 3 hours

CS 5740 Web Application Security This course will address the theory and practices involved in implementing, managing, or protecting Web applications. Students will learn about the underlying technologies and architecture decisions that go into developing a secure application and will learn the skills necessary to evaluate, implement, and test security measures in web applications. Students will complete several practical exercises and labs that will demonstrate and reinforce the theoretical concepts introduced in the course. Open to upperclass and graduate students. Prerequisites: CIS 5710 and CS 5710. 3 hours

CS 5750 Secure Software Development This course covers the theory and practice of software security, focusing on common software security risks including: identification of potential threats and vulnerabilities, methods and tools for identifying and eliminating security vulnerabilities and coding principles to avoid security holes in new software. The course covers essential guidelines for building secure software: how to design software with security in mind from the ground up and to integrate analysis and risk management throughout development. Open to upperclass and graduate students. Prerequisites: CIS 5710 and CS 5710. 3 hours

CS 5800 Theory Foundations This course covers the theory of computer science emphasizing automata, grammars and their applications in the specification of languages and computer systems, models of computation, and complexity. Analytic and problem solving abilities will be reinforced, and concepts covered in the course will be applied to real-world problems. It comprises four hours of lecture and recitation experience every week. Open to upperclass and graduate students. Prerequisite: CS 3310 with a grade of "C" or better. 3 hours

CS 5810 Compiler Design and Implementation The design and implementation of programming language translation. Topics include: lexical analysis, parsing, intermediate representations and code generation. A major project is required. Open to upperclass and graduate students. 3 hours

CS 5820 Artificial Intelligence This course covers basic AI techniques and concepts including rule-based systems, intelligent search, heuristics, knowledge representation and reasoning, predicate logic and pattern recognition. It introduces several AI application areas such as learning, vision, natural language processing, games, and expert systems. Open to upperclass and graduate students. 3 hours

CS 5821 Machine Learning The course will cover both theory and practice, applying a variety of Machine Learning techniques and models using available tools on large widely available data sets. R will be presumed, but Python and Numpy/Scipy will be used freely, as well as the natural language tools available in Python. Feature selection, model choices and relative performance measures will be presented within a Bayesian framework. Open to upperclass and graduate students. Prerequisites: MATH 2300 and (CS 3100 or CS 3310). A grade of "C" for undergraduates and "B" for graduates needed in prerequisite courses. 3 hours

CS 5950 Advanced Topics in Computer and Information Science The content of this course varies. It is intended to introduce the student to advanced topics which are normally offered as separate courses. The course may be taken more than once with approval of the student's advisor. Open to upperclass and graduate students. Prerequisite: Departmental approval. 1 to 3 hours

CS 5990 Independent Study in Computer Science Advanced students with good scholastic records may elect to pursue independently the study of some topic of special interest. Topics are chosen and arrangements are made to suit the needs of each particular student. Open to upperclass and graduate students. Prerequisite: Departmental approval. 1 to 3 hours

CS 6030 Studies in Computer Science Advanced work organized around varying topics in computer science. Students may take this course more than once. Open to graduate students only. Prerequisite: Approval of department. 3 hours

CS 6250 Advanced Computer Architecture Multiprocessor architectures, various interconnection networks, communication and synchronization techniques, data flow architectures. Open to graduate students only. Prerequisite: CS 5250 3 hours

CS 6260 Advanced Parallel Computations Advanced topics in parallel computations, such as: algorithms, complexity and parallel performance in the areas of graph algorithms, numerical algorithms, computer graphics, and aspects of parallel environments and languages. Students will be expected to read research papers and complete a semester project involving the use and implementation of parallel programming paradigms on current machines. Open to graduate students only. This course is restricted to the following: masters and doctorates in computer science, masters in electrical engineering, and doctorates in mathematics. Prerequisite: CS 5260 and (CS 4310 or CS 5310), a grade of "B" or better is required to satisfy any course prerequisite. 3 hours

CS 6310 Advanced Design and Analysis of Algorithms This course introduces students to advanced concepts for designing and analyzing algorithms. The effect of data structures on program design is investigated. The uses of data structures and algorithms in a variety of application areas are covered. Focus is on algorithmic thinking, performance guarantees and boundary cases, and efficient solutions to practical problems. Advanced topics will cover a selection of modern algorithms, and data structures, many of which come from real-world applications. Open to graduate students only. This course is restricted to the following: masters and doctorates in computer science, masters in electrical engineering, and doctorates in mathematics. Prerequisite: CS 4310 or CS 5310, a grade of "B" or better is required to satisfy any course prerequisite. 3 hours

CS 6320 Intractable Problems and Approximation Algorithms The course covers the theory of NP-completeness and techniques that help to apply the theory to practical problems. The model of non-deterministic Turing machines is used to classify various problems as NP (Non-deterministic Polynomial), Polynomial, NP-Complete, NP-Hard, and Pseudo-Polynomial. Problems in various computer science areas, such as scheduling, routing, compiler optimization, chip packaging, graph embedding, are used to illustrate the concepts and techniques. Effective approximation algorithms are designed and analyzed to deal with various NP-complete problems. Open to graduate students only. This course is restricted to the following: masters and doctorates in computer science, masters in electrical engineering, and doctorates in mathematics. Prerequisite: (CS 4310 or CS 5310) and CS 5800, a grade of "B" or better is required to satisfy any course prerequisite. 3 hours

CS 6400 Advanced Design of User Interfaces Advanced interaction techniques drawn from the current literature. Topics of interest include information search and display, visualization, virtual reality, and hypermedia environments. Open to graduate students only. Prerequisite: CS 5400 or permission of instructor. 3 hours

CS 6430 Database Management System Implementation A study of implementation techniques in database management systems. Topics include database system architecture, file organization and access methods, indexing, buffer management, performance analysis, query processing and optimization, concurrency control, transaction management, reliability, recovery, physical design and database tuning. Other topics include data warehousing, distributed and parallel databases. Open to graduate students only. This course is restricted to the following: masters and doctorates in computer science, masters in electrical engineering, and

doctorates in mathematics. Prerequisites: CS 5430 or CS 5541, a grade of "B" of better is required to satisfy any course prerequisite. 3 hours

CS 6530 Data Mining Introduces fundamental concepts, techniques, algorithms, and systems for data mining in databases. Topics include data pre-processing, data warehousing and online analytical processing, association mining, data classification, data clustering, and visual data exploration. Open to graduate students only. Prerequisites: CS 5310 and CS 5541, a grade of "B" or better is required to satisfy any course prerequisite. 3 hours

CS 6550 Advanced Operating Systems Advanced and current topics in operating systems research. Analysis of competing techniques will be undertaken to present a better understanding of tradeoffs in design decisions. Modeling and performance evaluation will also be presented. A detailed and theoretical view of the basic operating system concepts will be emphasized. Programming assignments involving simulation and performance evaluation will be required. Open to graduate students only. This course is restricted to the following: masters and doctorates in computer science, masters in electrical engineering, and doctorates in mathematics. Prerequisites: (CS 44310 or CS 5310) and CS 5541, a grade of "B" or better is required to satisfy any course prerequisite. 3 hours

CS 6560 Advanced Computer Networks: Anatomy of the Internet This course will cover the practical aspects of computer networks, with emphasis on the Internet. Various aspects of computer networking will be covered including: alternative link-layer, network-layer, and transport-layer technologies. LAN/WAN technologies, topologies, traffic analysis, congestion/flow control, routing, internetworking, multicast and Quality of Service (QoS). The goal of this course is to introduce the students to state-of-the-art network protocols and architectures. We will introduce the students to networking research and guide them to investigate novel ideas in the area via semester-long research projects. We will also look at industry trends and discuss some innovative ideas that have recently been developed. Some of the course material will be drawn from research papers, industry white papers and Internet RFC’s.Open to graduate students only. Prerequisite: CS 5550 or instructor approval. 3 hours

CS 6570 Wireless Networks This course will cover the fundamental aspects of wireless networks, with emphasis on current and next-generation wireless networks. Various aspects of wireless networking will be covered including: fundamentals of cellular communication, mobile radio propagation, multiple access techniques, mobility support, channel allocation, Wireless PAN/LAN/MAN standards, mobile as-hoc networks, wireless sensor networks, and routing in wireless and mobile networks. The goal of this course is to introduce the students to state-of-the-art wireless network protocols and architectures. We will introduce the students to wireless networking research and guide them to investigate novel ideas in the area via semester-long research projects. We will also look at industry trends and discuss some innovative ideas that have recently been developed. Some of the course material will be drawn from research papers, industry white papers and Internet RFC’s. Open to graduate students only. Prerequisite: CD 5550 or instructor approval. 3 hours

CS 6580 Pervasive Computing An in-depth study of emerging issues in pervasive environments focusing on components that build pervasive computing systems: smart devices, smart environments, and smart services and interactions with users. Topics include smart devices and services; context-aware and intelligent systems; autonomous systems and artificial life; ubiquitous communication; and ubiquitous system challenges and outlook. This is a research oriented course with theoretical and practical research projects involving opportunistic resource utilization networks; smart office and home spaces, and sensornets. Project topics will be suggested by the instructor, or proposed by students and accepted by the instructor. Open to graduate students only. Prerequisite: CS 5541 or CS 5550 (or equivalent course accepted by the instructor), a grade of "B" or better is required to satisfy any course prerequisite. 3 hours

CS 6600 Software Engineering This course introduces software life cycles with the concentration on software design and implementation. Students will apply various techniques and tools to design and implement a software system. Examples and exercises illustrating the use of several techniques and tools will be given. Student teams will be expected to complete a large project using one of the techniques/tools presented. Open to graduate students only. This course is restricted to the following: masters and doctorates in computer science,

masters in electrical engineering, and doctorates in mathematics. Prerequisite: CS 5310, a grade of "B" or better is required to satisfy any course prerequisite. 3 hours

CS 6610 Software Testing Students will learn practical ways to design high quality tests during various phases of software development. Students learn the theory behind criteria-based test design and to apply the theory in practice. Topics include test design, test automation, test coverage criteria, and how to test software in state-of-the-art software development environments. Open to graduate students only. This course is restricted to the following: masters and doctorates in computer science, masters in electrical engineering, and doctorates in mathematics. Prerequisite: CS 5310, a grade of "B" or better is required to satisfy any course prerequisite. 3 hours

CS 6700 Advanced Computer and Information Security This course covers advanced and current topics in selected areas of computer and information security such as the establishment of security associations, securing neighbor discovery, secure routing in multi-hop wireless networks, privacy protection, secure protocols for preventing selfish behavior in networks and systems, and trust and security in open computing systems. The course is research oriented and includes student research projects, which may be done in teams. Open to graduate students only. Prerequisite: CS 5700 with a grade of “B” or better. 3 hours

CS 6720 Pattern Recognition A survey of modern methods for computer recognition of patterns in varied applications such as digital images, human speech and sound, and grammar-based sequences. Various approaches are developed, including heuristic search, Fourier analysis, Markov models, template matching, and grammatical inference. Computational aspects and efficiency of different methods and algorithms are emphasized. Students must complete a project using methods developed in the course. Open to graduate students only. This course is restricted to the following: masters and doctorates in computer science, masters in electrical engineering, and doctorates in mathematics. Prerequisites: (CS 4310 or CS 5310) and undergraduate-level statistics, a grade of "B" or better is required to satisfy any course prerequisite. 3 hours

CS 6800 Advanced Theory of Computation The theory of computation emphasizing equivalent models of computation, properties of recursively enumerable languages, computability (decidability and semi-decidability), recursive and partial recursive functions, and complexity. The Chomsky hierarchy is also reviewed and some of the more advanced topics (than those covered in the prerequisite) are addressed. Students are expected to read research papers and complete a semester project. Open to graduate students only. This course is restricted to the following: masters and doctorates in computer science, masters in electrical engineering, and doctorates in mathematics. Prerequisite: CS 5800, a grade of "B" or better is required to satisfy any course prerequisite. 3 hours

CS 6810 Compiler Optimization Theory, design, and implementation of compiler optimization techniques. Topics include: intermediate representations, advanced code generation, control and data-flow analysis, dynamic compilation, global register allocation, and instruction scheduling. A major project is required. Prerequisite: (CS 5541 and CS 5800) or CS 5810, a grade of "B" or better is required to satisfy any course prerequisite. 3 hours

CS 6820 Advanced Artificial Intelligence Current research in one or more artificial intelligence application areas, e.g., computer vision and image processing, natural language and speech processing, expert systems, computer learning or other A.I. topics. Open to graduate students only. This course is restricted to the following: masters and doctorates in computer science, masters in electrical engineering, and doctorates in mathematics. Prerequisite: (CS 4310 or CS 5310) and CS 5820, a grade of "B" or better is required to satisfy any course prerequisite. 3 hours

CS 6910 Seminar in Computer Science Open to graduate students only. 1-3 hours

CS 6970 Master’s Project Students will work on a special project in a computer science area. A technical report on the results of each student’s project must be approved by the course instructor and published as a departmental technical report. Prerequisites: Graduate level competency in computer science and the subject areas of the project. Approval of the instructor and the department required. Open to graduate students only. 2 to 6 hours

CS 7000 Master's Thesis Please refer to The Graduate College section for course description (GRAD 7000). Graded on a Credit/No Credit basis. May be repeated for credit. Open to graduate students only. Prerequisite: Approved application from department and Graduate College. 1 to 6 hours

CS 7100 Independent Research Please refer to The Graduate College section for course description (GRAD 7100). Graded on a Credit/No Credit basis. May be repeated for credit. Open to graduate students only. Prerequisite: Approved application. 2 to 6 hours.

CS 7120 Professional Field Experience Please refer to The Graduate College section for course description (GRAD 7120). Graded on a Credit/No Credit basis. May be repeated for credit. Open to graduate students only. Prerequisite: Approved application. 2 to 12 hours

CS 7250 Doctoral Research Seminar Please refer to The Graduate College section for course description (GRAD 7250). Graded on a Credit/No Credit basis. May be repeated for credit. Open to graduate students only. Prerequisite: Approved application. 2 to 6 hours

CS 7300 Doctoral Dissertation Please refer to The Graduate College section for course description (GRAD 7300). Graded on a Credit/No Credit basis. May be repeated for credit. Open to graduate students only. Prerequisite: Approved application from department and Graduate College. 1 to 15 hours

CS 7350 Graduate Research Please refer to The Graduate College section for course description (GRAD 7350). Graded on a Credit/No Credit basis. May be repeated for credit. Open to graduate students only. Prerequisite: Approved application. 2 to 10 hours

Electrical and Computer Engineering

ECE 5150 Real-Time Computing Characterizing, modeling, and specifying real-time systems. Software life cycle. Designing and programming sequential and concurrent real-time systems. Scheduling. Distributed real-time computing. Engineering case studies using C++/Ada. This course is restricted to graduate students majoring in either Computer Engineering or Electrical Engineering. 3 hours

ECE 5200 Power Electronics Behavior of power semiconductor devices (such as BJT's, MOSFET's, SCR's, GTO's, and IGBT's) in circuits and as switches. Applications of the switches in AC-DC, DC-DC, DC-AC, and AC-AC converters. Switch-mode converters for power supplies, DC and AC motor drives, wind and solar inverters, hybrids, and utility systems. Magnetic circuits and electro-magnetic interference. Open to graduate students only. Restricted to master's or doctoral students in electrical and computing engineering. 3 hours (3 – 0)

ECE 5240 Introduction to VLSI Technology A course in VLSI semiconductor devices, modern CMOS technology, crystal growth, fabrication, and basic properties of silicon wafers. It will focus on lithography, thermal oxidation, (Si/Si)2, interface, dopant diffusion, ion implantation, thin film deposition, etching, and back-end technology. This course is restricted to graduate students majoring in either Computer Engineering or Electrical Engineering. 3 hours

ECE 5300 Electric Power Systems Three-phase circuits and pre-unit notation. Network analysis, load flow studies, symmetrical system faults, and unbalanced faults using symmetrical components, system stability and transients. Open to graduate students only. Restricted to graduate students in electrical or computing engineering. 3 hours (3 – 0)

ECE 5410 Electronic Instrumentation Analysis of instrumentation systems including basic instrumentation concepts, dynamic analysis of instruments, transducers, classical analog methods, digital methods and application. This course is restricted to graduate students majoring in either Computer Engineering or Electrical Engineering. 3 hours

ECE 5450 Introduction to Micro Electro Mechanical Systems This course introduces students to rapidly emerging, multi-disciplinary, and exciting field of Micro Electro Mechanical Systems (MEMS). It will teach fundamentals of micromachining and microfabrication techniques, including planar thin-film process technologies, photolithographic techniques, deposition and etching techniques, and the other technologies that are central to MEMS fabrication. Skills needed for the design and analysis of devices and systems in mechanical, electrical, fluidic, and thermal energy/signal domains, and will teach basic techniques for multi-domain analysis (e.g., electromechanical, electrothermal). Fundamentals of sensing and transduction mechanisms (i.e. conversion of non-electronic signals to electronic signals), including capacitive and piezoresistive techniques, and design and analysis of micromachined miniature sensors and actuators using these techniques will be covered. Many examples of existing devices and their applications will be reviewed. Open to graduate students only. Restricted to graduate students in electrical or computer engineering. 3 hours

ECE 5510 Application Specific Integrated Circuit Design Design, analysis and implementation of application-specific circuits (ASIC.) Emphasis will be placed on programmable design (including field programmable gate arrays (FPGA) and programmable logic devices (PLD). Semi-custom design will also be discussed and full-custom design will be briefly introduced. Introduction to contemporary CAD systems. This course is restricted to graduate students majoring in either Computer Engineering or Electrical Engineering. 3 hours

ECE 5530 Microcontroller Applications This course is intended to give students the ability to specify, design, and test real-time embedded microcontroller systems. Open to graduate students only. Restricted to graduate students in electrical or computer engineering. 3 hours

ECE 5540 Digital Electronics The electronic and logic aspects of digital integrated circuits and their applications. Transistor-level design and simulation of digital electronic circuits.Open to graduate students only. Restricted to graduate students in electrical or computing engineering. 3 hours

ECE 5550 Digital Signal Processing Discrete-time signals and systems, time and frequency domain representations. Structures of discrete-time systems and digital filters. DFT and FFT methods of special analysis and estimation. Discrete Hilbert Transforms and multidimensional signal processing. This course is restricted to graduate students majoring in either Computer Engineering or Electrical Engineering. 3 hours

ECE 5570 Design of Reconfigurable Digital Machines Introduction to hardware design languages. Modeling and simulation using VHDL. Advanced design techniques for digital machines based on Field Programmable Gate Arrays and Complex Programmable Logic Devices. System design with on-line reprogrammable FPGAs. This course is restricted to graduate students majoring in either Computer Engineering or Electrical Engineering. 3 hours

ECE 5580 Computer Architecture This course examines fundamental computer system design trade-offs and the state-of-the-art in computer architecture with case studies of current and proposed microprocessor architectures. Students will study datapath pipelining/superpipelining, dynamic instruction scheduling, hyper-threading, improving memory throughout, SIMD parallelism, VLIM/EPIC processors, and multi-core processors. Open to upperclass and graduate students. Restricted to accelerated master's and graduate students in electrical and computer engineering. Prerequisite: ECE 3570 or graduate student in electrical and computer engineering or instructor's approval. 3 hours (3 – 0)

ECE 5600 Time-varying Fields Electrodynamics, Maxwell's equations, Boundary value problems and solutions of Helmholtz Equation in different coordinate systems, Green's functions, transmission lines and wave guides. Introduction to perturbational and variational methods. This course is restricted to graduate students majoring in either Computer Engineering or Electrical Engineering. 3 hours

ECE 5640 Communication Systems Introduction to digital and analog communication systems. Design constraints of noise and bandwidth, comparison of various modulation techniques, and statistical methods. Information and channel capacity. Restricted to master's or doctoral students in electrical and computing engineering. 3 hours

ECE 5705 Feedback Systems Design principles of linear and non-linear feedback systems in both the frequency and time domain. Open to graduate students only. Restricted to master's or doctoral students in electrical and computer engineering. 3 hours

ECE 5710 State Space Control Systems An introduction to the state-space representation of linear system. As such, familiarity with the classical Laplace transform techniques will be assumed but not emphasized. Instead, time--domain analysis of differential equations on linear systems will be performed. This course forms the basis upon which modern electrical engineering is founded. Open to graduate students only. Restricted to graduate students in electrical or computing engineering. 3 hours

ECE 5730 Foundations of Neural Networks Biological and artificial neural networks from an electrical and computer engineering perspective. Neuron anatomy. Electrical signaling, learning, and memory in biological neural networks. Development of neural network circuit models. Artificial neural systems including multilayer feedforward neural networks, Hopfield networks and associative memories. Electronic implementations and engineering applications of neural networks. This course is restricted to graduate students majoring in either Computer Engineering or Electrical Engineering. 3 hours

ECE 5800 System Modeling and Simulation This is a first course in the principles of mathematical modeling of stochastic and deterministic systems. It will focus on analytical models, mathematical rigor and computer simulation of problems. Students will simulate a number of systems using appropriate stochastic and deterministic models using a computer. This course is restricted to graduate students majoring in either Computer Engineering or Electrical Engineering. 3 hours

ECE 5820 An introduction to probability, random variables, random processes, correlation functions and spectral density, primarily as they apply to signal processing in electrical engineering. Special consideration will be given to the stochastic signals, their corresponding response and the optimization of linear systems. Open to graduate students only. Restricted to graduate students in electrical or computing engineering. 3 hours

ECE 5850 Mechatronics A course in fundamentals of motion control, primarily as it is applied to robotics. Students will learn the basics of control systems as applied to multiaxis servo systems. Appropriate time will be devoted to develop a sound basis in the electro-mechanical discipline. This course is restricted to graduate students majoring in either Computer Engineering or Electrical Engineering. 3 hours

ECE 5950 Introduction to Advanced Topics To introduce students to advanced topics in electrical/computer engineering not included in other course offerings. Restricted to master's or doctoral students in electrical and computing engineering. 3 hours

ECE 6050 Advanced Microprocessor Applications This course is intended to give graduate students the ability to specify, design, simulate and partially test the performance of real-time high-performance microprocessor systems. It addresses the design problems of interfacing to multi-processor system bus and the design of local and shared memory modules for contemporary RISC and CISC processors. Open to graduate students only. This course is restricted to master’s or doctoral students in computer engineering or electrical engineering. Prerequisite: ECE 5510 or ECE 5570 or equivalent. 3 hours (3 – 0)

ECE 6200 Power Electronics: Dynamics and Control Isolated transformer and resonant switch mode converter topologies. Steady-state analysis, large-signal and small-signal modeling and analyses, and state-space and discrete time models. Magnetics, transformers, control techniques, and power conditioning of converters. PWM control. Advanced application areas: electric drives, power systems - HVDC, FACTS and STATCOM. Gallium, arsenide (GaAs), polytypes of silicon carbide (SIC), and gallium nitrate (GaN) semi-conductive devices introduced. Open to graduate students only. This course is restricted to master’s or doctoral students in computer engineering or electrical engineering. Prerequisite: ECE 5200 or equivalent; with a grade of "C" or better. 3 hours (3 – 0)

ECE 6300 Transmission Systems Control Power Systems Topics: Protection and Control, Transmission Line Reliability and Security, Customization of Energy Using Solid-state Devices and Switches, Power Quality, State Estimation - Theory and Implementation, and Risk Assessment. Open to graduate

students only. This course is restricted to master's or doctoral students in computer engineering or electrical engineering. Prerequisite: ECE 5300 or equivalent; with a grade of "C" or better. 3 hours (3 – 0)

ECE 6360 Applied Optics and Optical System Design Classical and conventional optical methods in use by the engineering and research community. Moire, Speckle and Speckle-shearing interferometry. Holographic interferometry. Photo-elasticity and electronic speckle pattern interferometry. Optics and lasers for research and industrial applications. Digital image processing and optical system design. Open to graduate students only. This course is restricted to master's or doctoral students in computer engineering or electrical engineering. Prerequisite: Consent of instructor. 3 hours

ECE 6410 Advanced Electronic Instrumentation Description, analysis, and design of instrumentation systems with emphasis on sensors, signal acquisition, amplification, and processing. Both analog and digital sensors and signal processors will be considered. Open to graduate students only. This course is restricted to master's or doctoral students in computer engineering or electrical engineering.
Prerequisite: ECE 5410 3 hours

ECE 6450 Advanced Micro Electro Mechanical Systems This course covers advanced topics dealing with MEMS technologies, transduction mechanisms, and microfabricated sensors and actuators. Many emerging micromachining technologies such as laser and electro-discharge machining, and non-conventional materials such as SiC and diamond are discussed. Transduction techniques, including electromagnetic, piezoelectric, resonant, tunneling, and others are presented (to the extent permitted by time available). The course reviews different types of sensors for measurement of physical parameters such as acceleration, rotation rate, pressure, as well as chemical and gaseous parameters for gas and chemical sensing applications. It also reviews different micro-actuation techniques and their application in MEAS. Open to graduate students only. Prerequisite: ECE 5450 or instructor approval. 3 hours

ECE 6500 Advanced Computer Architecture An introduction to the problems involved in designing and analyzing current machine architectures. Simulation and design automation of digital systems. The completion of a substantial design project is required. Open to graduate students only. This course is restricted to graduate students majoring in either Computer Engineering or Electrical Engineering. Prerequisites: ECE 5520 or ECE 5530. 3 hours

ECE 6550 Digital Image Processing This course will cover fundamental concepts and analytical tools for digital image processing (DIP) and applications. Use of transforms for image filtering and analysis; image coding and compression algorithms are emphasized. Students are expected to complete a series of computer assignments and a research project in DIP. Open to graduate students only. Prerequisite: CENM, EENM, or ELCD admission. 3 hours

ECE 6560 Multirate Signal Processing An advanced digital signal processing course that develops the theory, numerical simulations and define various implementations for digital multirate signal processing. Topics covered will include digital filtering, filter-decimation, interpolation-filtering, rational rate changes, CIC filters, half-band filtering, polyphase filters, and filter bank analysis and synthesis. Open to graduate students only.
Prerequisite: ECE 5550 or equivalent. 3 hours

ECE 6565 Adaptive Filters and Systems This is an advanced digital signal processing class that will develop the theory, Matlab simulations and define various implementations of linear estimation theory applied to adaptive signal processing. Topics covered will include a estimation theory, Wiener and Kalman Filters, and various Adaptive Filters and Systems (Steepest decent, LMS, RLS, and block implementations). Open to graduate students only. Restricted to master's or doctoral students in electrical and computing engineering. Prerequisite: ECE 5550 or equivalent. 3 hours (3 – 0)

ECE 6570 Biomedical Signal Processing This course presents fundamental concepts and approaches in biomedical signal processing. While several signals such as neural, cardiac, muscular, and speech will be investigated, we will give special attention to signals with bioelectric origins and will review their biological properties and clinical significance. Processing and analysis will cover topics from signal acquisition (including biopotential electrodes and amplifiers, and signal conditioning), sampling issues, reduction of noise and artifacts,

and extraction of clinically significant features. The course requires a project from each student to allow for an opportunity to investigate the performance of methods on real physiological signals. Open to graduate students only. Prerequisite: ECE 5550 or equivalent. 3 hours

ECE 6640 Digital Communications This course covers advanced concepts of modern digital communication theory, including information theory and coding theory. Important practical topics of recent interest are also covered. Open to graduate students only. Restricted to master's or doctoral students in electrical and computing engineering. Prerequisite: ECE 5640 3 hours

ECE 6650 Medical Imaging Systems and Analysis Introduction to medical imaging systems and analysis of the different modalities (X-Ray, CT, NM, Ultrasound, and MRI) in terms of the physics of the modality, the system, and image reconstruction. Sampling, implementation of multidimensional signal processing, and image quality issues (noise, resolution, geometric distortion, and contrast) are addressed for each modality. Open to graduate students only. Prerequisite: ECE 5550 with a grade of “B” or better or instructor approval. 3 hours

ECE 6660 Mobile Communications This course covers cellular system principles, cell coverage and traffic, and specifications and standards for analog and digital systems. Open to graduate students only. This course is restricted to graduate students majoring in either Computer Engineering or Electrical Engineering. Prerequisite: ECE 6640 3 hours

ECE 6700 Modern Control Theory Modern control theory using “state variable” formulations provides a unified approach to a wide variety of problems. Depends on matrix theory and linear algebra. Open to graduate students only. Restricted to master's or doctoral students in electrical and computing engineering. Prerequisite: ECE 5710 3 hours

ECE 6710 Optimal Control Systems Optimal control dynamic programming, Portryagin's principle, linear optimal regulator, system identification. Stochastic and adaptive control. Open to graduate students only. Prerequisite: ECE 6700 3 hours

ECE 6720 Fuzzy Control Systems Theoretical aspects of fuzzy sets, fuzzy logic, approximate reasoning, and fuzzy control, as well as implementation issues of fuzzy controllers. Supervisory controllers using fuzzy automata. Hardware accelerators for fuzzy logic. Open to graduate students only. Prerequisites: (ECE 5510 or ECE 5570 or equivalent) and (ECE 5710 or ECE 5705 or equivalent). 3 hours

ECE 6730 Advanced Neural Networks Advanced topics in biological and artificial neural networks from an electrical and computer engineering perspective. Modeling, simulation, and implementation of neural networks. Information theory and knowledge representation. Adaptation and learning. Review of current research. Open to graduate students only. Prerequisites: ECE 5730 or instructor approval. 3 hours

ECE 6740 Nonlinear Control Systems This is a first course in nonlinear systems. Students will learn to characterize nonlinear phenomena such as limit cycles and chaotic behavior, both analytically and numerically. Students will also delve into the world of strange attractors and fractals. All this will be applied to a number of engineering, mechanical, biological and chemical problems. Specifically, students will consider the family nonlinear control problems (such as the inverted pendulum) and chaotic communication systems (such as the Cummo and Chua circuits). Open to graduate students only. Prerequisite: ECE 5710 3 hours

ECE 6950 Topics in Electrical and Computer Engineering Special topics in advanced area of Electrical Engineering or Computer Engineering not included in other courses. Open to graduate students only. Restricted to master's or doctoral students in electrical and computing engineering. 3 hours

ECE 6970 Problems in Electrical and Computer Engineering Special problems based on individual need or interest under the direction of a member of the graduate faculty. Open to graduate students only. Restricted to master's or doctoral students in electrical and computing engineering. 1 to 6 hours

ECE 6990 Practical Training Designed for international students who wish to pursue practical training in off-campus activities in industrial and/or other similar settings. To be eligible, students must be registered in the ECE department, must have completed at least 6 credits toward an advanced degree and have the approval of their faculty advisor and the department chair. Computer Engineering students may substitute ECE 6990 for up to 2 credit hours of ECE 6900. Electrical Engineering students may take up to 2 credit hours of ECE 6990 as part of their course work. Open to graduate students only. 1 to 2 hours

ECE 7000 Master's Thesis Please refer to The Graduate College section for course descriptions. Graded on a Credit/No Credit basis. May be repeated for credit. Open to graduate students only. Prerequisite: Approved application from department and Graduate College. 1 to 6 hours

ECE 7100 Independent Research Please refer to The Graduate College section for course descriptions. Graded on a Credit/No Credit basis. May be repeated for credit. Open to graduate students only. Restricted to doctoral students in electrical and computer engineering. Prerequisite: Approved application. 2 to 6 hours

ECE 7250 Doctoral Research Seminar Please refer to The Graduate College section for course descriptions. Graded on a Credit/No Credit basis. May be repeated for credit. Open to graduate students only. Restricted to doctoral students in electrical and computer engineering. Prerequisite: Approved application and department approval. 2 to 6 hours

ECE 7300 Doctoral Dissertation Please refer to The Graduate College section for course descriptions. Graded on a Credit/No Credit basis. May be repeated for credit. Open to graduate students only. Restricted to doctoral students in electrical and computer engineering. Prerequisite: Approval of department and Graduate College. 1 to 15 hours

Engineering and Applied Sciences

ENGR 7250 Doctoral Research Seminar Please refer to the Graduate College section for course descriptions. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisite: Doctoral students only. 2 to 6 hours

ENGR 7300 Doctoral Dissertation Please refer to the Graduate College section for course descriptions. May be repeated for credit. Graded on a Credit/No Credit basis. Restricted to Doctoral students in the Engineering Track only. Prerequisites: Department and Graduate College approval. 1 to 18 hours

Engineering Design, Manufacturing, and Mangement Systems

EDMM 5070 Computer Integrated Manufacturing Topics related to computer integrated manufacturing. Topics include computer process control, robotics, group technology, CNC, CAD, FMS. Hands-on experience with miniature computer controlled equipment will be included. Open to upperclass and graduate students. 3 hours (3 – 0)

EDMM 5460 Concurrent Engineering The synthesis of automated design, analysis, and manufacturing processes through integrated computer systems. Topics in automated graphics, wireframe, surface and solids modeling, boundary element analysis, and manufacturing process generation will be investigated. Open to upperclass and graduate students. Prerequisite: Recommended, EDMM 2460 or equivalent. 3 hours (3 – 0)

EDMM 5500 Advanced Plastics Processing Review of optimum machine components and systems. Identification of key process variables within injection molding and extrusion systems. Discussion of the causes of process instability. Determination of the process capability within injection molding and extrusion systems. Open to upperclass and graduate students. Prerequisite: Recommended, EDMM 2500 or equivalent. 3 hours (3 – 0)

EDMM 5520 Casting Simulation and Solidification The process of computer simulation illustrates the way a casting is filled and how the alloy is allowed to cool. By simulating the process conditions to observe 3-D fill and solidification, researchers will be able to predict potential defects in the casting and redesign the process to eliminate the defects, before making actual castings. Activities will compare theory to practice. Open to upperclass and graduate students. 3 hours (2 – 2)

EDMM 5570 Topics in Manufacturing Group study of special topics in manufacturing. The specific topic will be shown in the course title when scheduled. May be repeated for credit with a different topic. Open to upperclass and graduate students. Prerequisite: Department approval. 3 hours (3 – 0)

EDMM 6450 Design for Manufacturability Production methods and materials will be applied to product development projects that will relate to the design of efficient and cost effective manufacturing. Topics include the design of part families, geometric classification coding for storage and retrieval, database transfer compatibility standards, process influence on functional product design, statistical determination and the application of linear and geometric tolerancing. Open to graduate students only. 3 hours

EDMM 6560 Material Selection and Processing Properties of metals, ceramics, polymers, wood, and composites. Factors in selection of materials and their fabrication process. Failure mechanisms and prevention. Open to graduate students only. Prerequisite: An introductory course in engineering materials or permission of instructor. 3 hours

EDMM 6570 Studies in Manufacturing Advanced work organized around topics of current interest in manufacturing and technology. The specific topic will be shown in the course title when scheduled. May be repeated for credit with a different topic. Open to graduate students only. Prerequisite: Departmental approval. 3 hours

EDMM 6580 CAM Applications Custom design of post-processors. Creation of CNC programs through graphical-based systems. Strategies and techniques, including Computer-Aided Processing Planning (CAPP), to migrate data from CAD to CAM systems. Computer hardware and software requirements for integrated manufacturing. Open to graduate students only. Prerequisite: Recommended, EDMM 5070 or equivalent. 3 hours

EDMM 6810 Process Monitoring and Control The study of process improvement techniques which will ultimately lead to quality products. Process improvement includes the reduction of variability in process during the manufacturing stage resulting in improved product quality. A team problem solving approach utilizing data acquisition systems and statistical methods are emphasized. Practical industrial applications of process monitoring and control are reviewed. Open to graduate students only. Prerequisite: Recommended, STAT 2600 and IEE 2610, or equivalent. 3 hours

EDMM 6830 Thesis Proposal Study of research methodologies including review and synthesis of previous work, and strategies for conducting investigation. Discussion of format and expectations of the master's thesis. An approved thesis proposal is required for the completion of this course. Open to graduate students only. Prerequisite: Departmental approval. 1 to 3 hours

EDMM 6970 Problems in Manufacturing Special problems of individual need or interest under the direction of a member of the graduate faculty. May be elected with approval of department chairperson and faculty member. Application must be submitted and approved prior to the election of the course. Open to graduate students only. Prerequisite: Departmental approval. 3 hours

EDMM 6980 Readings in Manufacturing Directed individual study of topics or bodies of knowledge not otherwise treated in department courses. A maximum of three credit hours can be earned in EDMM 6980 as applicable to degree program. May be repeated for credit. Open to graduate students only. Prerequisite: Approval of advisor preceding enrollment. 1 to 3 hours

EDMM 6990 Practical Training Designed for international students who wish to pursue practical training in off-campus activities in industries or institutions. This course will not count toward a degree

program. May be elected with approval of department chairperson and faculty member. Application must be submitted and approved prior to election of the course. Open to graduate students only. Prerequisite: Departmental approval. 1 to 12 hours

EDMM 7000 Master's Thesis Please refer to The Graduate College section for course description. Graded on a Credit/No Credit basis. May be repeated for credit. Open to graduate students only. Prerequisite: Departmental approval. 1 to 6 hours

Engineering Management

EM 5050 Continuous Improvement in Operations The purpose of this course is to introduce business and engineering students as well as managers to the process of kaizen (Continuous Improvement) and Total Employee Involvement. Open to upperclass and graduate students. 3 hours (3 – 0)

EM 5080 Advanced Quality Management Analysis and application of new concepts in the field of quality control. Tests of significance, probability studies, and other uses of statistics as applied to quality control. Open to upperclass and graduate students. Prerequisite: Recommended, IEE 2622 or EDMM 3280 or IEE 5010 or equivalent. 3 hours (3 – 0)

EM 5120 Management of Service Operations An analysis of service industries, exploring differences in planning and controlling operations. Emphasis will be on service system design, service quality, and comparing customer expectations with their perceptions. Open to upperclass and graduate students. 3 hours (3 – 0)

EM 5570 Topics in Engineering Management Study of special topics in engineering management. The specific topic will be shown in the course title when scheduled. May be repeated for credit with a different topic. Open to upperclass and graduate students. Prerequisite: Departmental approval. 3 hours (3 – 0)

EM 6000 Concepts and Principles of Engineering Management Concepts, models, and applications of organizational behavior in engineering management settings. Understanding and analyzing the role of human behavior in complex sociotechnical systems. Open to graduate students only. 3 hours

EM 6120 Production/Operations Management Topics relating to the planning and control functions of manufacturing systems are presented. These topics include management of the production system, strategies of product design and process selection, design of production systems, plant location, shop floor control, purchasing, quality management, and productivity improvement. Open to graduate students only. Prerequisite: Recommended, EDMM 3260 or IEE 4160 or IEE 5010, or equivalent. 3 hours

EM 6140 Project Management To address the basic rules of managing projects and the advantages and disadvantages of this method of getting things done. The problems of selecting projects, initiating them, and operating and controlling them are discussed. The demands made on the project manager and the interaction with the parent organization are also presented. Open to graduate students only. 3 hours

EM 6220 Engineering Management Seminar A critical analysis of the literature and current practice in applied engineering management research. Topics reflect current issues and classic methods and have included: frameworks for change, uncertainty, ethics and professional responsibility, organizational culture, measurement, and implementation. Open to graduate students only. Prerequisite: EM 6000 or IME 6000 or equivalent. 3 hours

EM 6570 Studies in Engineering Management Advanced work organized around topics of current interest in engineering management. The specific topic will be shown in the course title when scheduled. May be repeated for credit with a different topic. Open to graduate students only. Prerequisite: Departmental approval. 3 hours (3 – 0)

EM 6970 Projects in Engineering Management Special projects of individual need or interest under the direction of a member of the graduate faculty. May be elected with approval of department chairperson and faculty member. Application must be submitted and approved prior to the election of the course. Open to graduate students only. Prerequisite: Departmental approval. 3 hours

EM 6980 Readings in Engineering Management Directed individual study of topics or bodies of knowledge not otherwise treated in department courses. A maximum of three hours can be earned in EM 6980 as applicable to degree programs. May be repeated for credit. Open to graduate students only. Prerequisite: Approval of advisor preceding enrollment. 1 to 3 hours

EM 6990 Practical Training in Engineering Management Designed for students who wish to pursue practical training in off-campus activites in industries or institutions. May be elected with approval of department chairperson and faculty member. Application must be submitted and approved prior to election of the course. A maximum of three hours can be earned in EM 6990 as applicable to degree programs with approval of academic advisor. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisite: Departmental approval. 1 to 12 hours

Graphic and Printing Science

GPS 5100 Printability Analysis Relationships between printed substrate, ink, printing process and resulting print quality from both the theoretical and measurement standpoints. Print recognition and printing problems from the point of view of substrate formation and its physicochemical properties, ink characteristics, and the printing process parameters. Main techniques of printability evaluation will include modern optical methods of light interaction with both printed and unprinted substrate, spectrophotometry, and image analysis. Open to upperclass and graduate students. 3 hours (2 - 3)

GPS 5201 Color Printing and Substrates The interactions between ink and substrates are discussed for different printing processes. Digital prepress methods will be introduced with the purpose of preparing jobs for display, web or printing by different processes. Printing processes covered will be Offset Lithography, Rotogravure, Flexography, Letterpress, Screen and Digital. The colorant and substrate requirements (ink and paper, film etc.) for each process are discussed. Restricted to Graduate standing or Accelerated Masters only. Prerequisites: GPS 2150 or PAPR 2420 or PAPR 3420 or equivalent. 3 hours (2 – 3)

GPS 6210 Nonimpact Printing Nonimpact printing processes are discussed in terms of fundamental printing mechanisms. The effects of substrate, paper, for example, properties on the printing processes are considered. Processes discussed include electrophotography, electrography, ink jet, die sublimation, magnetography, and ionography. Open to graduate students only. Prerequisites: PAPR 3420 or GPS 3570 or equivalent. 3 hours (2 – 3)

Industrial & Entrepreneurial Engineering

IEE 5010 Survey of Industrial Engineering Topics Course devoted to studying the basics of the industrial engineering profession. Subjects will include work analysis, engineering economy, statistical quality control, production planning and control, and material handling. Emphasis is placed on the application of these techniques to manufacturing related problems. This course cannot be applied for credit toward the Masters of Science degrees in Engineering Management or Industrial Engineering. Open to upperclass and graduate students. Prerequisite: MATH 1220 or MATH 1700 or MATH 2000; Recommended: STAT 2600 or 3660, or equivalent. 3 hours (3 – 0)

IEE 5160 Design of Experiments and Regression Analysis Topics related to experimental design and regression analysis. Topics include randomized blocks, Latin squares, factorials, multiple correlation and regression, and its application to response surfaces. Open to upperclass and graduate students. Prerequisite: Recommended, IEE 2610 or equivalent. 3 hours (3 – 0)

IEE 5420 Human Factors Engineering The process of designing for human use. The course covers the study of the interactions between the individual, equipment, products, and the environment in any human-

task-environment system. Topics include human capabilities and limitations; human input, output, and control; work space design; and the work environment. Open to upperclass and graduate students.
Prerequisites: Recommended, IEE 2610 or equivalent. 3 hours (3 – 0)

IEE 5570 Topics in Industrial Engineering Study of special topics in industrial engineering. The specific topic will be shown in the course title when scheduled. May be repeated for credit with a different topic. Open to upperclass and graduate students. Open to upperclass and graduate students. Prerequisite: Department approval. 3 hours (3 – 0)

IEE 6040 Facilities Planning and Design An analytical approach to the planning and design of manufacturing facilities and material handling systems. Open to graduate students only.
Prerequisite: Recommended, EDMM 4040 or IEE 4010. 3 hours

IEE 6060 Capital Budgeting and Cost Analysis Concepts, principles, and techniques of making decisions pertaining to the acquisition and retirement of capital goods by industry and government. Topics include the time value of money, basic economic decision models, effect of taxation and depreciation on economic decision, and capital allocation. Open to graduate students only. 3 hours

IEE 6080 Reliability Engineering The formulation of mathematical models for reliability allocation and redundancy. Topics include time dependent and time independent prediction measures for both maintained and non-maintained systems. Open to graduate students only. Prerequisites: Recommended, IEE 2610 and (IEE 2620 or IEE 2621) or equivalent. 3 hours

IEE 6100 Linear Programming for Engineers The study of linear programming models as applied to engineering problems. Topics include Revised Simplex Method, Duality Theory, Post-Optimality Analysis, Interior Point Algorithms, Column Generation and Decomposition Techniques, Transportation Problem, Assignment Problem, Multiple Objective Problems, and Data Envelopment Analysis. Open to graduate students only. Prerequisite: Recommended, MATH 2300 or MATH 3740. 3 hours

IEE 6110 Deterministic Methods in Operations Research Concepts and techniques of deterministic operations research with emphasis on industrial applications. Topics include Network Models, Integer Programming, and Nonlinear Programming. Open to graduate students only. Prerequisites: Recommended, IEE 3110 or IEE 6100. 3 hours

IEE 6130 Stochastic and Heuristic Methods in Operations Research Concepts and techniques of stochastic operations research with emphasis on industrial applications. Topics include Queueing Theory, Decision Analysis, Dynamic Programming, Scheduling, and Metaheuristics. Open to graduate students only.
Prerequisites: Recommended, IEE 3110 and STAT 6670. 3 hours

IEE 6300 Advanced Simulation Modeling and Analysis Advanced topics in modeling of complex systems using both discrete and continuous simulation. Emphasis on the simulation of manufacturing systems. Open to graduate students only. Prerequisites: Recommended, IEE 2610 and (IEE 2620 or IEE 2621) or equivalent. 3 hours

IEE 6420 Ergonomics and Occupational Biomechanics Topics related to work physiology and biomechanics. Topics include anthropometry, skeletal system and muscle, neuromuscular control system, biomechanics, respiratory system, circulatory systems, and metabolic system. Open to graduate students only.
Prerequisite: Recommended, IEE 2610 or equivalent. 3 hours

IEE 6430 Physiology of Work A thorough review of the musculoskeletal system and energy development in the work environment. A practical guide to what the body can do and how this is influenced by the respiratory, circulatory, and metabolic systems. Laboratory projects emphasize applications in actual work tasks. Open to graduate students only. Prerequisite: Recommended, IEE 2610 or equivalent.
3 hours

IEE 6570 Studies in Industrial Engineering Advanced work organized around topics of current interest in engineering and technology. The specific topic will be shown in the course title when scheduled. Open to graduate students only. Prerequisite: Departmental approval. 3 hours

IEE 6830 Thesis Proposal Study of research methodologies including review and synthesis of previous work, and strategies for conducting investigation. Discussion of format and expectations of the master's thesis. An approved thesis proposal is required for the completion of this course. Open to graduate students only. Prerequisite: Departmental approval. 1 to 3 hours

IEE 6970 Problems in Industrial Engineering Special problems of individual need or interest under the direction of a member of the graduate faculty. May be elected with approval of department chairperson and faculty member. Application must be submitted and approved prior to the election of the course. Open to graduate students only. Prerequisite: Departmental approval. 3 hours

IEE 6980 Readings in Industrial Engineering Directed individual study of topics or bodies of knowledge not otherwise treated in department courses. A maximum of three credit hours can be earned in IEE 6980 as applicable to degree program. May be repeated for credit. Open to graduate students only.
Prerequisite: Approval of advisor preceding enrollment. 1 to 3 hours

IEE 6990 Practical Training Designed for students who wish to pursue practical training in off-campus activities in industries or institutions. May be elected with approval of department chairperson and faculty member. Application must be submitted and approved prior to election of the course. A maximum of three hours can be earned in IEE 6990 as applicable to degree programs with approval of academic advisor. May be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisite: Departmental approval. 1 to 12 hours

IEE 7000 Master's Thesis Please refer to The Graduate College section for course description. Graded on a Credit/No Credit basis. May be repeated for credit. Open to graduate students only.
Prerequisite: Departmental approval. 1 to 6 hours

IEE 7120 Professional Field Experience Please refer to The Graduate College section for course description. Graded on a Credit/No Credit basis. May be repeated for credit. Open to graduate students only.
Prerequisite: Departmental approval. 2to 12 hours

IEE 7250 Doctoral Research Seminar Please refer to The Graduate College section for course description. Graded on a Credit/No Credit basis. May be repeated for credit. Open to graduate students only.
Prerequisite: Departmental approval.
2 to 6 hours

IEE 7300 Doctoral Dissertation Please refer to The Graduate College section for course description. Graded on a Credit/No Credit basis. May be repeated for credit. Open to graduate students only.
Prerequisite: Departmental approval. 1 to 15 hours

Mechanical Engineering

ME 5200 Orthopaedic Biomechanics Current methods for analysis of biomechanical systems that include bone, tendon, ligament, cartilage, and other soft tissue. Mechanics that govern biomechanical systems including beam theory, anisotropic materials, viscoelasticity, and contact. Also prosthetics, orthotics, and other medical devices. Open to upperclass and graduate students. Prerequisite: ME 3650 or AE 4630 or instructor approval. Prerequisite courses require a grade of "C" or better. 3 hours

ME 5300 Theoretical and Computational Fluid Mechanics The theory and numerical implementation of ideal flow, viscous effects, and exact solutions of Navier-Stokes equations. Special emphasis will be on planning methods, conformal mapping, and singular distributions for flows around two- and three-dimensional bodies. Familiarity with VMS and some FORTRAN experience are required. Open to upperclass and graduate students. Prerequisites: ME 3560 with a grade of "C" or better, or instructor approval.
3 hours

ME 5350 Applied Spectroscopy Fundamentals of spectroscopy including rotational, vibrational and electronic transitions of molecular species, absorption and fluorescence spectra, lineshape profiles and broadening mechanisms. Description of spectroscopic techniques and their application for the measurement of relevant quantities such as concentration, velocity and temperature in practical systems, including internal combustion engines. Experimental hardware used for spectroscopic measurements. Open to seniors or graduate students. Prerequisites: ME 3350 with a grade of "C" or better, or instructor approval. 3 hours

ME 5360 Experimental Methods in Fluid Mechanics This course covers basic characteristics of turbulence, governing equations, and random data, probability and statistics related to turbulence, and experimental methods in fluid flow. Basics of Hot-Wire Anemometry, Laser Doppler Velocimetry, and Particle Image Velocimetry will be covered in detail. Experiments will be conducted to show the basics of these techniques. Open to upperclass and graduate students. Prerequisites: ME 3350 and (ME 3560 or AE 3610), with a grade of "B" or better in all prerequisites; or instructor approval. 3 hours

ME 5390 Advanced Thermal Design Theory and practical thermal system design using advanced computer-aided design tools with emphasis on modeling and optimization of modern thermal elements. Open to seniors or graduate students. Prerequisites: ME 3350 with a grade of "C" or better; or instructor approval. 3 hours

ME 5410 Continuous System Modeling & Simulation Principles and methods associated with simulating continuous dynamic systems in the mechanical and aerospace engineering disciplines. Linear and non-linear systems. Time and frequency domain analyses. Brief introduction to real-time simulation. Extensive use of current simulation software. Open to upperclass and graduate students. Prerequisites: ME 360 or instructor approval. 3 hours (3-0)

ME 5430 Mechanical Systems Control Classical and modern control analysis and design methods for mechanical and aerospace systems; transfer function vs. state-space description, single-input-single-output (SISO) vs. multi-input-multi-output (MIMO) system, linear vs. nonlinear system, linearization, classical control design method, state-space design method, emphasis on ground and space vehicle dynamics and control problems, extensive use of commercial software package. Open to upperclass and graduate students. Prerequisites: ME 3600 or instructor approval. 3 hours

ME 5450 Computational Fluid Dynamics I Basics of Computational Fluid Dynamics (CFD) including classification of partial differential equations, finite difference formulations, parabolic partial differential equations, stability analysis, elliptical equations, hyperbolic equations, scalar representations of the Navier-Stokes equations and grid generation. Open to upperclass and graduate students. Prerequisites: ME 3560 and CS 2010, with a grade of "C" or better in all prerequisites; or instructor approval. 3 hours

ME 5500 Modern Engineered Materials Advanced course in both metallic and non-metallic engineering materials, including electronic and magnetic materials and biomaterials. Mechanical, physical and biocompatibility properties will be examined with relationship to materials composition, structure, and processing. Failure mechanisms and prevention will be examined. Open ended projects will be assigned. Open to upperclass and graduate students. Prerequisites: (ME 2500 or AE 2500) and ECE 2100, with a grade of "C" or better in all prerequisites; or instructor approval. 3 hours (3 – 0)

ME 5530 Advanced Product Design An engineering design project from concept to adoption. Static and dynamic analysis. Mechanical systems design and layout. Open to upperclass and graduate students. Prerequisites: ME 3600 and ME 4530, or instructor approval. 3 hours

ME 5550 Intermediate Dynamics Three dimensional kinematics and dynamics of rigid bodies; equations of motion; Lagrange's equations; work and energy; impulse and momentum; virtual work; stability; computer simulation; introduction to vibrations. Open to upperclass and graduate students. Prerequisites: ME 2580 and MATH 3740, or instructor approval. 3 hours

ME 5580 Mechanical Vibrations A study of the oscillatory motion of physical systems with emphasis on the effects of vibrations on the performance and safety of mechanical systems. Open to upperclass and graduate students. Prerequisites: ME 2580 and MATH 3740, with a grade of "C" or better in all prerequisites; or instructor approval. 3 hours

ME 5600 Engineering Analysis Application of vector analysis and differential equations to the solution of complex engineering problems. Open to upperclass and graduate students. Prerequisite: ME 3600 or equivalent, with a grade of “C” or better; or instructor approval. 3 hours

ME 5610 Finite Element Method Development of finite element techniques for solution of one-, two-, and three-dimensional problems in heat transfer, fluid flow, structures and elasticity. Open to upperclass and graduate students. Prerequisites: ME 2570, ME 3560, ME 4310, and MATH 3740 or equivalents, with a grade of "C" or better on all prerequisites; or instructor approval. 3 hours

ME 5620 Application of Numerical Methods in Engineering Finite difference methods for initial value and boundary value problems; 2D finite differencing, boundary element methods applications to differential equations of heat transfer, fluid flow, and solid mechanics. Open to upperclass and graduate students. Prerequisites: MATH 3740 and ME 3600 with a grade of "C" or better, or instructor approval. 3 hours

ME 5640 Engineering Noise Control Introduction to basic concepts of noise control, nature of sound and its effect on our environment. Indoor and outdoor sound propagation. Noise standards and measurements. Case studies of real-world implementation of noise control engineering. Laboratory experiments. Open to upperclass and graduate students. Prerequisites: ME 2580 and MATH 3740, with a grade of "C" or better on all prerequisites; or instructor approval. 3 hours

ME 5690 Principles of Fatigue and Fracture Basics of experimental techniques and modeling used in industry to study inelastic deformations, fatigue, and fracture of engineering materials and structures. Open to upperclass and graduate students. Prerequisite: (ME 3650 or AE 4630) with a grade of "B" or better, or instructor approval. 3 hours

ME 5710 Gas Dynamics Basic equations of compressible flow, isentropic relationships, normal and oblique shocks. Prandtl-Meyer expansion, Fanno Line and Rayleigh Line flow. Applications to nozzles, diffusers, supersonic wind tunnels; and linearized flows and method of characteristics. Open to upperclass and graduate students. Prerequisites: ME 4310 and ME 4320, with a grade of "C" or better in all prerequisites; or instructor approval. 3 hours

ME 5720 Advanced Thermodynamics Conditions of equilibrium, process and thermodynamic engines, the extremum principle, Maxwell relations, stability of thermodynamic systems, phase transitions, chemical thermodynamics, irreversible thermodynamics, and introduction to the statistical thermodynamics. Open to upperclass and graduate students. Prerequisites: ME 4310 and ME 4320, with a grade of "C" or better in all prerequisites; or instructor approval. 3 hours

ME 5730 Materials Selection in Design Material selection for resistance to both load and environment. Design parameters for material selection and various metal systems, corrosion, service failures, and mechanical behavior of engineering alloys at high and low temperatures. Open to upperclass and graduate students. Prerequisites: ME 3650 or instructor approval. 3 hours (3 – 0)

ME 5750 Tribology-Principles and Applications Surface chemistry, topographical measurement and description, contact mechanics, wear mechanisms, lubrication and film formation, hydrodynamic theory and application in bearings, application to friction and wear in machine elements. Open to upperclass and graduate students. Restricted to students in Aerospace Engineering and Mechanical Engineering. Prerequisites: ME 3560 or AE 3610, with a grade of "C" or better in all prerequisites; or instructor approval. 3 hours

ME 5770 Fuel Cell and Alternative Energy Fundamentals of fuel cells, working principles and types. Function of main components, basic chemistry and thermodynamics, electrochemistry.

Alternative fuels and emerging energy technologies. Fuel cell and hydrogen era. Open to upperclass and graduate students. Prerequisites: (ME 3670 or ME 4320) and ME 3560, or instructor approval. 3 hours (2 – 3)

ME 5850 Mechatronics A course in fundamentals of motion control, primarily as it is applied to robotics. Students will learn the basics of control systems as applied to multiaxis servo systems. Appropriate time will be devoted to develop a sound basis in the electro-mechanical discipline. Open to upperclass and graduate students. Prerequisites: ECE 2100, ME 2580 and (ECE 3710 or ME 3600), with a grade of "C" or better in all prerequisites. 3 hours

ME 5950 Topics in Mechanical Engineering A specialized course dealing with some particular area of mechanical engineering not included in other course offerings. Open to upperclass and graduate students. Prerequisite: Consent of department. 1 - 4 hours

ME 5990 Practical Training Designed for Master's students who wish to pursue practical training in off-campus activities in industrial and/or other settings. To be eligible, students must be registered in the MAE department, must have completed at least 6 credits towards and advanced degree, must have had less than 6 months of prior industrial work experience in the US and have approval of their faculty advisor and Graduate Programs Director or Department Chair. Students enrolled will be classified as having full time status for the purpose of loan deferments and insurance eligibility. A maximum of 3 credits may be approved towards a graduate degree. Open to upperclass and graduate students. Prerequisite: Advisor or Departmental approval. 1 – 3 hours

ME 6090 Combustion Combustion thermodynamics and chemical kinetics. Heat and mass transfer and fluid mechanics in combustion processes. Flame propagation and detonation. Auto-ignition and source of ignition. Quenching and flammability limits. Combustion in practical systems. Students must complete the prerequisite or have the instructor's approval. Open to graduate students only. Prerequisites: ME 5710 or consent of instructor. 3 hours

ME 6300 Advanced Fluid Dynamics Modern developments in fluid dynamics of compressible and incompressible fluid flow. Includes kinematics of fluid motion, laminar and turbulent flow in pipes, fluid machinery, and supersonic flow. Open to graduate students only. Prerequisites: ME 3560, 4320, and MATH 3740. 3 hours

ME 6320 Energy Resources and Conversion Availability and economic utilization of energy resources. Terrestrial and thermodynamic limitations. Energy conversion applications. Fission and fusion. Applications of solar, water, wind, and geothermal energy. Open to graduate students only. Prerequisite: ME 2320 or consent of instructor. 3 hours

ME 6330 Advanced Control Systems Digital controls, analog controls, introduction to modern control, state variable analysis, system simulation techniques, optimal design, parameter sensitivity and stability analysis, robotics control applications. Open to graduate students only. Prerequisite: ME 3600. 3 hours

ME 6350 Turbulence The physical nature of turbulence. Dimensional analyses. The basic equations for studying the turbulent transport of momentum and heat and their dynamical significance. Characteristics of turbulent wall- and free-shear layers. Probabilities and statistics related to turbulence and experimental methods in fluid flow.Open to graduate students only. Prerequisites: ME 5300 and ME 5600. 3 hours

ME 6360 Applied Optics and Optical System Design Classical and conventional optical methods in use by the engineering and research community. Moire, Speckle and Speckle-shearing interferometry. Holographic interferometry. Photo-elasticity and electronic speckle pattern interferometry. Optics and lasers for research and industrial applications. Digital image processing and optical system design. Open to graduate students only. Prerequisite: Consent of instructor. 3 hours

ME 6370 Design Optimization Elements of design optimization. Defining design variables, cost functions, and constraints. Simplex method for linear problems and numerical methods for nonlinear

unconstrained and constrained problems. Open to graduate students only. Prerequisite: ME 5620 3 hours

ME 6450 Computational Fluid Dynamics II Advanced topics in Computational Fluid Dynamics (CFD) including transformation of the equations of fluid motion from physical space to computational space, the Euler equations of gasdynamics, the Parabolized Navier-Stokes equations of gasdynamics, the Navier-Stokes equation of gasdynamics, finite volume methods and turbulent flows. Open to graduate students only. Prerequisite: ME 5450 3 hours

ME 6500 Smart Materials Smart materials revolutionized people's lives in a wide range of applications including artificial implants, underwater acoustics, pharmaceutical, aerospace, and many more. They include gel, ceramics, metallic alloys, polymers, and composites. This course will cover a variety of smart materials and their applications, explain the physical concepts that result in their "intelligence" and explore possibilities in design. Students must complete the prerequisite or have the instructor's approval. Open to graduate students only. Prerequisite: ME 5500 or instructor approval. 3 hours

ME 6510 Advanced Strength of Materials, Elasticity, and Plasticity Torsion of non-circular cross sections, shear center, curved beams, beams on elastic foundations, flat plates, and an introduction to two-dimensional elasticity and plasticity. Open to graduate students only. Prerequisite: ME 4530. 3 hours

ME 6520 Mechanics of Composite Materials Micromechanics of two-phase solids. The orthotropic layer: on-axis and off-axis moduli and strength. Hygrothermal effects. Laminate stacking, stiffness and strength. Intralaminar failure modes. Failure criteria. First ply and next ply failure. Interlaminar strength. The layered composite tube. Open to graduate students only. Prerequisite: ME 3650 or consent of instructor. 3 hours

ME 6530 Fatigue of Engineering Materials Advanced approach to the problem of fatigue damage and life prediction; cyclic stress-strain response under uniaxial and multiaxial loading, fatigue limit, high and low cycle fatigue; surface integrity and fatigue life improvement. Students must complete the prerequisite or have the instructor's approval. Open to graduate students only. Prerequisite: ME 5690 or instructor approval. 3 hours

ME 6540 Composite Materials Introduction to matrix and reinforcement (or filler) materials that form the basis of modern composites. Polymer-, metal-, and ceramic-matrix materials. Fabrication of these materials into composites. Effect of geometry and materials on properties. Experimental characterization of composites. Biocompatibility, environmental effects, fatigue, fracture mechanics, and impact. Applications in aerospace, automotive, and biomedical. Open to graduate students only. Prerequisite: ME 5500 or instructor approval. 3 hours

ME 6551 Precision Machining and Micromanufacturing Precision machining technologies - conventional (machining, drilling, grinding), tolerances, conventional and non-traditional technologies (EDM, Si machining, DRIE), laser micromachining, micromanufacturing, stereolithography, micro-nano embossing, microinjection molding, etc. Open to graduate students only. Prerequisites: ME 5000 or ME 5750 or instructor approval. 3 hours

ME 6555 Nanofabrication Technology Micro/nano lithography, nanostructured layer deposition, electroforming of nanostructures, electron, ion and x-ray beam lithographies, alternative lithography technologies, carbon nanotubes fabrication, nanowires, characterization of nanostructures. Students must complete the prerequisite or have the instructor's approval. Open to graduate students only. Prerequisites: ME 5500 or ME 5730 or instructor approval. 3 hours

ME 6590 Multibody Dynamics Kinematic and dynamic analyses of constrained mechanical systems consisting of many interconnected rigid bodies. Analytical and numerical methods are presented for the computer-aided formulation and solution of the non-linear equations of motion of complex mechanical systems. Open to graduate students only. Prerequisite: ME 5550. 3 hours

ME 6610 Advanced Finite Elements Implementation of the finite element methods: Mixed formulations. Plate bending. Time dependent problems in solid mechanics and heat transfer. Introduction to nonlinear problems. Open to graduate students only. Prerequisite: ME 5610
3 hours

ME 6630 Structural Vibrations Vibration response of coupled and uncoupled structures. Wave propagation, transmission, and reflection. Effects of internal and external damping, impedance discontinuities and curvature. Four-pole parameter technique for vibration isolation system design. Modal analysis. Sound generation. Open to graduate students only. Prerequisite: ME 5550 or ME 5580. 3 hours

ME 6640 Acoustics Principles of acoustics, stressing the physical concepts underlying the derivations, associated assumptions and solutions to the wave equations in bounded and unbounded fluids and solids. Topics include: acoustic wave equations; integral equations; attenuation; acoustics of pipes, ducts, cavities, wave guides and resonators; environmental, architectural, underwater acoustic transducers. Open to graduate students only. Prerequisite: ME 5640 or consent of instructor. 3 hours

ME 6650 Sound and Structure Interaction Introduction to acoustic radiation from vibrating infinite and finite plates and the effect of fluid-loading on them. Acoustic transmission through and reflection from single-leaf and double-leaf partitions. Acoustic excitation of elastic plates and coupling between panels and open and enclosed acoustic spaces. Students must complete the prerequisite or have the instructor's approval. Open to graduate students only. Prerequisite: ME 5640 or consent of instructor. 3 hours

ME 6690 Engineering Fracture Mechanics Fundamentals of the theory of linear elastic fracture mechanics (LEFM), crack-tip opening displacement (CTTOD), J-integral, R-curve, mixed-mode fracture and fracture toughness testing. Open to graduate students only. Prerequisite: ME 5690 or consent of instructor.
3 hours

ME 6710 Advanced Heat Transfer I-Conduction Heat Transfer Fundamental aspects of conductive heat transfer applied to steady state and transient conditions. One-, two-, and three-dimensional conduction problems with exact and approximate solution techniques utilizing the computer are studied. Open to graduate students only. Prerequisites: ME 4310 and ME 4320. 3 hours

ME 6720 Advanced Heat Transfer II-Convection and Radiation Heat Transfer Fundamentals of thermal radiation for black, gray, non-gray, diffuse, and specular surfaces. Gaseous radiation and special applications of thermal radiation including derivation and application of equations of mass, energy, and momentum transfer. Open to graduate students only. Prerequisites: ME 4310 and ME 4320. 3 hours

ME 6730 Power Plant Design Theory and application of internal combustion engines, gas turbine power plants, steam turbine power plants, and other prime movers. Emphasis is on application of thermodynamic principles combined with open-ended design problems in power plant applications. Open to graduate students only. Prerequisites: ME 4310 and ME 4320. 3 hours

ME 6740 Thermoelectric Design Thermoelectric design covers the fundamental theories, optimal design, applications for thermoelectric generators and coolers. The fundamental theories include the Seebeck effect, Peltier effect, and Thomson relation, optimal design, compatibility factor, and thermal and electrical contact resistances. The applications discuss waste heat recovery, automotive thermal comport, solar thermoelectric generator, electronic thermal control, and medical instruments. Open to graduate students only. Prerequisite: ME 4310 or instructor approval. 3 hours

ME 6750 Thermoelectric Materials Thermoelectric Materials covers the fundamental theories for thermoelectric bulk and nanostructured materials. The fundamental theories include physics of electrons and phonons, thermoelectric transport properties such as the Seebeck coefficient, electrical conductivity, and electronic and lattice thermal conductivity. The theoretical model discusses nonparabolic two-band Kane model for electrons and phonons. Nanostructure includes nanocomposites, two-dimensional and one-dimensional nanostructures. Open to graduate students only. Prerequisite: ME 5500 or instructor approval. 3 hours

ME 6950 Advanced Topics in Mechanical Engineering: Variable Topics A specialized course dealing with some particular advanced area of Mechanical Engineering not included in other course offerings. Open to graduate students only. Prerequisite: Consent of instructor. 1 to 4 hours

ME 6970 Problems in Mechanical Engineering Special problems of individual need or interest under the direction of a member of the graduate faculty. May be elected with approval of department chairperson and faculty member. Application must be submitted and approved prior to the election of the course. Open to graduate students only. 1 to 6 hours

ME 6990 Practical Training Designed for doctoral students who wish to pursue practical training in off-campus activities in industrial and/or other settings. To be eligible, students must be registered in the MAE department, must have completed at least 6 credits towards and advanced degree, must have had less than 6 months of prior industrial work experience in the US and have approval of their faculty advisor and Graduate Programs Director or Department Chair. A maximum of 3 credits may be approved towards a graduate degree. Open to graduate students only. Prerequisite: Advisor or Departmental approval. 1 to 3 hours

ME 7000 Master's Thesis Please refer to The Graduate College section for course description. Graded on a Credit/No Credit basis. May be repeated for credit. Open to graduate students only. Prerequisite: Approved application from department and Graduate College. 1 to 6 hours

ME 7100 Independent Research Please refer to The Graduate College section for course description. Graded on a Credit/No Credit basis. May be repeated for credit. Open to graduate students only. Prerequisite: Approved application. 2 to 6 hours

ME 7300 Doctoral Dissertation Please refer to The Graduate College section for course description. Graded on a Credit/No Credit basis. May be repeated for credit. Open to graduate students only. Prerequisite: Approved application. 1 to 15 hours

ME 7350 Graduate Research This course is used for research projects for doctoral students only. Such projects may be taken more than once by the student. Graded on a Credit/No Credit basis. May be repeated for credit. Open to graduate students only. Restricted to MAE doctoral students only. Prerequisite: Graduate advisor and instructor approval. 3 hours

Paper Engineering

PAPR 5000 Introduction to Papermaking Graduate students without sufficient background will learn paper science and paper engineering topics and laboratory techniques, including the basics of papermaking, paper properties, paper testing, and TAPPI standard testing procedures. Prerequisite: Enrollment by approval of PCI Graduate Advisor. 1 hour (0-3)

PAPR 5301 Material Instrumental Analysis Instrumental techniques for analysis of the physical and surface properties of materials used in the paper and printing industries. Training to operate instruments in preparation for graduate research, or for use in other graduate level courses, and development of laboratory measurement and computer usage skills. Prerequisite: One completed laboratory science course 2 hours (1 – 3)

PAPR 5501 Advanced Paper Processes Advanced course in the paper manufacturing process, including paper chemistry theory, stock preparation, converting, and the role of recycled fibers. Particular emphasis on types of paper products and their applications, the relationship of laboratory measurements to paper properties, and the effect of process variables on paper product performance. Prerequisite: PAPR 5000 or equivalent. 3 hours (3 – 0)

PAPR 5990 Pilot Plant Operations Students will gain experience using the department's papermaking, recycling, paper coating, and printing pilot plants to perform supervised projects or basic research, and be able to express project or research results in oral, written, and visual communication formats in an acceptable and

professional manner. Course in repeatable to a maximum of three hours. Prerequisite: By arrangement with instructor. 1 hour

PAPR 6000 Surface and Colloid Chemistry Intermolecular forces are considered in detail to build a sound background for consideration of surface and colloidal behavior of matter. The thermodynamics of interfaces and surfaces is covered in detail considering the topics of absorption, surface films, wetting, capillary penetration, and diffusion. Colloidal topics covered include areas such as ionic boundary layers, electrokinetic potential, swelling and shrinkage of gels, ion exchange, surface active agents, detergency, and retention of particles. 3 hours (2 – 3)

PAPR 6400 Coating Rheology The theories of flow of non-Newtonian liquids are discussed as they apply to pigmented coating systems. Further theories are formulated and evaluated in the lab to attempt to explain the behavior of coating under the shear conditions found in coating application systems. Prerequisite: PAPR 5301 or equivalent. 3 hours (2 – 3)

PAPR 6410 Coating Formulations Intensive study of the functional properties and cost considerations involved in developing coating formulations. Contributions of pigments, additives, and binders to optical, mechanical, printing, and surface properties are discussed in the context of coating formulations. Prerequisite: PAPR 3420 or equivalent. 3 hours (2 – 3)

PAPR 6600 Mechanics and Optics of Paper and Fibers The mechanics and optics of individual fibers and fiber networks will be considered from both theoretical and measurement standpoints. Stress-strain-analysis, theory of elasticity and flow, statics, reflection, absorption, transmission, and light scattering of these systems will be covered. Prerequisite: MATH 3740 or equivalent. 3 hours (2 – 3)

PAPR 6910 Pulp and Paper Operations II Continuation of the study of the unit operations integral to pulp and paper manufacturing. The paper manufacturing phase is emphasized while completing the systematic study of unit operations used in the industry. Prerequisite: CHEG 3120 or equivalent. 3 hours (2 – 3)

PAPR 6950 Graduate Topics in Paper/Printing A special course dealing in some particular subject of interest in pulp and paper and/or printing. Prerequisite: Permission of the instructor. 1-4 hours

PAPR 6980 Pulping and Bleaching The course will cover principles of kraft and sulfite pulping, use of other pulping chemicals such as anthraquinone, borohydride, and polysulfides. It will also cover all types of high yield pulps and bleaching of both chemical and high yield pulps. Bleaching chemicals that will be discussed will include chlorine, chlorine dioxide, hypochlorite, dithionite, hydrogen peroxide, oxygen, and ozone. Various bleaching sequences that are currently in practice and under development will be discussed. Prerequisite: PAPR 3030. 3 hours

PAPR 6990 Pilot Plant Research Research experience using the department's papermaking, recycling, paper coating, and printing pilot plants. Project management and experimental design of research. Preparation of research reports. Course is repeatable to a maximum of six hours. Prerequisite: IEE 5160 or equivalent. 1 hour

PAPR 7000 Master's Thesis Please refer to The Graduate College section for course descriptions. Graded on a Credit/No Credit basis. May be repeated for credit. Open to graduate students only. Prerequisite: Approved application; department approval and Graduate College approval. 1 to 6 hours

PAPR 7100 Independent Research Please refer to The Graduate College section for course descriptions. Graded on a Credit/No Credit basis. May be repeated for credit. Open to graduate students only. Prerequisite: Approved application and department approval. 2 to 6 hours

PAPR 7120 Professional Field Experience Please refer to The Graduate College section for course descriptions. Graded on a Credit/No Credit basis. May be repeated for credit. Open to graduate students only. Prerequisite: Approved application and department approval. 2 to 12 hours

PAPR 7131 Teaching Practicum Observation A practicum experience in which a doctoral student observes and works with an experienced faculty member in the teaching of an undergraduate course in paper and printing science. Regular meetings are held to discuss classroom management, teaching techniques, and student evaluation methods that are being actively used by the faculty member. May not be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisite: Department approval. 1 to 3 hours

PAPR 7132 Teaching in the Discipline A practicum in teaching in paper and printing science done as a collaborative effort with and experienced faculty member in an undergraduate course. The doctoral student will be responsible for a clearly defined portion of the course, including content development, delivery, and student evaluation. May not be repeated for credit. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisite: Department approval. 1 to 3 hours

PAPR 7250 Doctoral Research Seminar Seminars presented by graduate students, faculty, and visiting lecturers concerning their research. Six hours are required for the doctoral degree. Graded on a Credit/No Credit basis. May be repeated for credit. Open to graduate students only. 1 hour

PAPR 7300 Doctoral Dissertation Please refer to The Graduate College section for course descriptions. Graded on a Credit/No Credit basis. May be repeated for credit. Open to graduate students only. Prerequisite: Approved application; department approval and Graduate College approval. 1 to 6 hours

College of Fine Arts

Art

ART 5000 Independent Studies An opportunity for qualified undergraduates to elect an area of special interest and pursue it in depth. May be repeated for credit. Open to upperclass and graduate students. Prerequisite: Department approval. 1 to 6 hours

ART 5100 Drawing Workshop Continuation of ART 3100. Open to upperclass and graduate students. Prerequisite: ART 3100. 1 to 6 hours

ART 5200 Independent Study in Art History Problems in art history from ancient times to the present selected by the individual student in consultation with the instructor. Open to upperclass and graduate students. Prerequisites: Department approval. 2 to 3 hours

ART 5210 Topics in Art History: Variable Topics Investigation of changing topics in art history in class or seminar sessions by advanced students. Course title varies from term to term. May be repeated for credit under different topics. May be repeated for credit under different topics. Open to upperclass and graduate students. MFA candidates and other students with department approval. 3 hours

ART 5220 Topics in Medieval and Renaissance Art Investigation of changing topics in Medieval and Renaissance art history in seminar sessions. Advanced theory and methods are stressed. Research papers are required. Course has variable topics. May be repeated for credit under different topics. Open to upperclass and graduate students. MFA candidates and other students with department approval. 3 hours

ART 5230 Topics in Modern Art Investigation of changing topics in modern art in seminar sessions. Advanced theory and methods are stressed. Research papers are required. Course has variable topics. May be repeated for credit under different topics. Open to upperclass and graduate students. MFA candidates and other students with department approval. 3 hours

ART 5250 Topics in Asian Art Investigation of changing topics in Asian art in seminar sessions. Advanced theory and methods are stressed. Research papers are required. Course has variable topics. May be repeated for credit under different topics. Open to upperclass and graduate students. MFA candidates and other students with department approval 3 hours

ART 5270 Art History Methods Intensive study of the methods, literature, and research techniques used in art historical inquiry and writing. Open to upperclass and graduate students. MFA candidates and other students with department approval 3 hours

ART 5290 Art History Internship Designed to provide Art History majors with professional knowledge and skills in the following areas: gallery, museum, archival, visual resources library work, arts advocacy, and arts administration. Students are supervised by an Art History faculty member and a supervisor in the organization where the student is placed. May be repeated for credit. Open to upperclass and graduate students. Registration requires approval by supervising faculty member. 1 hour

ART 5300 Ceramics Workshop Advanced work in ceramics on an independent basis.May be repeated for credit. Open to upperclass and graduate students. 1 to 6 hours

ART 5310 Sculpture Workshop Continuation of ART 3310. The advanced student explores the expressive possibilities of his or her own individual sculptural direction, with bronze and aluminum casting related techniques. May be repeated for credit. Open to upperclass and graduate students. 1 to 6 hours

ART 5350 Intermedia Workshop An advanced interdisciplinary course that examines unconventional art forms such as collaboration, kinetic, performance and/or installation art. The student is expected to have a solid background in one conventional art form to allow for technical and conceptual explorations in Intermedia art. Course topic varies from semester to semester. May be repeated for credit.Open to upperclass and graduate students. Prerequisite: Junior standing or instructor approval required. 1 to 4 hours

ART 5380 Metals/Jewelry Workshop Advanced work in jewelry design and metalsmithing. Students collaborate with the instructor to plan a suitable and particular direction for study. May be repeated for credit. Open to upperclass and graduate students. 1 to 6 hours

ART 5400 Painting Workshop Continuation of ART 3400. May be repeated for credit. Open to upperclass and graduate students. 1 to 6 hours

ART 5410 Printmedia Workshop This advanced studio course investigates contemporary trends in printmedia including such topics as 'the multiple' and three-dimensional and installation methods. Students are encouraged to explore all printmedia and interdisciplinary approaches. An in-depth analysis of critical print media theory will provide the basis for the continuing development of the student's own personal language and its contextualization within contemporary art. May be repeated for credit. Open to upperclass and graduate students. 3 hours

ART 5480 Photography Workshop An advanced course that masters the technical and conceptual applications of still image equipment and materials with focus on portfolio development and advanced individual research. Critical readings are partnered with studio projects. Course topics vary from semester to semester. May be repeated for credit. Open to upperclass and graduate students. Prerequisites: ART 3160 or ART 4470 with a minimum grade of “C” in all prerequisites. 1 to 4 hours

ART 5520 Art Education Practicum A teaching laboratory course. Application of theories and skills in art education. Practice in methods and procedures of art education. Must be repeated for a total of 12 credits. Open to upperclass and graduate students. 3 hours.

ART 5530 Independent Studies in Art Education An arranged elective course in which the student investigates and researches a problem, a project, or trends in art education. (Not to be taken in place of required art education courses.) May be repeated for credit. Open to upperclass and graduate students. Restricted to masters (or majors) in Art Education. Prerequisite: Department approval. 1 to 6 hours

ART 5700 Intern I Design Practicum in Design Center. Involves an introduction to problem solving for real clients from the community and university. Focus is on the design process from concept to completion and

involves client contact, budget preparation, electronic pre-press production, and interface with printers and the printing industry. Open to upperclass and graduate students. 3 hours

ART 5710 Intern II Design Practicum in Design Center. Involves an introduction to problem solving for real clients from the community and university. Focus is on the design process from concept to completion and involves client contact, budget preparation, electronic pre-press production, and interface with printers and the printing industry. Credits are variable due to the fact that larger more intense projects are sometimes given and the credits are determined by the depth of the project. Open to upperclass and graduate students. 3 to 6 hours

ART 6510 Art Education Theory Theories of art and education as they influence art education theory and practice. Includes discussion of various historical and contemporary viewpoints in aesthetics, criticism, art history, art studio for teaching, and discussion of historic and recent developments in art education. Prerequisite: Admission to Master of Arts in Art Education program. 3 hours

ART 6520 Recent Topics in Art Education Topical seminar. Each semester different topics will be investigated in depth in terms of instruction and assessment, curriculum development, and research. Possible topics include: Multicultural Perspectives in Art Education, Technology in Art Education, Students with Special Needs in Art Education, Assessment, Community Approaches to Art Learning, and Interdisciplinary Roles for Art in Education. Must be repeated once, under a different topic. Prerequisite: ART 6510. 3 hours

ART 6530 Research in Art Education This course examines research and research methods used for conducting inquiry in art education. Quantitative and qualitative research models will be discussed. Methods of data collection and data analysis will be presented. Students generate research problems, prepare a literature review, and write a research proposal to guide the final graduate project in ART 6550. Prerequisites: ART 6510 and six credits of ART 6520. 3 hours

ART 6550 Graduate Project in Art Education In this course a student conducts independent inquiry and prepares a written project in which a problem of some significance to the field is investigated and reported. This research is conducted under supervision by graduate faculty in art education. The project is to be composed of research conducted by the student for the purpose of demonstrating knowledge and understanding of research methods in art education, and knowledge of issues and developments in the field of art education. The project proposal is to be written and approved in ART 6530. The completed work must be approved by a committee of graduate faculty. Students who plan to work with human subjects in their research study must abide by the rules and practices established for Western Michigan University. The project itself may employ qualitative and or quantitative research methods on a topic or problem directly related to art education. This would include a phenomenological study of students in an art class context; an analysis of a premise or construct traced through the literature of art education; a survey of attitudes, beliefs, or practices conducted among arts education professionals; or the preparation and field testing of an extensive curriculum module. The use of digital media in the final form of the presentation is encouraged and will be negotiated with graduate faculty.Prerequisites: ART 6510, 6 credits of ART 6520, and ART 6530. 2-4 hours

ART 7000 Master's Thesis Please refer to The Graduate College section for course descriptions. May be repeated for credit. Graded on a credit/no credit basis. Open to graduate students only. 1 to 6 hours

Music

MUS 5000 Applied Music Private lessons for the graduate student in a non-major area of performance. 1 to 2 hours

MUS 5100 Symphonic Band Prerequisite: Membership by audition. 1 hour

MUS 5110 University Orchestra Prerequisite: Membership by audition. 1 hour

MUS 5120 University Chorale Prerequisite: Membership by audition. 1 hour

MUS 5130 Jazz Orchestra Prerequisite: Membership by audition. 1 hour

MUS 5140 Instrumental Chamber Music Special ensembles formed to perform standard instrumental chamber music works. Ensembles may include a variety of combinations, e.g., string quartets, woodwind quintets, brass quintets, percussion ensembles, piano trios, etc. Credit will be given only if a sufficient rehearsal/performance schedule warrants. 1 hour

MUS 5160 Music Theatre Practicum A production experience in music theatre. Each semester culminates in an opera or musical comedy production. Open to singers, actors, accompanists, instrumentalists, and persons interested in production techniques. Admission by audition or permission of the instructor. 1 hour

MUS 5170 Collegium Musicum Performance of early Western music. Open to all students of the University. Additional transcription, arranging, editing, and conducting of early music is required of enrolled Music History majors. Graduate students may count not more than two hours of this course for graduation. Membership by audition. 1 hour

MUS 5190 Gold Company Prerequisite: Membership by audition. 1 hour

MUS 5220 KLOrk: Kalamazoo Laptop Orchestra KLOrk is a live performing ensemble using laptops and mobile devices as musical instruments. The course activities include the creation, rehearsal, and performance of original musical compositions and multimedia works. May be repeated for credit. Open to upperclass and graduate students. Prerequisite: MUS 2220 or instructor approval. 1 hour

MUS 5240 Audio Programming II Students in this course will learn how to program and control synthesizers and effect processing units in an object-oriented programming language. This course will also provide an introduction to programming for visual projects. Prerequisite: MUS 4240 2 hours

MUS 5300 Advanced Choral Conducting Supervised experience in conducting vocal groups. The student may be called upon to prepare an ensemble for public performance. Prerequisite: Audition required. 2 hours

MUS 5310 Advanced Instrumental Conducting Supervised experience in conducting instrumental groups. The student may be called upon to prepare an ensemble for public performance. Prerequisite: Audition required.2 hours

MUS 5550 Jazz Arranging Jazz Arranging is a study of the art of arranging for the jazz ensemble-both traditional and contemporary. The course will undertake a detailed study of instrument ranges, transpositions, and sound potential, and will cover voicings, scoring practices, calligraphy, and contemporary trends within the medium. Open to upperclass and graduate students. 2 hours

MUS 5560 Advanced Jazz Arranging A study and application of the art of arranging for the jazz ensemble, studio orchestra, and show orchestra. The course will undertake a detailed study of scoring for winds, brass, strings, voices and percussion in relation to traditional and contemporary trends within the medium. Prerequisites: MUS 5550 and MUS 2640 or concurrently. 2 hours

MUS 5580 Jazz Improvisation I A study and directed application of the fundamentals of jazz improvisation including basic chord and scale construction and recognition, harmonic function, chord-scale relationships, and basic blues and popular song forms. All students will be required to develop aural and performance skills relative to those theory skills. Open to upperclass and graduate students. 2 hours

MUS 5590 Jazz Improvisation II A study and directed application of advanced techniques of jazz improvisation including chord extension, voicing, inversions and substitutions, chord function and progressions, and complex scales and their applications. All students will be required to develop aural and performance skills relative to those theory skills. Prerequisites: MUS 5580 and MUS 2180 Jazz Ensemble or concurrently. 2 hours

MUS 5600 Counterpoint A study of the contrapuntal techniques of the 18th, 19th, and 20th centuries. Written assignments are closely correlated with the contrapuntal styles of significant composers. Prerequisites: MUS 1610 with a grade of C or better. 2 hours

MUS 5610 Counterpoint A continuation of MUS 5600. Prerequisite: MUS 5600. 2 hours

MUS 5620 Advanced Compositional Topics This course will cover advanced techniques used by composers. Topics will vary and will be announced when the course is offered. Prerequisite: Permission of instructor. 2 hours

MUS 5640 Seminar in Electronic Music Composition Students will create original music compositions or other generative art works involving digital media. This variable topic seminar will rotate between subjects which include effects processing and synthesis, interactive performance systems, and electronic music for multimedia projects. The instructor and enrolled students will meet weekly in order to examine electronic music techniques, discuss works in-progress, and present works related to relevant technical and aesthetic concepts. May be repeated for credit. Open to Upperclass and Graduate Students 2 – 3 hours

MUS 5645 Audio for Video Audio for Video focuses on generative and sound design projects for video games, film, other commercial projects, installation art, and sonic art. Aesthetic, conceptual, and technological topics in relationship to creating such projects will be discussed at the beginning of the semester. The remainder of the semester will focus on facilitating and discussing student projects. Open to upperclass and graduate students. 3 hours

MUS 5650 Topics in Music Theory Advanced study of a specialized topic in music theory. Topics will vary as announced each semester and might include analytical methods, theory pedagogy, technological applications, musical genres, or composer studies. This course may be repeated for credit with different topics. 2 to 3 hours

MUS 5655 Special Topics in Multimedia Arts Technology A variable topic course focusing on more advanced topics relevant to the intersections between the arts and technology. Potential topics include: Business aspects of being an independent generative artist, working in the video game industry, working in the film industry, and working in the recording industry; aesthetic, historic, theoretical, and conceptual issues surrounding art and technology; advanced concepts of acoustics, sound reinforcement, and specialized recording projects, such as recording a large acoustic ensemble. Specific, relevant technological topics can be covered in this course as needed; examples could include computer programming for audiovisual art (Processing/Jitter), sensors and parametric mapping for multimedia projects, and advanced video filters and audio effect processing for audiovisual art (AfterEffects). May be repeated for credit. Open to upperclass and graduate students. 2 to 3 hours

MUS 5670 Orchestration A study of the characteristics of instruments, and of arranging for the various individual choirs, for combinations of choirs, and for full orchestra. Prerequisite: MUS 2610. 2 hours

MUS 5680 Orchestration A continuation of MUS 5670. Prerequisite: MUS 5670. 2 hours

MUS 5720 Baroque Music (1600-1750) A survey of the choral and instrumental music of the Baroque masters such as J. S. Bach and G. F. Handel. Special attention to the development of style from monody through harmonic polyphony. Prerequisites: MUS 2700 and 2710. 3 hours

MUS 5730 Classical Music (1750-1800) Examination of the chief works of Mozart and Haydn, with intensive study of symphonic form and the development of the classic opera. Prerequisites: MUS 2700 and 2710. 2 hours

MUS 5740 Romantic Music (1800-1910) Music of the important composers of the period beginning with Beethoven, along with the historical, cultural, and political background of the era. Prerequisites: MUS 2700 and 2710. 3 hours

MUS 5790 Operatic Literature A survey of opera from 1600 to the present. 2 hours

MUS 5800 Solo Literature: (topics) Solo literature for a specific medium (voice, piano, violin, etc.) will be studied from a theoretical, historical, and performance point of view. Topics to be announced. Prerequisites: MUS 2700 and 2710. May be repeated for credit. 2 hours

MUS 5810 Choral Music Literature A survey of choral music (mass, motet, anthem, cantata, oratorio) from the Renaissance through the Romantic period. 2 hours

MUS 5820 Wind Music Literature A survey of windband ensembles and literature from the Renaissance period through the twentieth century. 2 hours

MUS 5830 Jazz History and Literature A survey of the history of jazz including aspects of sociology and history as they relate to the art form of jazz. All periods in jazz history, from its earliest roots in Africa and the slave culture in the United States, up through the blues, dixieland, swing, bop, mainstream and the more eclectic period of jazz rock and free-form jazz will be explored. Important works will be examined from each period in order to grasp the essentials of a particular style Prerequisite: MUS 5580 or department's consent. 3 hours

MUS 5840 Topics in Musicology and Ethnomusicology A study of the music of various people, places, eras, and/or events. Attention will focus on the current research methodology in the disciplines of musicology and ethnomusicology and may draw upon related fields (e.g., anthropology, theatre, cultural studies, women's studies, etc.). Topics will vary each semester and could include studies of world music and cultures, performance traditions, historical repertories, musicians, gender roles, political and sociological structures. May be repeated for credit with different topics. Open to upperclass and graduate students. 2 to 3 hours

MUS 5850 Medieval Music A survey of music in Western Europe from the end of Antiquity to the early 15th century. The major developments in style, theory, and notation will be explored within the context of the general cultural and political environment of the era. Problems of performance practice will receive special attention with emphasis on primary manuscript sources and scholarly performing editions.Prerequisites: MUS 2700 and MUS 2710. 2 hours

MUS 5860 Renaissance Music A survey of music in Western Europe from the early 15th century to the early 17th century. Developments in the major musical genres of the era will be examined with emphasis on a comparison of the Franco-Flemish tradition with the emerging national styles. Performance practice options will be explored. Prerequisites: MUS 2700 and MUS 2710. 2 hours

MUS 5870 Contemporary Music A survey of trends in European music and music of the Americas from about 1910 to the present. 3 hours

MUS 5900 Studies in Pedagogy Topics to be announced. Selection will be made from the following: Keyboard Pedagogy, Vocal Pedagogy, String Pedagogy, Brass Pedagogy, Woodwind Pedagogy, Pedagogy of Teaching Theory, or similar topics. Prerequisite: 3000-level applied music or permission of instructor. 1 to 4 hours

MUS 5950 Workshops in Music Education Intensive, short-term courses that address the instructional and pedagogical issues found in today's schools, as well as issues of specific concern for current teachers in the field of music. Topics will be from all areas of music education. Prerequisite: Advisor consent. 1 to 4 hours

MUS 5965 Sound Reinforcement Practicum Provides students hands-on experience with audio system setup (e.g., microphones, speakers, mixers), control, and live sound reinforcement at School of Music and/or other events. May be repeated for credit. Open to upperclass and graduate students. Prerequisite: MUS 194 1 hour

MUS 5970 Projects in Music A program of independent study to provide the unusually qualified music student with the opportunity to explore a topic or problem of interest, under the guidance of one of

the faculty of the department. The initiative for planning the project must come from the student and must be approved by the faculty member proposed to supervise the study. Prerequisite: Application approved by School of Music. 1 to 4 hours

MUS 5990 Projects in Recording Technology An independent study allowing the unusually qualified student the opportunity to explore a topic or problem in recording technology. Prerequisites: MUS 5960, approved application, and instructor permission required. 1 to 4 hours

MUS 5995 Special Topics in Music Study of a specialized music or music-related topic. Examples could include topics in performance practice, entrepreneurship and multimedia production; thematic topics which are linked to special musical events or combine multiple sub-disciplines in music (e.g., history and theory); and interdisciplinary studies (e.g., music and communication, music and computer science, music and health sciences, etc.). Topics will vary and be announced each semester offered. May be repeated for credit with different topic or by instructor approval. Open to upperclass and graduate students. Prerequisite: Instructor approval. 1 to 4 hours

MUS 6000 Applied Music Private lessons for the graduate student in the major performance area. Includes conducting. 1 to 4 hours

MUS 6070 Conducting Master Class A course designed to explore the multiple roles of the conductor. Topics may include philosophy, aesthetics, ensemble organization and administration, collaborative literature, working with guest artists and rehearsing ensembles outside students' area of expertise. Course may be repeated for credit. Prerequisite: Admission to the graduate conducting program or conducting as an approved cognate. 1 hour

MUS 6100 Introduction to Research in Music A course in the general methods and techniques of research in the field of music. This course will provide practical experience in research for scholarship and performance, including the use and evaluation of important source materials, comparison of editions, and modes of presentation (e.g., written research, program notes, oral presentations, grant writing). Students will complete a comprehensive bibliography and a research paper in the area of concentration of their graduate program of study. 3 hours

MUS 6110 Introduction to Empirical Research in Music A course in fundamental principles and procedures of empirical research. Students will plan and write a research proposal; understand and evaluate research studies; and organize, analyze and report on data generated by common research designs. 3 hours

MUS 6140 Chamber Music Ensemble Special ensembles comprised of graduate students to perform chamber music works. Ensembles may include a variety of combinations, e.g., string quartets, woodwind quintets, percussion ensembles, piano trios, vocal ensembles, etc. Prerequisite: Approved application. 1 hour

MUS 6170 Opera Workshop A production experience in acting, singing, accompanying, and producing of musical theatre. The class is offered each semester and culminates in the performance of an opera or operatic scenes. Open to advanced singers, pianists, and persons interested in production techniques. Admission is by personal interview with the instructor. 2 hours

MUS 6400 Band Techniques and Organization Organization of the school instrumental program. Rehearsal techniques. Survey of band literature. Analysis and discussion of the problems of the instrumental teacher. 2 hours

MUS 6410 Choral Techniques and Organization The study of choral activities in relation to organization, repertoire, style, diction, singing technique, balance, blend, tone quality, phrasing, rehearsal technique, and conducting. 2 hours

MUS 6420 Philosophy of Music Education Designed to acquaint the student with aesthetic and pragmatic thinking regarding the nature and value of music, and to provide a rationale for curricular development and teacher behavior. 2 hours

MUS 6500 Seminar in Music Education Each participant will be expected to develop a project which is of interest to him or her, but each project will be subject to group discussion, review and analysis. The lectures and reading will deal with the entire field of music education. This course may be repeated for credit. 2 hours

MUS 6620 Seminar in Composition The completion of an original composition of larger scope for any combination of acoustic instruments, and which may include multi-media. Seminars will include analysis of advanced contemporary works, discussion of current trends in music composition, and reading assignments. This course may be repeated for credit. Restricted to master's in Music Composition. Prerequisite: May be taken by graduate Music Composition majors, or with instructor approval. 2 hours

MUS 6640 Form in Music A survey of the musical forms, large and small, including works from the Baroque period to the present day. Analysis of both structure and texture of representative works of the various periods and styles. Prerequisite: MUS 6100 (may be taken concurrently), or MUS 6110 (may be taken concurrently), or instructor approval. 3 hours

MUS 6660 The Teaching of Theory Analysis of various techniques, philosophies, and materials used in teaching theory and their relative strengths and weaknesses. Application of what we know about the learning processes to theory and the practical application of theory to all musical study. 2 hours

MUS 6700 Seminar in Musicology This course examines various topics, methods, and issues in musicological writing and research. Topics will vary and be announced each semester. The approach taken in the course reflects current practice in the field of musicology, drawing upon theoretical writings in a variety of disciplines including ethnomusicology, musicology, anthropology, theatre, cultural studies, and gender and women's studies. A course designed to permit the student to explore selected areas of music history. May be repeated for credit under different topics. Prerequisite: MUS 6100 (may be taken concurrently), or MUS 6110 (may be taken concurrently), or instructor approval. 3 hours

MUS 6740 Seminar in Music Theory This course examines various topics, methods, and issues in music theory. Topics will vary as announced each semester and can include analytical methods, speculative theory, theory pedagogy, technological applications, musical genres, or composer studies. May be repeated for credit under different topics. Prerequisite: MUS 6100 (may be taken concurrently), or MUS 6110 (may be taken concurrently), or instructor approval. 3 hours

MUS 6790 Composers A topics course which investigates a significant composer from a historical and/or theoretical perspective. The particular composer will vary as announced each semester. The course may be repeated for credit when dealing with a different composer. Prerequisite: MUS 6100 (may be taken concurrently), or MUS 6110 (may be taken concurrently), or instructor approval. 3 hours

MUS 6800 Seminar in Music Therapy A course designed to permit the student to explore selected areas of music therapy, i.e., therapeutic techniques, evaluation procedures, or role of music therapy in a variety of settings (hospital, school, community). A project is required, which will be subject to group analysis and discussion. This course may be repeated for credit. 2 hours

MUS 6810 Research in Musical Behavior This course focuses on development and employment of research methods and techniques applied to the psychology of music and/or music education. Individuals enrolled in this course are responsible for planning and executing a research project, which in the case of music education students, satisfies the "terminal project" requirement, or in the case of music therapy students, may be a feasibility or pilot investigation related to the required MUS 7000 Master's thesis. When this course is the culminating project for the master's degree, a public presentation/oral examination on the project is an integral part of the requirement. Prerequisite: MUS 6110 2 hours

MUS 6900 Graduate Recital Presentation of a full-length recital in the student's area of concentration (music performance, conducting, or composition). When this course is the culminating project for the

master's degree, an oral examination on the recital materials and related areas is an integral part of the requirement. 2 hours

MUS 6910 Special Project in Music Education A research project in the area of the teaching of music. The nature of the special project is to be determined in consultation with the Graduate Advisor and appropriate members of the graduate faculty. Projects must be approved prior to registration. When this course is the culminating project for the master's degree, an oral examination on the project and related areas is an integral part of the requirements. This course may be repeated for credit. 2 hours

MUS 6980 Readings in Music An advanced, designated project of study. Graduate students may enroll in this course after consultation with the graduate advisor. Prerequisite: Approval of graduate advisor. 1 to 4 hours

MUS 7000 Master's Thesis 1 to 6 hours
MUS 7100 Independent Research 2 to 6 hours
MUS 7120 Professional Field Experience 2 to 12 hours

College of Health and Human Services

Alcohol and Drug Abuse

ADA 5200 Family and Addiction This course provides students with knowledge on the effects of substance abuse on the family. Included is theory and practice regarding dysfunctional relationships, children of substance abusers, and resulting disorders. Open to upperclass and graduate students. 3 hours

ADA 5370 Constructive Confrontation and Referral in Substance Abuse Services This course provides students with knowledge of intervention strategies for active substance abusers. Emphasis is placed on strategic constructive confrontation techniques and effective referral processes. Open to upperclass and graduate students. 3 hours

ADA 5650 Alcohol, Drug Abuse, and Violence This course provides the student with knowledge on the multiple relationships of substance abuse and violence, child abuse, and other assaultive behaviors. Open to upperclass and graduate students. 3 hours

ADA 5700 Field Education: Substance Abuse A clinical, prevention, research, or administrative field experience meeting practice requirements in certification of substance abuse services. The field experience involves direct supervision by faculty and clinical supervisors. Open to upperclass and graduate students. Graded on a Credit/No Credit basis. Students should enroll in ADA 5700 only if they are also concurrently enrolled in an internship with another WMU master's degree program. The site must be approved by the SPADA field coordinator. Prerequisite: Admission to certificate program and permission of instructor. 1 to 6 hours

ADA 5980 Readings in Substance Abuse Services This course is offered as independent study and readings under the guidance of a faculty member. Initiative for planning the topic for investigation and seeking the appropriate faculty member comes from the student, with consultation from the advisor. Open to upperclass and graduate students. Prerequisite: Instructor and program advisor approval. 1 to 4 hours

ADA 6060 Causes of Substance Abuse This course will examine the three major theories that explain the causes of psychoactive substance use: the biological, psychological, and sociological. The historical responses of society to substance use such as strategies including control, prevention, intervention, and treatment will be outlined and the research of various epidemiologic patterns and social correlates of substance use will also be studied. Open to graduate students only. (Cross-listed with CECP 6340 and SWRK 6530). 3 hours

ADA 6110 Physical Aspects of Addictive Drugs This course will have students examine the neurobiology of the addiction process, treatment of cognitive deficiencies, and mental and medical health conditions

that may mimic or co-exist with substance abuse disorders. Current literature will be utilized in order to address medical and pharmacological interventions and treatment. Open to graduate students only. 3 hours

ADA 6115 Applied Neuropsychopharmacology of Addictive Drugs The intent of this course is to provide students with an advanced understanding of the physiological and behavioral processes involved in psychoactive substance use, misuse, and addiction. An emphasis will be placed on the major and minor classifications, biology, and pharmacology of commonly abused legal and illegal psychoactive substances. The course will include a history of drug use, drug metabolism, dependence, withdrawal, and practice and policy application for recovery, prevention and treatment. Open to graduate students only. 3 hours

ADA 6330 Diversity and Ethical Issues in Addictions This course will examine the social, political, economic, and cultural context in which substance abuse exists, including risk and resiliency factors of individuals and groups. Multicultural and ethical issues will be addressed in regards to strategies for prevention, treatment, and recovery and students will be expected to participate in self-exploration of their beliefs, values and behaviors. Open to graduate students only. 3 hours

ADA 6340 Recovery Oriented Systems of Care This course will examine the understanding that recovery from substance abuse and dependency is a process of change which occurs within a systemic model of care that includes prevention, intervention, treatment, and management of substance use disorders. Students will have exposure to various substance abuse screening and assessment instruments, counseling strategies, and treatment modalities in order to assess, treat, and refer to the appropriate service providers along the continuum of care. This course will also provide students with an understanding of the ethical codes related to substance abuse counseling. Open to graduate students only. (Cross-listed with CECP 6360 and SWRK 6550). 3 hours

ADA 6400 Co-Occurring Disorders and Addictions This course will instruct students on how to screen for co-occurring disorders with various assessment tools, address each diagnosis in a comprehensive treatment approach, and assist them in developing skills to deliver supportive, appropriate treatment services for clients with more than one disorder.Open to graduate students only. 3 hours

ADA 6410 Addiction in Family Systems This course will examine how substance use disorders affect family members, couples, and significant others as well as how they impact and influence the user. In addition, the models of diagnosis, assessment tools, and methods of intervention for these groups will be identified and discussed. Strategies and behaviors that family members, couples, and significant others must adopt in order to assist in sustaining recovery and healthy relationships will be outlined. Open to graduate students only. 3 hours

ADA 6420 Clinical Supervision of Addiction Services This course will prepare students to understand the various clinical supervision theories, roles, and modalities in order to implement leadership in the counseling profession. Moreover, aspects of the supervisory alliance will be addressed as well as issues surrounding critical thinking, self-awareness, competency, and organizational/administrative skills. Open to graduate students only. 3 hours

ADA 6700 Field Practicum The field practicum component of the graduate certificate is designed to be a capstone learning experience during which students, with the guidance and assistance of those persons who are currently working in the substance abuse field, can apply the knowledge and information obtained in the academic setting to further develop and refine his/her skills. Since skills are acquired by the application of information, knowledge, and many hours of practice, field practicum is required of all students in order to complete the graduate certificate in substance abuse. Open to graduate students only. 3 hours

ADA 7120 Professional Field Experience Please refer to The Graduate College section of course descriptions. Open to graduate students only. 2 to 12 hours

Blindness and Low Vision Studies

BLS 5440 Educating Individuals with Severe Impairments This course develops specific skills in the assessment, prescription, implementation, and evaluation of educational programs for persons with severe

impairments. Course content focuses on the areas of mobility, communication, sensorimotor development, self-help skills, cognition, and adaptive behavior. Open to upperclass and graduate students. 3 hours

BLS 5770 Services for Persons Who Are Blind or Have Other Disabilities This course explores issues that affect services for people who are blind or have other disabilities. It includes prevalence and incidence of various disabling conditions, adaptive recreation, history and current status of service legislation, consumer organizations, professional organizations, accreditation, models of service delivery, national and international agencies and organizations, national and international resources, social service programs, and trends and future issues. 1 to 2 hours

BLS 5840 Computer Technology in Rehabilitation This course is designed to introduce the student to computer technology, as it relates to persons with disabilities. Students will learn the uses, parts, and operating commands of common adaptive computers, as well as the software used with them. In addition, the major adaptive forms of input and output are investigated. 3 hours

BLS 5860 Job Development and Placement This course applies career choice and job placement concepts to persons with disabilities. It includes occupational aspects of disability, pertinent laws and regulations including ADA and sections 5010-5040, labor market analysis, job analyses, rehabilitation engineering, job development, and work modification strategies. It provides experience in making employer contacts, overseeing clients' job seeking efforts, and training in job-related social skills. 3 hours

BLS 5880 Psychosocial Aspects of Disability This course provides an understanding of the psychosocial factors that impact upon the integration into society of individuals with disabilities. It examines the philosophy of rehabilitation, major classifications and paradigms, common stereotypes, attitudes and their measurement, psychiatric disabilities, theories of adjustment, psychosocial losses, issues relating to sexuality, personal adjustment training, the role of the family, the use of effective interaction skills, and the stages of group process. 2 hours

BLS 5890 Medical and Functional Aspects of Disability This course presents an interdisciplinary approach to the study of multi-handicapping conditions in rehabilitation. It includes information on the major disabling conditions such as traumatic brain injury, orthopedic, neuromuscular, visual, learning, speech and hearing, cardiovascular, mental and emotional disabilities, and other selected disabilities. Emphasis is placed upon the cumulative effects of concomitant disabilities with additional emphasis on visual impairment. 2 hours

BLS 5900 Physiology and Function of the Eye The anatomy, structure, and function of the eye, along with various eye diseases and malfunctions, are stressed in this course. The student is familiarized with various eye conditions, and their relationship to rehabilitation practice is emphasized. 2 hours

BLS 5905 Physiology and Performance in Blind Children This course provides an overview of the neurological aspects of visual perception and examines how children who are blind develop skills in using tactile, kinesthetic, and acoustic perception to guide their exploration of the world around them. Biomechanical and acoustic skills will also be explored as practiced by adults who are blind. Open to graduate students only. 2 hours

BLS 5910 Braille and Other Tactual Communication Systems This course provides students with a basic knowledge of the literary Braille code - reading and writing - and an overview of other communication methods available to people with visual impairments. It introduces methods for teaching Braille and an introduction to the development of literacy skills for individuals who are braille readers. Methods of literacy assessment for children and adults, instructional methods, and Braille translation hardware and software are also covered. Open to upperclass and graduate students. 3 hours

BLS 5912 Teaching Math and Specialty Codes This course contains study of the Nemeth Code and Unified English Braille Code (UEB) for math and science, the music code, adaptations of worksheets and tests, foreign languages (French, German, and Spanish), transcription of diacritical marks (dictionary notation), and an introduction to computer Braille notation. Open to upperclass and graduate students. 2 hours

BLS 5915 Braille for Orientation and Mobility Specialists This course is designed to teach Orientation and Mobility (O&M) Specialists how to read and write uncontracted Braille, as well as prepare quality tactile graphics. Instruction in Braille reading, as well as in writing with a slate and stylus, Braille Writer, and Braille emulation and translation software will be provided. In addition, the use of both high and low tech products for creating tactile graphics will be taught. Students will also be provided an introduction to contracted Braille. Methods for implementing the use of Braille and tactile graphics into appropriate teaching strategies will also be emphasized. Open to graduate students only. Restricted to masters in orientation and mobility, and orientation and mobility for children. 1 hour

BLS 5920 Orientation and Mobility with Children This course will provide strategies for teaching orientation and mobility to children. Assessment techniques and methods for teaching the orientation and mobility curriculum (indoor travel to business travel) to children, including those with multiple disabilities or deaf-blindness will be presented. In addition, strategies for teaching areas specific to children, such as body image, sensory-motor, concept development, and cortical visual impairment will be addressed. The focus will be on practical application in educational settings. Open to graduate students only. Restricted to masters in orientation and mobility, and orientation and mobility for children.
3 hours

BLS 5930 Methods of Teaching Adaptive Communications Adaptive communication methods used by visually impaired persons and the techniques of teaching them are explored in this course. Specifically, Braille, handwriting, listening, and recording devices, and typewriting are presented. This course also includes a supervised practical teaching experience with a visually impaired person. 2 hours

BLS 5945 Itinerancy and Effective School Collaboration This course is designed to prepare educators of the blind and visually impaired to work effectively within school systems utilizing an itinerant teaching model. Legal issues related to providing educational services within schools will be stressed, including federal and state laws pertaining to special education with emphasis on those that are specific to blindness and visual impairment. Both the IEP and IFSP process will be thoroughly covered, including how to develop, implement, and monitor effective educational goals. Effective communication strategies for working with other educators and families will also be emphasized. Open to graduate students only. Restricted to masters in teachers of the visually impaired, orientation and mobility, and orientation and mobility for children. 2 hours

BLS 5950 Introduction to Orientation and Mobility The content of this course relates to problems of independent travel which result from reduced vision. Simulated experiences are provided which emphasize the sensory, conceptual, and performance levels needed for independent travel in a variety of environments. Prerequisite: Restricted to students enrolled in the Orientation and Mobility and Special Education/Orientation and Mobility programs. 2 to 4 hours

BLS 5960 Electronic Devices Systematic instruction in use of fundamental electronic travel aids and overview of major electronic devices. Prerequisite: BLS 5950. 1 hour

BLS 5970 Principles Low Vision This course deals with assessment and remediation of functional problems encountered by low vision persons. Emphasis is placed on optical, non-optical, and electronic aids which increase visual functioning. In addition, the nature and needs of low vision persons and the interprofessional nature of low vision services are stressed. The concepts are explored that deal with initial intake procedures, assessment of near and distant visual acuity, assessment of near and distant visual field, color testing, evaluation of sunwear, evaluation of optical aids, training in the use of optical and non-optical aids, and use of equipment such as the lensometer and tonometer. Prerequisite: Approval of advisor. 2 hours

BLS 5980 Readings in Blindness and Low Vision This course is arranged on an individual basis to provide students an opportunity to independently pursue an in-depth study of special areas of interest.
1 to 4 hours

BLS 6010 Small “N” Research: Design and Analysis This course explores standard group research design, single subject and small numbers design. The emphasis is placed upon providing students with a

working knowledge of an experimental methodology for demonstrating control in social/behavioral research where more traditional experimental control group paradigms are not feasible or desirable. This approach is based on an experimental methodology for demonstrating control with single or small numbers of subjects which includes design, internal replication, measurement, reliability, and visual or statistical analysis. Open to graduate students only. 3 hours

BLS 6020 Gerontology in Orientation and Mobility and Rehabilitation Teaching Elderly individuals who are visually impaired have specific rehabilitation needs that differ from those of younger people. This course is intended to provide students with discipline specific knowledge and adapted skills necessary to assist older persons who are blind or visually impaired meet their independent living and travel needs. The course begins with a brief overview of aging. Topics then include vision loss related to aging, assessment, hearing and vision screening, environmental evaluation and modification, and adaptation of independent living and travel techniques for people who are elderly. Open to graduate students only. 2 hours

BLS 6040 Issues in Travel This course presents theoretical and practical content that facilitates effective teaching of independent travel skills to individuals who are visually impaired. The topics of this course include assessment of environmental accessibility, use of sound in navigation, and identification of risk in travel situations. Restricted to master's in the Orientation and Mobility, Orientation and Mobility for Children, and Special Education/Orientation and Mobility programs. Open to graduate students only. 2 hours

BLS 6050 Practice in Low Vision This is a laboratory course which provides experiences in initial intake procedures, assessment of near and distant visual acuity, assessment of near and distant visual field, color testing, evaluation of sunwear, evaluation of optical aids, training in the use of optical and non-optical aids, and use of equipment such as the lensometer and tonometer. Open to graduate students only.
Prerequisite: Approval of advisor. 1 hour

BLS 6060 Adaptive Sports Activities for Visually Impaired Children This course introduces students to the adapted methods that are utilized in teaching physical education, recreation, and sports skills to young learners with visual impairments. The course will include a combination of lecture and practice. It will present: a) basic techniques and rules for each sport, b) techniques for adapting the activities, c) methods for teaching these techniques, d) an overview of appropriate elementary games, and e) resources useful for obtaining sports and recreational materials and information. Participation will be required. Each enrollee will take part in many physical activities while under the blindfold or using low vision simulators. Open to graduate students only. 1 hour

BLS 6070 Adaptive Art Activities for Visually Impaired Children This course will prepare students to instruct children who are visually impaired in the application of three-dimensional media such as raised line drawing, Braille graphics, clay, plaster, wood, etc. Open to graduate students only. 1 hour

BLS 6100 Assisted Research This course requires involvement in a research project related to the student's program of study. Depending on the individual program, students may contribute to data collection for a project developed by a faculty member, discuss research topics applicable to their field of study, conduct literature searches on a relevant topic, perform data analysis, or develop research agendas of their own. Open to graduate students only. 1 to 6 hours

BLS 6300 Special Topics in Blindness and Low Vision This is a variable topics, variable credit graduate level course for consideration of current and special interests in blindness and low vision studies. Specific topics and number of credit hours will be announced each time the course is scheduled. Open to graduate students only. 1 to 4 hours

BLS 6320 Teaching Children with Visual Impairments This course is designed to examine how to assess, teach, and modify existing curriculum for infants, preschoolers, and young school-aged children who are blind. This course combines these three elements and prepares teachers for the role of itinerant or classroom teacher, as well as for the role of consultant for parents and other teachers. Open to graduate students only. 3 hours

BLS 6360 Teaching for Independent Living Provides a practical background and a basic understanding of skills and problems of the homebound and visually impaired. Open to graduate students only. 4 hours

BLS 6640 Principles of Rehabilitation Teaching This course is concerned with the development and the current status of rehabilitation teaching as an occupation, with particular emphasis upon the teaching methods and human interrelationships which are essential in instructing visually impaired adults in skills of independent living. Open to graduate students only. 3 hours

BLS 6910 Practicum in Rehabilitation Teaching This course provides supervised teaching experiences with blind or visually impaired individuals in a variety of settings. Course Prerequisite: Restricted to students enrolled in the following programs: Rehabilitation Teaching and Rehabilitation Counseling and Teaching. Open to graduate students only. 1 to 2 hours

BLS 6940 Principles of Orientation and Mobility This course is concerned with the development and current status of orientation and mobility as an occupation. It emphasizes the perceptual and cognitive bases of travel with impaired vision as well as teaching methods and human interrelationships which are essential for effectively instructing visually impaired adults in skills of independent travel. Open to graduate students only. 3 hours

BLS 6950 Practicum in Orientation and Mobility This course provides supervised teaching experiences with blind or visually impaired individuals in a variety of settings. Included within this course may be a weekly seminar to discuss procedures of assessment, principles of professional practice and effective strategies. Prerequisite: Restricted to students enrolled in the Orientation and Mobility programs. Open to graduate students only. 1 to 3 hours

BLS 6955 Practicum in TCVI This course requires a supervised practicum experience in a school or agency that services children who are blind or have low vision. During the experience, the opportunity is provided for practical application of principles and methods during the instructional process. Open to graduate students only. 2 hours

BLS 7100 Independent Research This course requires the completion of a research project related to rehabilitation and conducted with faculty guidance. Open to graduate students only. Prerequisite: Restricted to students enrolled in the Orientation and Mobility, Rehabilitation Teaching, Rehabilitation Counseling and Teaching, and TCVI/Orientation and Mobility programs. 2 to 6 hours

BLS 7120 Professional Field Experience This course requires a supervised internship experience in an organization that serves blind and visually impaired persons, during which the opportunity is provided for practical application of principles and methods in blind rehabilitation. Open to graduate students only. Prerequisite: Restricted to students enrolled in the Orientation and Mobility, Rehabilitation Teaching, and TCVI/Orientation and Mobility programs. 2 to 12 hours

Bronson School of Nursing

NUR 5300 Theoretical Foundations of Nursing Practice This course focuses on the theoretical foundations of nursing practice. The relationship of nursing practice and relevant theories is considered within historical and social context. Students will develop the foundation of a personal philosophy of nursing and health care. Open to graduate students only. Prerequisites: Admission to the Master of Science in Nursing program or instructor approval. 3 hours

NUR 6010 Advanced Pathophysiology This course focuses on pathophysiological processes across the lifespan and the development of clinical reasoning skills that distinguish the relationship between normal physiology and specific system alterations produced by injury and disease. Particular attention will be given to etiology, pathogenesis, and clinical manifestations of major health problems, taking into consideration developmental and environmental influences. Open to graduate students only. Prerequisite: Admission to the Master of Science in Nursing program, or instructor approval. 3 hours

NUR 6020 Advanced Physical Assessment This course focuses on the study of advanced clinical assessment and reasoning skills through the lifespan with emphasis on differentiating normal from abnormal findings in the domains of physical, psychosocial, behavioral, and genetic assessments. Students will practice age-appropriate developmental screening and deliver anticipatory guidance for health promotion and management in illness and disease prevention. Students refine and strengthen increasingly complex skills in listening, history taking, screening, documentation, and clinical reasoning. It is expected that students will provide fair, inclusive, and respectful treatment of all people, while self-monitoring for personal biases and stereotypes. Open to graduate students only. Prerequisite: NUR 6010 or instructor approval. 3 hours

NUR 6030 Advanced Pharmacology This course focuses on clinical uses and application of advanced pharmacology and pharmacotherapeutics for common disease conditions encountered across the lifespan and different care settings. Pharmacological mechanisms, drug interactions, side effects and contraindications are presented as a basis for clinical judgment and management of patients. Principles of altered pharmacodynamics relative to age, race, and ethnic groups are covered. Cost/benefit and legal aspects of pharmacological interventions are addressed. Open to graduate students only. Prerequisite: Admission to the Master of Science in Nursing program, or instructor approval. 3 hours

NUR 6320 Health Care Policy, Organization & Financing This course provides an overview for understanding health care policy, organization, and financing of health care within a systems analysis framework. Current literature and research related to health care policy development and the health care delivery systems are examined. Specific attention is paid to the role of discipline specific leadership in policy development and in changing the health care delivery and the health care education systems. Restricted to Master of Science in Nursing or instructor approval. 3 hours

NUR 6400 Professional Inquiry: Qualitative and Quantitative Methods This course focuses on qualitative and quantitative methods of nursing inquiry and builds upon the foundations of research critique and evidence for informed practice studied at the baccalaureate level. Students will engage in critical analysis of research methods useful for evidence based practice to improve quality and safety in nursing and health care. Open to graduate students only. Restricted to masters in Nursing. Prerequisite: NUR 5300 or instructor approval. 3 hours

NUR 6410 Methods for Measuring Quality in Health and Educational Systems This course analyzes measurement theory and its implications for research, quality improvement, program evaluation and evidence based practice in health care systems and educational institutions. The course will include an introduction to data analysis that can be implemented in measuring quality and safety in nursing care, education, and health care systems. Open to graduate students only. Restricted to masters in Nursing. Prerequisites: NUR 5300 and NUR 6400; or instructor approval. 3 hours

NUR 6420 Quality and Safety in Promoting Health This course examines principles and practice of quality and safety in the delivery of health care. Focus is on the models and strategies used to support a culture of safety and improved quality of care to promote optimal health. Open to graduate students only. Prerequisite: Admission to the Master of Science in Nursing program, or instructor approval. 3 hours

NUR 6600 Curriculum and Teaching of Theory in Health Disciplines This course is designed to provide experienced health professionals, with the theoretical foundations of how adults learn, curricular design in a health professional discipline, strategies for teaching in the theoretical domain, and evaluation of learning. This course provides practical experience with didactic teaching under the guidance of a mentor teacher. Open to graduate students only. Restricted to masters in Nursing. Prerequisite: Current enrollment in a graduate program in a health related area or a completed graduate degree in a health discipline with instructor approval. 3 hours

NUR 6610 Clinical Teaching and Evaluation in Health Disciplines This course is designed to provide experienced health professionals with the theoretical and practical aspects of teaching and evaluation of adult learner performance in practice settings. The theories and principles of teaching and learning related to adults explored in NUR 6600 provide the theoretical foundations, with application to the practice setting. This course

provides practical experience in clinical teaching under the guidance of a mentor teacher. Open to graduate students only. Prerequisites: Admission to the Master of Science in Nursing program or instructor approval and successful completion of NUR 6600. 3 hours

NUR 6620 The Scholarship of Teaching in a Clinical Discipline This course builds upon the knowledge and experience gained in NUR 6600 and NUR 6610, as well as the knowledge and skills of the expert clinician. It is designed to provide health professionals with exposure to the scholarship of teaching and what it means to function in academic or clinical settings. Open to graduate students only. Prerequisite: NUR 6610 3 hours

NUR 6630 Practicum in Teaching This course is a mentored teaching practicum in the content area and site agreed by the graduate student and the course faculty. The practicum offers the learner an opportunity to develop, implement, and evaluate a teaching/course plan based on the principles of teaching and learning and curriculum development acquired in the prerequisite courses. Periodic seminars are included. Open to graduate students only. Restricted to masters in Nursing. Prerequisites: NUR 6600, NUR 6610, and NUR 6620. 3 hours

NUR 6640 Field Practicum This course includes 135 practicum hours (90 practice and 45 project development), and offers students an opportunity to apply newly developed skills and relate theoretical content, as presented in core and specialty courses, to real practice situations. Students will create or expand on current research or planning with a clinical or community organization. This might include needs assessment, evaluation, comparison of interventions. Open to graduate students only. Restricted to master's in Nursing. Prerequisite: Admission to the Master of Science in Nursing program, or instructor approval. 3 hours

NUR 6900 Special Topics in Nursing Critical examination of advanced topics within the nursing discipline. The course topic will be indicated in the student record. May be repeated for credit under different topics. Open to graduate students only. Restricted to master's in Nursing. Prerequisite: Admission to the Master of Science in Nursing program, or instructor approval. 1 to 3 hours

Gerontology

GRN 6700 The Study of Human Aging This course addresses research methods and results related to the biology, psychology and sociology of human aging. The course includes research methods, health changes, positive aging, disease, and diversity in later life. Open to graduate students only. 3 hours

GRN 6800 Global Issues and Cultural Perspectives on Aging This course focuses on the emerging ideas and new paradigms for the aging process worldwide. The central idea will be focused on different perceptions of aging in different regions and within regions. This course will address health, wellness, illness, and images of aging. Students will compare and contrast disease and health opportunities worldwide and explore the questions related to adult development and creating a more positive later life. This course will include development of skills to communicate effectively with all older adults. Open to graduate students only. Prerequisite: GRN 6700 or equivalent approved by program advisor. 3 hours

GRN 6810 Aging Health and Social Services This course describes the U.S. Aging Network and other services available to support elders in the community. This course also describes the health care environment in the U.S. and other countries. Students will examine current research on evidence based interventions and effective skills for interacting with older adults and their families. It will include emphasis on diversity while addressing access to health care and evaluating public policy. Open to graduate students only. Prerequisite: GRN 6700 (may be taken concurrently) or equivalent approved by program advisor. 3 hours

GRN 6900 Special Topics in Gerontology This course allows students to gain knowledge from topics of their choice relating to aging. Topics will be offered during the semester and the student chooses three. Each module will need to be completed within a given time frame. Specific course content will vary over time, and will support different contexts for a gerontology career. May be repeated for credit. Open to graduate students only. Prerequisite: GRN 6700 or equivalent approved by program advisor. 1 to 6 hours

GRN 7100 Independent Research Please refer to The Graduate College section for course descriptions. May be repeated for credit. Graded on a credit/no credit basis. Open to graduate students only. Prerequisite: Application and department approval. 2 to 6 hours

GRN 7110 Gerontology Project This course offers hands-on experience in applying skills and knowledge in settings supporting or partnering with older adults. Students will create or expand on current research or planning with a community organization. This might include needs assessment, evaluation, business plan, comparison of interventions, etc. This project will build on knowledge and skills learned in other gerontology courses. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisites: GRN 6700, GRN 6800 and GRN 6810 or approval from program advisor. 2 to 6 hours

Integrative Holistic Health and Wellness

HOL 5300 Special Topics in Holistic Health Variable topic, variable credit course for consideration of current and special interests in holistic health. Specific topics, number of credit hours and prerequisites, if any, will be announced each time the course is scheduled. May be repeated for credit with different topics. Special topics are offered each semester and may include: Bodymind Nutrition, Biofeedback, Chi Gong, Understanding Grief and Loss, Science and Spirit of Holistic Health, and Advanced Spirituality. Other topics are planned. Open to upperclass and graduate students. 1 to 4 hours

HOL 5301 Meditation to Enhance Living The purpose of Meditation to Enhance Living is to introduce the student, through direct experience, to the practical application of meditation in daily life. We will discuss and experience various forms of meditation from different cultural and religious perspectives, yet the basic meditation practice is secular in nature. The latest scientific research on meditation will be reviewed, research that clearly supports the efficacy of meditation in reducing stress and in producing a sense of inner calm or peace. Participants who apply this practice to their daily lives will achieve a significant reduction in stress as well as an increase in their performance and perceived ease of performance. Open to upperclass and graduate students. 1 hour

HOL 5302 Advanced Meditation to Enhance Living The purpose of Advanced Meditation is to deepen, through direct experience, the student's capacity to meditate and to apply meditation with increasing ease and effectiveness in daily life. We will discuss and experience various forms of meditation from different cultural perspectives yet the basic meditation practice is secular in nature. Prior experience with meditation is required. Open to upperclass and graduate students. 1 hour

HOL 5303 Tai Chi to Enhance Living This course will provide students with an understanding of the body and mind health benefits of Tai Chi through learning and practicing a short set and other fundamental exercises. The benefits of practicing Tai Chi for health and well-being will be explored through a selected review of the research on the topic. This course will also prepare students to apply for certification to lead others in Tai Chi practice through the Arthritis Foundation (AF). This will be accomplished by providing students with both the didactic and the practice elements to meet AF requirements. Open to upperclass and graduate students. 1 hour

HOL 5304 Yoga to Enhance Living This class is intended to introduce students to the history, philosophy, science, spirituality and health benefits that yoga has to offer. The class will combine lectures with the practice of yoga techniques including: asana (holding of postures), pranayama (breathwork), and meditation. Open to upperclass and graduate students. 1 hour

HOL 5305 Mindfulness Theory and Skills This course will focus on the theoretical and experiential foundations of mindfulness. Research on the benefits of mindfulness for physical and mental health issues will be explored as well as the literature supporting the use of mindfulness in personal and professional relationships. Both formal mindfulness practices as well as informal strategies for everyday mindfulness will be offered and practiced in the class and individually. This class utilizes experiential activities, guided readings and reflective learning as well as focused scholarly study. Although there will be some overlap in the course content for HOL 5305 and HOL 3305, requirements will differ in specific content areas, and assessment measures will not be

completely the same. Students will not be able to enroll in both classes either concurrently or sequentially. Open to upperclass and graduate students. 3 hours

HOL 5310 Introduction to Holistic Health The primary purpose of this course is to provide an introduction to the philosophies, theories, and concepts involved in holistic health care. It is meant to serve both as a general educational experience for persons wishing to become familiar with holism and essential basic instruction for persons wishing to apply for admission to the graduate certificate program in Integrative Holistic Health and Wellness. Open to upperclass and graduate students.

3 hours

HOL 5320 Holistic Approaches to Personal Relationships The purpose of this course is to provide an understanding of relationship development. In order to do this, students will acquire knowledge in self-concept formation, social systems theory, values development, and communication models. A major emphasis in the course will be on how to assist people in establishing and maintaining healthy relationships. Open to upperclass and graduate students. 3 hours

HOL 5321 Holistic Health Coaching This course introduces students to the foundational concepts of psychological coaching, including the history and theoretical roots, related professional organizations, and ethical codes regulating the coaching profession. The instructor, a professionally certified coach and trainer, will provide an overview of coaching techniques and models of coaching, as well as the role of coaching in promoting holistic health. Clear distinctions will be drawn between psychological coaching and psychotherapy, as well as other helping models. This course will also include an overview of the dimensions of wellness and how coaching techniques can promote lasting change to better support well-being. Suggestions and encouragement for integrating coaching skills into related professional roles will also be emphasized. Open to upperclass and graduate students.

3 hours

HOL 5330 Holism and Community A course designed to help students better understand the dynamics of community and the potential for holistic growth and health through the investment of self in a common and purposeful experience with others. Open to upperclass and graduate students. 3 hours

HOL 5340 Holistic Health and Spirituality This course helps students better understand the spiritual dimensions of each individual and the relationship of spirituality to the meaning of health. Various spiritual traditions, philosophies, and practices will be explored with the primary emphasis on the implications of these teachings for everyday living. The course will address the role of spirituality in the therapeutic process for health care professionals and resources available for practitioners and educators. The format for the course will include lecture, discussion, experiential activities and audio/video presentations. Open to upperclass and graduate students.

3 hours

HOL 5350 Holistic Approaches to Stress Students will be exposed to the current research and theories regarding stress acquisition and management. Historical precepts and information drawn from current scholarly sources will be presented to provide a thorough understanding of the physiological, neurological, physiological, and sociological causes for and impact of stress, as well as the spiritual considerations in stress acquisition and management. Students will be taught a variety of stress prevention and reduction methods and how to apply these to their own lives and the lives of those with whom they may work. Open to upperclass and graduate students. 3 hours

HOL 5360 Wellness Skills for Health Professionals This course introduces wellness information and strategies for use by students and professionals working in the health and human services fields. The course is designed to teach the theories and techniques used to address wellness issues related to emotional, relational, cognitive, physical, and spiritual concerns. This course is designed to help students and health care professionals explore these wellness issues in their own lives to insure they are able to provide effective services to their clients/patients/consumers and to assist in preventing compassion fatigue. It is also designed to provide them with a guide to implementing these same wellness practices with those with whom they are working. Students will be exposed to current research in the areas of wellness and neurological functioning as it relates to wellness. Finally, students will explore diversity issues and ethical practices as they relate to wellness strategies. Open to upperclass and graduate students. 3 hours

HOL 5370 Health and Humor This course will focus on the physical, intellectual, emotional and spiritual dimensions of laughter, humor and play. We will explore recent discoveries and research regarding their role in human physical and mental health. Students will learn about the social significance of humor and play, what makes people laugh and why, the role of happiness, and will learn ways to increase happiness and playfulness, use laughter and humor as a stress management technique, and build a basis for appropriate use of humor in helping others. Open to upperclass and graduate students. 3 hours

HOL 5380 Eastern Thought and Practice Eastern thought and practice has informed our current understanding of the mind/body/spirit connection. For thousands of years the spiritual and/or philosophical practices of the Eastern psychological traditions taught practitioners how to cultivate the qualities of self-awareness, focus, kindness, contentment, mindfulness, and compassion. Modern day science has confirmed that these qualities have a direct and positive impact on health. Through comparative analysis of various philosophical and religious traditions (primarily Tibetan and Zen Buddhism) and experiences, students will explore these practices and consider how they inform their daily life, their understanding of themselves, their communities and the wider world and how they have influenced and continue to influence current scientific research on the mind/body/spirit connection. The meditative/mindfulness practices will help students move along the path to their own sense of inner peace, calmness, clarity and liberation. Open to upperclass and graduate students. 3 hours

HOL 5500 Introduction to Holism and Expressive Arts This course is a survey of expressive arts therapies used to facilitate the healing process and will deepen the student's understanding of the role of creative expression in health and healing. The use of arts therapies to promote health, reduce stress, and complement the traditional treatment of physical and mental illness will be discussed. Topics covered will be visual arts, sound/music, movement/dance, writing/poetry, and drama/psychodrama. The format for the course will be a combination of experiential creative activities, guest lectures, and video and audio presentations. No artistic experience or background required. Open to upperclass and graduate students. 3 hours

HOL 5510 Holistic Approaches to Healing Through Visual Art This course introduces a holistic approach to the use of visual art in healing; how to choose and present appropriate art experiences; spontaneous and directed theme art activities, resources, and materials; guides for interpreting art; and ethics. A variety of activities such as drawing, painting, clay, sand tray, collage, mandalas, and masks will be explored. The format for the course is a combination of experiential activities, lectures, video, and slide presentations. The course is designed to give students and professionals in the counseling, social work, psychology, health care, occupational therapy, art, and other fields some practical tools and considerations for using art for health and healing with others or for personal growth. No artistic experience or background required. Open to upperclass and graduate students. 3 hours

HOL 5520 Healing through Movement This course is a survey of the use of movement for health and healing. Several movement and dance specialty areas are covered in order to explore personal growth, creativity, balance, stress reduction, spirituality, and cultural perspectives on healing of self and others. Body awareness, breathing, and communication will be emphasized throughout the exploration of movement modalities, such as Authentic Movement, Contact Improvisation, Creative Movement, Feldenkrais, Interplay, Labyrinth Walking, Progoff Journal Writing, Tai Chi Chuan, Dances of Universal Peace, and Movement Therapy. The format for the course will be a combination of lectures, discussion, experiential activities, and audio and video presentations. Students enrolled in social work, counseling psychology, occupational therapy, nursing, physical education, and dance will especially benefit from this course. No movement or dance experience is required. Open to upperclass and graduate students. 3 hours

HOL 5530 Holistic Strategies for Illness and End of Life This course will examine holistic strategies and techniques designed to help people cope with illness along the continuum from diagnosis through the end-of-life. Topics will include: complementary methods that assist with treatment, surgery, medical procedures, pain management; guided imagery; psychosocial/spiritual considerations; being/supporting the caregiver; and death and dying. Students will pursue their individual interests in a project which will include assessment, research and recommendations of holistic modalities for a person dealing with a particular illness. This course is appropriate for professionals/students in healthcare and related fields and for individuals who are looking

for assistance with their own illness or caring for a loved one. Open to upperclass and graduate students. 3 hours

HOL 5540 Love and Forgiveness Students will be exposed to current research in the areas of love and forgiveness and the impact they have on an individual's personal well-being as well as social well-being. We will examine our own views of and experiences with love and forgiveness as well as how these have been viewed and experienced by notable others in literary, political, and religious areas. We will explore what contributes to the development of a grievance, what maintains it, and what gets in the way of being able to forgive it. And, we will examine methods of achieving love and forgiveness in our lives, and the positive benefits these have. Open to upperclass and graduate students. 3 hours

HOL 5550 Successful Aging-Holistic Perspectives This course will focus on holistic factors of aging and lifestyle choices that enable people to preserve and even enhance wellness and vitality in later life. Current images and myths of aging will be explored and research studies that outline holistic ways to delay, prevent, or positively treat common chronic diseases will be presented along with programs and policies that enable older people to practice positive aging strategies. This course will highlight the qualities of older people who remain physically active, intellectually engaged, emotionally involved, spiritually connected, and vital throughout their years. Open to upperclass and graduate students. 3 hours

HOL 5560 Understanding Grief and Loss This course examines basic principles of grief and loss including the many types of loss, mourning, common reactions, manifestations and myths. Also considered are ambiguous loss, disenfranchised loss, substance use related to grief and the special needs of those who grieve in prison. Grief support in the form of healing listening is explored as well as issues related to self-awareness, self-care and boundaries in supporting those who grieve. The issues are explored through the lens of Holism as it relates to physical, emotional, intellectual, relational and spiritual areas. Open to upperclass and graduate students. 3 hours

HOL 5980 Readings in Holistic Health This course provides individualized, independent study and readings under guidance of a faculty member. Initiative for planning topic for investigation and seeking the appropriate faculty member comes from the student, with consultation from the advisor. Prerequisite: Consent of instructor. Open to upperclass and graduate students. 1 to 4 hours

HOL 6500 Seminar in Holistic Methods This course serves as a follow-up to HOL 5310 and is a required course for the Graduate Certificate in Integrative Holistic Health and Wellness. It offers students an exploration of holistic approaches to wellness promotion, therapy, stress-management, and professional self-care that honor the interdependent relationship between body, mind, spirit, and community. The course also provides an overview of various paradigms of health, holistic approaches to assessment, skills in accessing and discerning relevant research, and examples of “holism in action” in the community. The format for the courses will be a combination of experimental activities, lectures, discussions, personal reflections, small group activities, guest speakers, and audio/visual presentations. Through these learning experiences students will have the opportunity to develop a deeper knowledge of the relationship between body, mind, and spirit as well as how to integrate this into their personal and professional practice. Prerequisite: HOL 5310 or instructor approval. 3 hours

HOL 6700 Professional Field Experience This registration is designed to give the student a total learning experience during which the student can apply some of the knowledge and information obtained in the health and human services academic setting and further develop and refine his/her professional skills with the guidance and assistance of those professionals currently working in the health and human services area. Prerequisites: HOL 5310 and HOL 6500. 1 to 6 hours

HOL 6910 Spirituality and the Therapeutic Process This seminar will explore the relationship of spirituality and the therapeutic process as they relate to clinical practice. Spirituality will be studied as an important resource in psychological health and in healing. In addition, the spiritual lives of therapists will be looked at as a means to support their ability to offer the core therapeutic conditions. Theoretical models for integrating spirituality into practice will be offered and specific teachings and practices from a variety of religious traditions will be presented as resources for the healing process. One goal of the seminar is to enable those in the helping professions

to work with their client's spiritual life without imposing their own framework. This course is designed for all health and human services workers, but has a special emphasis on the therapeutic process. 3 hours

HOL 6970 Independent Study in Holistic Health This course will provide an independent study instructional format for integrative holistic health and wellness certificate students. Prerequisite: Instructor approval. 1 to 4 hours

HOL 7120 Professional Field Experience The purpose of this course is to provide advanced students in a health care related area an opportunity to become familiar with the "holistic" approach to health care. While using their own discipline as a beginning point, each student will become acquainted with different approaches to health care from both traditional and non-traditional perspectives. The principal goal is to encourage a perception of clients as whole persons whose symptoms represent an underlying discoordination in mind, emotions, and body. 2 to 12 hours

Interdisciplinary Health Programs (School of)

MPH 6000 Public Health Biology Public Health Biology provides a foundation of biological concepts necessary for the practice of public health. Topics to be included are genetics, mutation, pathology, mechanisms of disease, immunological functions and regulation, and infectious agents. There will be a focus on the physiology and pathology of selected major organ systems and associated diseases of public health importance. Open to graduate students only. Prerequisite: Enrollment in Master of Public Health (MPH) courses requires admission to the MPH program or the approval of the Coordinator for the Master of Public Health program. Corequisite: MPH 6004 3 hours

MPH 6004 Public Health Policy and Administration This course is an introduction to the basic principles of public health and the development of the public health system in the United States. Students will be introduced to concepts from public policy, organizational behavior, and political science. Students will be presented with current issues in United States health policy and the present organization of the United States health care system, including the role of the Affordable Care Act of 2013. Open to graduate students only. Prerequisite: Enrollment in Master of Public Health (MPH) courses requires admission to the MPH program or the approval of the Coordinator for the Master of Public Health program. Corequisite: MPH 6000 4 hours

MPH 6012 Epidemiology The Epidemiology course introduces students to the principles, methods, and applications of epidemiological investigation in public health practice. The course will cover methods to describe quantitatively the patterns of disease in populations, estimations of risk, surveillance, and disease investigation. The course will also cover sources of data, limitations of studies, and evaluation of the scientific literature. Open to graduate students only. Prerequisite: MPH 6000 and MPH 6004 with a grade of "B" or better in all prerequisites. Enrollment in Master of Public Health (MPH) courses requires admission to the MPH program or the approval of the Coordinator for the Master of Public Health program. 4 hours

MPH 6016 Environmental Health Sciences This introduction to Environmental Health Sciences will focus on environmental factors associated with food, water, air, solid and liquid waste, occupation, and radiation that can impact health. The basic principles of toxicology, exposure assessment, risk assessment, risk perception, and environmental health policy will be presented. Open to graduate students only. Prerequisite: MPH 6012 with a grade of "B" or better. Enrollment in Master of Public Health (MPH) courses requires admission to the MPH program or the approval of the Coordinator for the Master of Public Health program. Corequisite: MPH 6020 4 hours

MPH 6020 Case Studies in Public Health This course will examine how various components of public health have been brought together to address four issues of historical significance in public health, including one communicable disease issue and one issue involving an environmental health situation. The focus will be on the scientific evidence relating to the issue, the control or mitigation that was implemented, and the legal and leadership steps that were taken to resolve the issue. Student participation in discussion of the success and/or failure of the response to the issue will be required. Open to graduate students only. Prerequisite: MPH 6012 with a grade of "B" or better. Enrollment in Master of Public Health (MPH) courses requires admission to the MPH program or the approval of the Coordinator for the Master of Public Health program. Corequisite: MPH 6016 2 hours

MPH 6024 Public Health Planning and Evaluation Students will develop skills in community assessment and planning, program planning, logic models, and logical frameworks. Students will use methods of decision analysis and cost-effectiveness analysis, resource allocation, and clinical decision making. They will also gain experience in designing program evaluations for public health programs. Open to graduate students only. Prerequisite: MPH 6020 with a grade of "B" or better. Enrollment in Master of Public Health (MPH) courses requires admission to the MPH program or the approval of the Coordinator for the Master of Public Health program. 4 hours

MPH 6028 Public Health Communication and Marketing Successful communication is critical for many aspects of public health work. This course will prepare students to assess community needs and to develop, implement, and evaluate public health communication and social marketing strategies. It will look at the potential role of the media in communicating about health. It will also explore unique issues that need to be taken into consideration when developing and disseminating crisis and emergency risk messages intended to protect the public's health. Open to graduate students only. Prerequisite: MPH 6024 with a grade of “B” or better. Enrollment in Master of Public Health (MPH) courses requires admission to the MPH program or the approval of the Coordinator for the Master of Public Health program. Corequisite: MPH 6032 3 hours

MPH 6032 Health Education and Behavior This course will examine factors that can compromise or enhance health. It will provide information on how to select and/or develop, implement, and evaluate evidence-based, theory-driven health education and health promotion programming focused on individual level behavior change, as well as change at the systems or policy level that would support and facilitate individual level behavior change. Special attention will be given to designing health education and health promotion programming for populations disproportionally impacted by health issues often addressed through public health interventions. Open to graduate students only. Prerequisite: MPH 6024 with a grade of “B” or better. Enrollment in Master of Public Health (MPH) courses requires admission to the MPH program or the approval of the Coordinator for the Master of Public Health program. Corequisite: MPH 6028 4 hours

MPH 6036 Public Health Preparedness This course introduces the student to the public health role in community preparedness for disasters, whether they are intentional, accidental, or natural. Included will be the effects of biological, chemical, and radiological agents; command and control procedures; roles of other key players; and risk communications during disasters. Open to graduate students only. Prerequisite: MPH 6028 with a grade of "B" or better. Enrollment in Master of Public Health (MPH) courses requires admission to the MPH program or the approval of the Coordinator for the Master of Public Health program. Corequisites: MPH 6040 and MPH 6044. 2 hours

MPH 6040 Public Health Informatics Public Health Informatics is concerned with tools that are used in public health to analyze and communicate data to inform public policy, public health practice, and health management. This course will cover the basics of geographic information systems (GIS), surveillance systems, and large datasets and how these can combine to provide insights into factors which impact health. This course will include a discussion of data privacy and data reporting. Open to graduate students only. Prerequisite: MPH 6028 and MPH 6032, with a grade of “B” or better in all prerequisites. Enrollment in Master of Public Health (MPH) courses requires admission to the MPH program or the approval of the Coordinator for the Master of Public Health program. Corequisites: MPH 6036 and MPH 6044. 2 hours

MPH 6044 Public Health Practicum I In combination, the Public Health Practicum I course and Public Health Practicum II course provide a structured and supervised professional experience in an approved public health or community health agency or organization. The practicum provides students with a practical experience through which they have the opportunity to apply and synthesize and integrate knowledge, skills, and competencies gained through coursework in a real-world setting. Practicum I will be comprised of 120 clock hours focused on planning and initiating the implementation of a public health project that is consistent with the student's career goals and that benefits the agency or organization they have selected for their practical experience. Enrollment in Master of Public Health (MPH) courses requires admission to the MPH program or the approval of the Coordinator of the Master of Public Health program. Open to graduate students only. Prerequisites: MPH 6016, MPH 6028 and MPH 6032; with a grade of "B" or better in all prerequisites. Corequisites: MPH 6036 and MPH 6040. 3 hours

MPH 6048 Public Health Practicum II In combination, the Public Health Practicum I course and Public Health Practicum II course provide a structured and supervised professional experience in an approved public health or community health agency or organization. The practicum provides students with a practical experience through which they have the opportunity to apply and synthesize and integrate knowledge, skills, and competencies gained through coursework in a real-world setting. Practicum II will be comprised of 60 clock hours focused on the implementation and completion of a public health project that is consistent with the student's career goals and that benefits the agency or organization they have selected for their practical experience. As part of the course, students will complete a critical analysis of the practicum experience. Enrollment in Master of Public Health (MPH) courses requires admission to the MPH program or the approval of the Coordinator of the Master of Public Health program. Open to graduate students only. Prerequisite: MPH 6044 with a grade of "B" or better. Corequisites: MPH 6052 and MPH 6056. 1 hours

MPH 6052 Integrative Project I In combination, the Integrative Project I course and Integrative Project II course provide students with a culminating experience through which they can demonstrate their mastery of public health competencies. In the Integrative Project I course, students will identify a significant public or community health issue. They will then plan and initiate the implementation of a project that is consistent with their career goals, showcases their leadership skills, and provides evidence of their ability to synthesize and integrate knowledge, skills, and competencies from across the Master of Public Health curriculum. Open to graduate students only. Prerequisite: MPH 6036 and MPH 6040, with a grade of “B” or better in all prerequisites. Enrollment in Master of Public Health (MPH) courses requires admission to the MPH program or the approval of the Coordinator for the Master of Public Health program. Corequisites: MPH 6048 and MPH 6056. 1 hour

MPH 6056 Public Health Leadership In this course, students will learn about different leadership styles and define their own style(s) of leadership. The course will then build on the lessons from previous courses and integrate them with behaviors and approaches that are needed for successful leadership, including coalition building, networking, and cultural and political competency. Open to graduate students only. Prerequisite: MPH 6036, MPH 6040 and MPH 6044, with a grade of “B” or better in all prerequisites. Enrollment in Master of Public Health (MPH) courses requires admission to the MPH program or the approval of the Coordinator for the Master of Public Health program. Corequisites: MPH 6048 and MPH 6052. 3 hours

MPH 6060 Integrative Project II In combination, the Integrative Project I course and Integrative Project II course provide students with a culminating experience through which they can demonstrate their mastery of public health competencies. In the Integrative Project II course, students complete the project they have selected for their culminating experience. They prepare and deliver an oral and written presentation that describes every facet of the project including findings and recommendations. The end product demonstrates mastery of public health knowledge, skills, and Master of Public Health program competencies. Open to graduate students only. Prerequisite: MPH 6052 with a grade of "B" or better. Enrollment in Master of Public Health (MPH) courses requires admission to the MPH program or the approval of the Coordinator for the Master of Public Health program. Corequisites: MPH 6064 1 hour

MPH 6064 Public Health Law and Ethics This course will provide a foundation in the relevant laws in public health and health care systems, including the process by which laws and regulations are developed, legal mandates for reporting diseases, immunization, compulsory medical testing, quarantine and other measures available to control the spread of diseases. The rights of the individuals versus the need of society to be protected will be discussed, as will legal tools that are available in the event of disasters and emergencies. Discussions of legal mandates will be conducted with considerations of the ethical issues that may be involved. Open to graduate students only. Prerequisite: MPH 6056 with a grade of "B" or better. Enrollment in Master of Public Health (MPH) courses requires admission to the MPH program or the approval of the Coordinator for the Master of Public Health program. Corequisites: MPH 6060 2 hours

Interdisciplinary Health Sciences

HSV 6700 Field Education This course is designed to give the student a total learning experience during which the student can apply some of the knowledge and information obtained in the health and human

services academic setting and further develop and refine his/her professional skills with the guidance and assistance of those professionals currently working in the health and human service arenas. Prerequisite: Consent of instructor. 1 to 6 hours

IHS 6240 Scientific Inquiry in Interdisciplinary Health Sciences This seminar orients students in the Ph.D. program in Interdisciplinary Health Sciences to historical factors and milestones in the development of current methods of scientific inquiry in health and human services, leading to current interdisciplinary research practices. Students will learn to analyze critically the assumptions of current theories and models used in research across health and human services disciplines. Format of sessions will include lecture and seminar features of student-led discussion and presentations. Open to graduate students only. Prerequisite: Admission to the Ph.D. in Interdisciplinary Health Sciences or instructor approval. 1 hour

IHS 6250 Health and Human Services Organization and Delivery Systems Provides a systematic approach to understanding the origin, evolution, and utilization of health and human services in the United States, including a review of the legislative process. Concepts and perspectives concerning the influence of economics and politics on current service provision are also explored. The course examines the institutional and individual providers, alternative delivery models, the dynamics of health and human service markets, and the impact of changing service environment on service organizations and delivery strategies. Topics such as managed care including Medicaid Managed Care, community health care, and the development of services responsive to the needs of special populations, multicultural societies, and underserved communities will be discussed. Open to graduate students only. Prerequisite: Admission to the Ph.D. in Interdisciplinary Health Sciences or instructor approval. 3 hours

IHS 6260 Qualitative Research Concepts in Interdisciplinary Health Sciences Students learn to design and conduct studies and analyze research findings using qualitative research methods. These methods include comparative, historical, case study, content analysis and other types of observation and interview strategies for data collection. Approaches include phenomenology, ethnography, narrative, and grounded theory. Students learn strengths and limitations of qualitative research approaches and methods for expanding the knowledge base in health and human services. Open to graduate students only. Prerequisite: Admission to the Ph.D. in Interdisciplinary Health Sciences or instructor approval. 3 hours

IHS 6270 Health and Human Services Policy and Politics Develops a systematic and analytical framework for understanding policy-making processes in health and human services, including identification of need and the formulation, implementation, and evaluation of policy. The political processes by which decisions are made and resources allocated and the ethics, legislative process, institutional, and special interest factors that affect these processes at local, state, and federal levels, are also considered. Open to graduate students only. Prerequisite: Admission to the Ph.D. in Interdisciplinary Health Sciences or instructor approval. 3 hours

IHS 6280 Statistics I in Interdisciplinary Health Sciences Provides an overview of the statistical concepts and methods often used in HHS research. Course content will include concepts of probability, hypothesis testing, measures of central tendency and dispersion, and sampling. Students will learn to conduct bivariate and multivariate statistical tests common in HHS research, and to interpret the results. Students will be introduced to basic concepts in parametric and non-parametric statistical analyses. Examples will be drawn from current research in health and human services, and students will acquire skills in critiquing research designs and statistical approaches. Open to graduate students only. Prerequisite: Admission to the Ph.D. in Interdisciplinary Health Sciences or instructor approval. 3 hours

IHS 6290 College Instruction and Assessment Examines current theories and best practices regarding learning, intelligence, memory, and learning styles and individual capabilities, and their application to curriculum design, instruction, and methods of assessment. The effects of class, gender, and culture on learning and teaching are analyzed, as well as curricular issues related to accreditation of programs and to professional licensure and certification. Open to graduate students only. Prerequisite: Admission to the Ph.D. in Interdisciplinary Health Sciences or instructor approval. 2hours

IHS 6300 Designing and Conducting Health and Human Services Research Students learn to formulate and focus research questions, select a research design to answer the questions, collect data or identify a data source, and develop a plan for analyzing and evaluating different types of data. Topics included in this course include commonly used experimental and quasi-experimental research designs and threats to internal and external validity of research results. Ethical issues in designing, conducting and reporting of research findings are also discussed, along with issues of multiculturalism and interdisciplinary approaches used in research design. Open to graduate students only. Prerequisite: Admission to the Ph.D. in Interdisciplinary Health Sciences or instructor approval. 3 hours

IHS 6310 Grant Proposal Development and Management Provides students with skills needed to compete for funding in health and human services. This course provides an overview of grant writing, including identifying sources of research and program development support and developing successful proposals, including drafting budgets, preparing research plans or evaluation plans, and developing collaborative relationships to strengthen grant proposals. Principles of project management also are discussed. These include ensuring fiscal and ethical accountability, interacting with collaborative partners, and documenting progress toward project goals. Open to graduate students only. Prerequisite: Admission to the Ph.D. in Interdisciplinary Health Sciences or instructor approval. 3 hours

IHS 6320 Innovative Pedagogy and Instructional Design Examines models of teaching and related research and the inclusion of innovative pedagogy; including teaching through technology, problem-based learning, collaborative learning, learner-centered instruction, and distance learning. Techniques for instructional design and assessment are discussed. Learners will be expected to apply one or more innovative pedagogies in an applied area. Open to graduate students only. Prerequisite: IHS 6290 with a grade of "CB" or better, and admission to the Ph.D. in Interdisciplinary Health Sciences or instructor approval. 3 hours

IHS 6330 Ethics and Law in Health and Human Services Students learn to apply ethical concepts, principles, and theories to health and human service decision-making, policy formulation, and to clinical and research situations. Current issues in healthcare and social ethics are examined, together with the legal and ethical concerns, which affect interdisciplinary collaborative practice. Laws are discussed which influence the provision and delivery of care and services at local, state, and federal levels. Open to graduate students only. Prerequisite: Admission to the Ph.D. in Interdisciplinary Health Sciences or instructor approval. 3 hours

IHS 6350 Evidence-Based Practice and Interdisciplinary Research in Health and Human Sciences This capstone course uses a seminar format for student-led discussions of evidence-based practice and interdisciplinary research. Course topics include theory and historical foundations, management structures and economic factors, team dynamics and communication, collaborative decision-making and conflict resolution, and methods of conducting research for, applying, and teaching evidence-based practice. Students apply the lens of evidence-based practice within and across disciplines to develop an interdisciplinary vision for addressing critical current issues in health and human services. Open to graduate students only. Prerequisite: Admission to the Ph.D. in Interdisciplinary Health Sciences or instructor approval. hours

IHS 6360 Statistics II in Interdisciplinary Health Sciences Continuing from material covered in IHS 6280, Statistics I in Interdisciplinary Health Sciences, this course examines theory and practice using advanced concepts of statistics with application to complex problems in interdisciplinary health and human services research. Addresses topics such as ANOVA and linear and logistic regression. Open to graduate students only. Prerequisite: IHS 6280 with a grade of "CB" or better" and admission to the Ph.D. in Interdisciplinary Health Sciences or instructor approval. 3 hours

IHS 6380 Special Topics in Interdisciplinary Health Sciences This is a variable topics, variable credit graduate level course for consideration of current and special interest in health and human services topics. Specific topics and number of credit hours will be announced each time the course is scheduled. May be repeated for credit. Open to graduate students only. Prerequisite: Admission to the Ph.D. in Interdisciplinary Health Sciences or instructor approval. 1 to 4 hours

IHS 6970 IHS Pre-Dissertation Seminar This course facilitates the transition from course work to dissertation research. Students must be registered continuously for at least one hour per session in the pre-

dissertation seminar with their academic advisors to maintain their residency in the Ph.D. program after completing required coursework and while completing any cognate courses, their four comprehensive examination products, and a dissertation concept paper. Graded on a Credit/No Credit basis. May be repeated for credit. Open to graduate students only. Prerequisite: Completion of required coursework in Ph.D. in Interdisciplinary Health Sciences and departmental approval. Corequisite: Completion of any remaining cognate courses. 1 to 6 hours

IHS 6980 Readings in Interdisciplinary Health Sciences This course is offered as independent study and reading under the guidance of a faculty member. Initiative for planning the topic for investigation and seeking the appropriate faculty member comes from the student, with consultation from the advisor. May be repeated. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisite: Admission to the Ph.D. in Interdisciplinary Health Sciences, and approval of instructor and program advisor. 1 to 4 hours

IHS 7100 Independent Research The student conducts independent research under advisement of the course instructor following approval of the research plan, which serves as the course syllabus, including specification of deliverables. May be repeated. Graded on a credit/No Credit basis. Open to graduate students only. Prerequisite: Admission to the Ph.D. in Interdisciplinary Health Sciences or instructor approval. 1 to 6 hours

IHS 7130 Practicum in College Teaching in Health and Human Services Students apply the theory and techniques learned in the pedagogical module of the Ph.D. program in Interdisciplinary Health Sciences and develop instructional skills through participation in a supervised teaching practicum. Students generally teach a two- or three-credit course, although modifications may be approved by the program. This mentored teaching experience involves demonstration of competence and innovation in course preparation, instruction, and assessment. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisite: IHS 6290 and IHS 6320 with a grade of "CB" or better, and admission to the Ph.D. in Interdisciplinary Health Sciences and departmental approval. 3 hours

IHS 7300 Doctoral Dissertation Students complete a traditional five-chapter dissertation or a three-paper dissertation, with an introductory chapter and a final discussion chapter, as approved by the student's dissertation committee. Students in the Interdisciplinary Health Sciences Ph.D. program must complete at least 12 dissertation hours and be registered for at least one hour of IHS 7300 every session after becoming eligible until graduation. May be repeated. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisite: Admission to the Ph.D. in Interdisciplinary Health Sciences and departmental approval. 1 to 12 hours

IHS 7350 Research Practicum The research practicum provides students with an experiential introduction to interdisciplinary research. Students plan, conduct, analyze (using quantitative techniques), and report original research (may involve secondary data analysis) under the guidance and supervision of a faculty member. Generally taken in two three-hour blocks in Summer I sessions of the first and second year in the program. May be repeated. Graded on a Credit/No Credit basis. Open to graduate students only. Prerequisite: Admission to the Ph.D. in Interdisciplinary Health Sciences or program approval. 1 – 6 hours

Interprofessional Education

IPE 6050 Study Abroad and Global Learning in Health and Human Services Study Abroad and Global Learning in Health and Human Services is an interdisciplinary course conducted outside the United States by WMU faculty in the College of Health and Human Services or others associated with WMU. Graduate students within the College of Health and Human Services may receive elective credits for this course. This course may be repeated up to 12 credit hours. Open to graduate students only. 1 to 6 hours

IPE 6350 Special Topics in Interprofessional Education This is a variable topics, variable credit graduate level course for consideration of current and special interests in health and human services. Specific topics and number of credit hours will be announced each time the course is scheduled. May be repeated for credit. Open to graduate students only. 1 to 6 hours

IPE 6800 Advances and Perspectives in Medicine and Health The course is designed to expose and involve students in the professional health-related sciences to current topics that influence the practice, quality, and delivery of health care. The course consists of attending a series of seminars per academic year which will be delivered by leading experts in issues related to medicine and health. Topics covered in the series of guest lectures include: ethics, professionalism, communication, health policy, health disparities, delivery of care, biomedical/translational/clinical/community-based research, bioengineering, business and legal aspects of health care, health informatics, and global health. Students are required to complete at least two guided reflection assignments during the course to develop their critical thinking skills and raise awareness to cross-disciplinary aspects and integration of health care teams. May be repeated for credit. Open to graduate students only. 1 hour

Occupational Therapy

OT 5300 Sensory Integration and the Child Study of theoretical principles and their application to evaluation and treatment of the child with sensory integrative dysfunction. Students will observe and participate in screening and evaluation of children, and they will design treatment plans for selected clients. Prerequisites: OT 4750. 3 hours

OT 5730 Therapeutic Use of Technology This course explores how a professional goes about evaluating, designing, and adapting technology to improve people's participation in activities of their choice. The course also explores current commercially available technology and available community-based services for people with impairments and/or activity limitations. Prerequisite: Senior standing or permission of instructor. 3 hours

OT 5735 Cognition and Visual Perception in Occupational Therapy This course will include concepts of vision, visual perception and cognitive evaluation and treatment carried out by occupational therapists in the clinical setting. The course will explore interventions to improve occupations with consideration for client factors, performance skills and patterns, context and environment, and activity demands. Underlying anatomy and neuroanatomy will be revealed. Open to upperclass and graduate students. Prerequisites: OT 3810, OT 3820, OT 3830, and OT 3840. 3 hours

OT 5800 Advanced Clinical Application of OT Clinical Reasoning This course will provide advanced knowledge of clinical evaluation tools and techniques. Students will be given additional training on the most commonly used and the state-of-the-art clinical evaluation tools. Advanced use of guidelines for practice and the integration of knowledge for clinical reasoning will be emphasized. Students will develop treatment plans for people with a variety of conditions and diagnoses. Evidence-based practice in OT will be used for analysis of evaluation tools and guidelines for practice. Prerequisite: OT 4750. 3 hours

OT 6000 Advanced Clinical Practice in Occupational Therapy This lecture/lab/discussion course is focused on the development of advanced knowledge and skills in both traditional and emerging areas of occupational therapy practice. Students will review and discuss current literature related to theory and research in selected clinical practice areas followed by application through participation in intensive hands-on workshops. Open to graduate students only. Prerequisite: Admission to program. 3 hours

OT 6330 Administration of Occupational Therapy This course will build basic skills of administration (planning, organizing, directing, coordinating, and controlling); in program development; in business planning; and in grant writing. Open to graduate students only. Prerequisites: All required undergraduate course work except Fieldwork II. 3 hours

OT 6335 Low Vision Rehab for OT I: Foundations of Rehabilitation This course introduces the occupational therapy student to vision rehabilitation and establishes the foundation for future courses within the certificate program. Foundational concepts of vision rehabilitation include an exploration of vision rehabilitation within and outside of medical setting, including the following topics: history of vision rehabilitation, interdisciplinary and multidisciplinary clinical practice models, policy, regulatory and certification issues, and professionals providing the services. This course also introduces psychosocial issues, such as depression and visual hallucinations as well as the conditions causing low vision. Evaluation principles of clients with low vision will be introduced, allowing the therapist to quantify vision loss and visual skills, while considering client factors, performance skills and patterns, context and environment, and activity demands. Open to graduate students only.

Restricted to Interdisciplinary Health Services: Occupational Therapy major, Graduate Certificate Program in Low Vision Rehabilitation for OT, and Master of Science in Occupational Therapy. 4 hours

OT 6400 Theory in Occupational Therapy This course explores core concepts, models, and paradigms of the past, present, and future and their influence on education, research, administration, and practice of occupational therapy. Components of theory, formulation of theory, and the effect of theory development on occupational therapy will also be explored. Open to graduate students only. Prerequisites: All required undergraduate course work except Fieldwork II (OT 4530 may be taken concurrently). 3 hours

OT 6435 Low Vision Rehabilitation for OT II: OT Assessment and Intervention This course will provide the occupational therapy clinician with the necessary skills to complete formal and informal assessments of occupational performance as well as intervention strategies to address deficits of occupational performance. Exploration of interventions to improve occupations with consideration for client factors, performance skills and patterns, context and environment, and activity demands. Occupations that will be specifically addressed during this course include: meal preparation, self-care, financial management, household management, functional communication and time management issues, leisure activities, and health and wellness. OT interventions addressed in this course include non-optical interventions and visual skills training, including scanning and pre-reading skills, reading and eye-hand coordination techniques in order to improve occupational performance. Open to graduate students only. Restricted to Interdisciplinary Health Services: Occupational Therapy major, Graduate Certificate Program in Low Vision Rehabilitation for OT, and Master of Science in Occupational Therapy. Prerequisites: OT 6335 or (BLS 5900 and BLS 5970). 3 hours

OT 6530 Special Topics in Occupational Therapy This is a variable topic, variable credit course for consideration of current and emerging practice topics and special interest areas in occupational therapy. Specific topics and number of credit hours will be announced each time the course in scheduled. May be repeated for credit with different topics. Open to graduate students only. Restricted to masters in Occupational Therapy. 1 to 4 hours

OT 6535 Low Vision Rehabilitation for OT III: Advanced Assessment and Intervention This course addresses analysis of and intervention for occupational performance for individuals with vision loss. Principles for improving occupational performance are the focus for this course and include the following areas of occupation: driving, computer use and assistive technology. A portion of the course will focus on applications for assistive technology and their use for occupations addressed in the course OT 6435 "OT Low Vision Rehabilitation for OT I", including meal preparation, household management, self-care, functional communication, financial management and leisure occupations. Exploration of interventions to improve occupations with consideration for client factors, performance skills and patterns, context and environment, and activity demands. A course requirement is an on-site lab, allowing for hands-on practice of OT assessment, occupational performance and intervention activities to increase the students' clinical competency. Open to graduate students only. Restricted to Interdisciplinary Health Services: Occupational Therapy major, Graduate Certificate Program in Low Vision Rehabilitation for OT, and Master of Science in Occupational Therapy. Prerequisite: OT 6435 3 hours

OT 6600 Research in OT I This course explores research in occupational therapy and related fields while developing research skills. It will include principles of research design, analysis and critique of research, ethical research practices, proposal development, and beginning familiarity with statistical analysis. Open to graduate students only. Prerequisites: All required undergraduate course work except Fieldwork I and II. 3 hours

OT 6610 Research in OT II The purpose of this course is to build the research skills necessary to engage in scholarly scientific inquiry. It will include data analysis, basic statistical procedures, dissemination of research, critiques of research, funding and basic computer use for statistical analysis. Open to graduate students only. Prerequisite: OT 6600. 3 hours

OT 6635 Low Vision Rehabilitation for OT IV: Theory and Practice This capstone course allows an opportunity for students to integrate vision rehabilitation knowledge, occupational therapy (OT) clinical reasoning skills, professional behaviors and attitudes, advocacy, policy and OT ethics. Students will work closely

with their mentor/advisor to design a project to demonstrate understanding of occupational therapy concepts as they relate to vision rehabilitation and the ability to lead and practice at the highest level of professional practice. Students will complete activities leading them toward certification as a low vision therapist (LVT) or an American Occupational Therapy Association (AOTA) specialty certification in low vision. Open to graduate students only. Restricted to Interdisciplinary Health Services: Occupational Therapy major, Graduate Certificate Program in Low Vision Rehabilitation for OT, and Master of Science in Occupational Therapy. Prerequisite: OT 6535 3 hours

OT 6860 Graduate Seminar This course examines topics relevant to new developments in environmental adaptations, treatment techniques, and/or innovations in the delivery of occupational therapy services. Open to graduate students only. Prerequisites: All required undergraduate course work except Fieldwork II. 3 hours

OT 6900 Fieldwork Level II A twelve-week, full-time affiliation in a hospital or community agency providing the student experience in designated areas of occupational therapy. Departmental consent only. Open to graduate students only. Prerequisite: Completion of OT 4820. 3 to 12 hours

OT 6910 Fieldwork Level II A twelve-week, full-time affiliation in a hospital or community agency providing the student experience in designated areas of occupational therapy. Departmental consent only. Open to graduate students only. Prerequisite: OT 6900 (may be taken concurrently). 3 to 12 hours

OT 6970 Investigations in Occupational Therapy Independent study provided for the qualified occupational therapy student under the guidance of a departmental faculty member. Open to graduate students only. Prerequisite: Consent of graduate coordinator and proposed faculty supervisor. 1 to 3 hours

OT 7000 Master's Thesis Please refer to The Graduate College section for course descriptions. Graded on a Credit/No Credit basis. May be repeated for credit. Open to graduate students only. Prerequisite: Approved application from department and Graduate College. 1 to 6 hours

OT 7100 Independent Research Please refer to The Graduate College section for course descriptions. Graded on a Credit/No Credit basis. May be repeated for credit. Open to graduate students only. Prerequisite: Approved application. 2 to 6 hours

OT 7100 Independent Research Please refer to The Graduate College section for course descriptions. Graded on a Credit/No Credit basis. May be repeated for credit. Open to graduate students only. Prerequisite: Approved application. 2 to 12 hours

Physician Assistant

MDSC 6100 Special Topics in Physician Assistant This course examines selected topics in medicine. Topics considered will vary from semester to semester. Open to graduate students only. Graded on a Credit/No Credit basis. Prerequisites: Enrollment in the Physician Assistant program and successful completion of previous MDSC courses. 1 to 3 hours

MDSC 6110 The Diagnostic Process I This is the first in a series of three courses designed to develop the knowledge, attitudes and skills requisite for medical history taking, physical examination, clinical problem solving, diagnostic assessment, treatment implementation, and for counseling and educating patients. Learning methods include lecture format, skills performance, clinical decision-making, role-playing, individual research, and case problem solving to integrate and synthesize these competencies. Open to graduate students only. Prerequisite: Admission to the Physician Assistant program or departmental permission. 2 hours

MDSC 6120 The Diagnostic Process II This is the second in a series of three courses presented sequentially through the pre-clinical year of training. This course provides opportunities for the systematic

evaluation of patient problems through history and physical examination, problem exploration, critical thinking and creative problem solving, lectures, demonstrations, group problem solving, practicum sessions, student examination of patients, as well as written and performance evaluation of these modalities, are included among the learning methodologies. Emphasis is placed on interviewing and physical examination, but more so on information gathering and synthesis to accomplish problem oriented patient care. Students will refine skills in eliciting and recording a complete patient database, as well as formulating differential diagnoses. Open to graduate students only. Prerequisite: Successful completion of prior semester P.A. course work or departmental permission. 2 hours

MDSC 6130 The Diagnostic Process III This is the summative offering in this series of three courses designed to develop competence in both the art and the science of patient evaluation. Students will continue to assess patients utilizing history taking and physical examination skills. Students will master special examinations such as for the pediatric patient, as well as the pregnant patient. Further emphasis will be placed on formulating diagnoses, therapeutic and patient education plans. Students will develop competencies in prevention strategies, and recording and communicating information in a medical team model. Open to graduate students only. Prerequisite: Admission to the Physician Assistant program. 1 hour

MDSC 6210 Medical Pathophysiology I This is the first in a three part sequence designed to provide the physician assistant student with a foundation for understanding human diseases. Students will review clinically relevant physiology and acquire a working knowledge of pathophysiology. Emphasis will be on the cellular mechanisms of disease and the body's reactions to them. Topics covered will parallel those in concurrent clinical science courses. Open to graduate students only. Prerequisite: Successful completion of prior semester P.A. course work or departmental permission. 1 hour

MDSC 6220 Medical Pathophysiology II This is the second in a three part sequence designed to provide the physician assistant student with a foundation for understanding human diseases. Students will review clinically relevant physiology and acquire a working knowledge of pathophysiology. Emphasis will be on the cellular mechanisms of disease and the body's reactions to them. Topics covered will parallel those in concurrent clinical science courses. Open to graduate students only. Prerequisite: Successful completion of prior semester P.A. course work or departmental permission. 1 hour

MDSC 6230 Medical Pathophysiology III This is the third in a three part sequence designed to provide the physician assistant student with a foundation for understanding human diseases. Students will review clinically relevant physiology and acquire a working knowledge of pathophysiology. Emphasis will be on the cellular mechanisms of disease and the body's reactions to them. Topics covered will parallel those in concurrent clinical science courses. Open to graduate students only. Prerequisite: Successful completion of prior semester P.A. course work or departmental permission. 1 hour

MDSC 6310 Integrated Medicine 1 This is the first of a series of nine primary care medicine courses, each of which will introduce students to a different area of primary care medicine. The courses will help students develop the knowledge required for the practice of medicine. The courses will cover clinical topics using a systems approach. Within each system, a lifespan approach will be used ranging from the pediatric patient through the geriatric patient. Each topic will be examined using the integration of pathophysiology, clinical diagnostic testing, diagnosis, treatment, including nutritional issues and available alternative medicine options. Students will also learn the knowledge, skills and attitudes required for counseling patients concerning clinical problems and educating patients in wellness and disease management and prevention. The integrated medicine course will form the basis for clinical evaluation, diagnosis, management, and appropriate referral when necessary, of various health and wellness processes throughout a person’s life. Open to graduate students only. Prerequisite: Admission to the Physician Assistant program. 2 hours

MDSC 6320 Integrated Medicine II This is the second of a series of nine primary care medicine courses, each of which will introduce students to a different area of primary care medicine. The courses will help students develop the knowledge required for the practice of medicine. The courses will cover clinical topics using a systems approach. Within each system, a lifespan approach will be used ranging from the pediatric patient through the geriatric patient. Each topic will be examined using the integration of pathophysiology, clinical diagnostic testing, diagnosis, treatment, including nutritional issues and available alternative medicine options. Students will also learn the knowledge, skills and attitudes required for counseling patients concerning clinical problems and

educating patients in wellness and disease management and prevention. The integrated medicine course will form the basis for clinical evaluation, diagnosis, management, and appropriate referral when necessary, of various health and wellness processes throughout a person's life. Open to graduate students only. Prerequisite: Admission to the Physician Assistant program. 2 hours

MDSC 6330 Integrated Medicine III This is the third of a series of nine primary care medicine courses, each of which will introduce students to a different area of primary care medicine. The courses will help students develop the knowledge required for the practice of medicine. The courses will cover clinical topics using a systems approach. Within each system, a lifespan approach will be used ranging from the pediatric patient through the geriatric patient. Each topic will be examined using the integration of pathophysiology, clinical diagnostic testing, diagnosis, treatment, including nutritional issues and available alternative medicine options. Students will also learn the knowledge, skills and attitudes required for counseling patients concerning clinical problems and educating patients in wellness and disease management and prevention. The integrated medicine course will form the basis for clinical evaluation, diagnosis, management, and appropriate referral when necessary, of various health and wellness processes throughout a person's life. Open to graduate students only. Prerequisite: Admission to the Physician Assistant program. 2 hours

MDSC 6340 Integrated Medicine IV This is the fourth of a series of nine primary care medicine courses, each of which will introduce students to a different area of primary care medicine. The courses will help students develop the knowledge required for the practice of medicine. The courses will cover clinical topics using a systems approach. Within each system, a lifespan approach will be used ranging from the pediatric patient through the geriatric patient. Each topic will be examined using the integration of pathophysiology, clinical diagnostic testing, diagnosis, treatment, including nutritional issues and available alternative medicine options. Students will also learn the knowledge, skills and attitudes required for counseling patients concerning clinical problems and educating patients in wellness and disease management and prevention. The integrated medicine course will form the basis for clinical evaluation, diagnosis, management, and appropriate referral when necessary, of various health and wellness processes throughout a person's life. Open to graduate students only. Prerequisite: Admission to the Physician Assistant program. 2 hours

MDSC 6350 Integrated Medicine V This is the fifth of a series of nine primary care medicine courses, each of which will introduce students to a different area of primary care medicine. The courses will help students develop the knowledge required for the practice of medicine. The courses will cover clinical topics using a systems approach. Within each system, a lifespan approach will be used ranging from the pediatric patient through the geriatric patient. Each topic will be examined using the integration of pathophysiology, clinical diagnostic testing, diagnosis, treatment, including nutritional issues and available alternative medicine options. Students will also learn the knowledge, skills and attitudes required for counseling patients concerning clinical problems and educating patients in wellness and disease management and prevention. The integrated medicine course will form the basis for clinical evaluation, diagnosis, management, and appropriate referral when necessary, of various health and wellness processes throughout a person's life. Open to graduate students only. Prerequisite: Admission to the Physician Assistant program. 2 hours

MDSC 6360 Integrated Medicine VI This is the sixth of a series of nine primary care medicine courses, each of which will introduce students to a different area of primary care medicine. The courses will help students develop the knowledge required for the practice of medicine. The courses will cover clinical topics using a systems approach. Within each system, a lifespan approach will be used ranging from the pediatric patient through the geriatric patient. Each topic will be examined using the integration of pathophysiology, clinical diagnostic testing, diagnosis, treatment, including nutritional issues and available alternative medicine options. Students will also learn the knowledge, skills and attitudes required for counseling patients concerning clinical problems and educating patients in wellness and disease management and prevention. The integrated medicine course will form the basis for clinical evaluation, diagnosis, management, and appropriate referral when necessary, of various health and wellness processes throughout a person's life. Open to graduate students only. Prerequisite: Admission to the Physician Assistant program. 2 hours

MDSC 6370 Integrated Medicine VII This is the seventh of a series of nine primary care medicine courses, each of which will introduce students to a different area of primary care medicine. The courses will help students develop the knowledge required for the practice of medicine. The courses will cover clinical

topics using a systems approach. Within each system, a lifespan approach will be used ranging from the pediatric patient through the geriatric patient. Each topic will be examined using the integration of pathophysiology, clinical diagnostic testing, diagnosis, treatment, including nutritional issues and available alternative medicine options. Students will also learn the knowledge, skills and attitudes required for counseling patients concerning clinical problems and educating patients in wellness and disease management and prevention. The integrated medicine course will form the basis for clinical evaluation, diagnosis, management, and appropriate referral when necessary, of various health and wellness processes throughout a person's life. Open to graduate students only. Prerequisite: Admission to the Physician Assistant program. 2 hours

MDSC 6380 Integrated Medicine VIII This is the eighth of a series of nine primary care medicine courses, each of which will introduce students to a different area of primary care medicine. The courses will help students develop the knowledge required for the practice of medicine. The courses will cover clinical topics using a systems approach. Within each system, a lifespan approach will be used ranging from the pediatric patient through the geriatric patient. Each topic will be examined using the integration of pathophysiology, clinical diagnostic testing, diagnosis, treatment, including nutritional issues and available alternative medicine options. Students will also learn the knowledge, skills and attitudes required for counseling patients concerning clinical problems and educating patients in wellness and disease management and prevention. The integrated medicine course will form the basis for clinical evaluation, diagnosis, management, and appropriate referral when necessary, of various health and wellness processes throughout a person's life. Open to graduate students only. Prerequisite: Admission to the Physician Assistant program. 2 hours

MDSC 6390 Integrated Medicine IX This is the ninth of a series of nine primary care medicine courses, each of which will introduce students to a different area of primary care medicine. The courses will help students develop the knowledge required for the practice of medicine. The courses will cover clinical topics using a systems approach. Within each system, a lifespan approach will be used ranging from the pediatric patient through the geriatric patient. Each topic will be examined using the integration of pathophysiology, clinical diagnostic testing, diagnosis, treatment, including nutritional issues and available alternative medicine options. Students will also learn the knowledge, skills and attitudes required for counseling patients concerning clinical problems and educating patients in wellness and disease management and prevention. The integrated medicine course will form the basis for clinical evaluation, diagnosis, management, and appropriate referral when necessary, of various health and wellness processes throughout a person's life. Open to graduate students only. Prerequisite: Admission to the Physician Assistant program. 2 hours

MDSC 6410 Procedures and Diagnostic Testing~I This is the first in a three course series. The series presents a foundation for understanding the appropriate uses and interpretations of clinical diagnostic testing. Through exploration of each of the major body systems, this course presents instruction in medical procedures used in the diagnosis or treatment of the common disorders of each system. It also provides the basis for the selection, utilization and interpretation of clinical laboratory, imaging and other diagnostic tests used to evaluate each system's principal functions. Open to graduate students only. Prerequisite: Admission to the Physician Assistant Program or departmental permission. 1 hour

MDSC 6420 Procedures and Diagnostic Testing~II This is the second in a three course series. The series presents a foundation for understanding the appropriate uses and interpretations of clinical diagnostic testing. Through exploration of each of the major body systems, this course presents instruction in medical procedures used in the diagnosis or treatment of the common disorders of each system. It also provides the basis for the selection, utilization and interpretation of clinical laboratory, imaging and other diagnostic tests used to evaluate each system's principal functions. Open to graduate students only. Prerequisite: Successful completion of prior semester P.A. course work or departmental permission. 1 hour

MDSC 6430 Procedures and Diagnostic Testing~III This is the third in a three course series. The series presents a foundation for understanding the appropriate uses and interpretations of clinical diagnostic testing. Through exploration of each of the major body systems, this course presents instruction in medical procedures used in the diagnosis of treatment of the common disorders of each system. It also provides the basis for the selection, utilization and interpretation of clinical laboratory imaging and other diagnostic tests used to evaluate each system's principal functions. Open to graduate students only. Prerequisite: Successful completion of prior semester P.A. course work or departmental permission. 1 hour

MDSC 6510 Health Promotion and Patient Counseling I This is the first course in a three-semester series presented sequentially through the preclinical year of training. This course will focus on the knowledge, skills and attitudes requisite for counseling and educating patients. These courses will emphasize counseling techniques, with application to clinical problems such as crisis intervention, substance abuse, human sexuality, multiculturalism, and patient/practitioner transference/counter transference. Theories of personality and psychopathology will be investigated as they relate to patient and practitioner coping styles and effectiveness. Students will also develop expertise in educating patients in wellness and disease prevention. Students will investigate the caregiver role and become insightful regarding their own needs and limitations. Open to graduate students only.
Prerequisite: Successful completion of prior semester of P.A. course work or departmental permission. 1 hour

MDSC 6520 Health Promotion and Patient Counseling II This is the second course in a three-semester series presented sequentially through the preclinical year of training. This course will focus on the knowledge, skills, and attitudes requisite for counseling and educating patients. These courses will emphasize counseling techniques with application to clinical problems such as crisis intervention, substance abuse, human sexuality, multiculturalism, and patient/practitioner transference/counter transference. Theories of personality and psychopathology will be investigated as they relate to patient and practitioner coping styles and effectiveness. Students will also develop expertise in educating patients in wellness and disease prevention. Students will investigate the caregiver role and become insightful regarding their own needs and limitations. Open to graduate students only. Prerequisite: Successful completion of prior semester of P.A. course work or departmental permission. 1 hour

MDSC 6530 Health Promotion and Patient Counseling III This is the third course in a three-semester series presented sequentially through the preclinical year of training. This course will focus on the knowledge, skills, and attitudes requisite for counseling and educating patients. These courses will emphasize counseling techniques with application to clinical problems such as crisis intervention, substance abuse, human sexuality, multiculturalism, and patient/practitioner transference/counter transference. Theories of personality and psychopathology will be investigated as they relate to patient and practitioner coping styles and effectiveness. Students will also develop expertise in educating patients in wellness and disease prevention. Students will investigate the caregiver role and become insightful regarding their own needs and limitations. Open to graduate students only. Prerequisite: Successful completion of prior semester of P.A. course work or departmental permission. 1 hour

MDSC 6550 Professional Issues for Physician Assistants I This is the first in a series of two courses designed to examine the role of the Physician Assistant and the place and relationships of the PA profession in society. It also examines the legal aspects of P.A. practice including licensing, malpractice, supervision, delegation, and prescribing. Finally it addresses the ethical and practice standards which society expects of a medical professional. Open to graduate students only.Prerequisite: Admission to the Physician Assistant program or departmental permission. 1 hour

MDSC 6560 Professional Issues for Physician Assistants II This is the second in a series of two courses designed to examine the role of the Physician Assistant and the place and relationships of the PA profession in society. It also examines the health care delivery systems including reimbursement, documentation, coding, and billing. Finally, it addresses the socioeconomic issues affecting health care. Open to graduate students only.
Prerequisite: Successful completion of Professional Issues for Physician Assistants I. 1 hour

MDSC 6610 Pharmacotherapeutics I This is the first of a sequence of three courses that focus on the concepts of pharmacotherapeutic principles necessary to provide a rational basis for clinical prescribing decisions. This course sequence will present the pharmacology, pharmacokinetics, side effects, complications, dosages, and contraindications using a systems approach. Open to graduate students only.
Prerequisite: Admission to the Physician Assistant program or departmental permission. 2 hours

MDSC 6620 Pharmacotherapeutics II This is the second of a sequence of three courses that focus on the concepts of pharmacotherapeutic principles necessary to provide a rational basis for clinical prescribing decisions. This course sequence will present the pharmacology, pharmacokinetics, side effects, complications, dosages, and contraindications using a systems approach. Open to graduate students only.

Prerequisite: Successful completion of prior semester P.A. course work or departmental permission. 2 hours

MDSC 6630 Pharmacotherapeutics III This is the third of a sequence of three courses that focus on concepts of pharmacotherapeutics principles necessary to provide a rational basis for clinical prescribing decisions. This course sequence will present the pharmacology, pharmacokinetics, side effects, complications, dosages, and contraindications using a systems approach. Open to graduate students only.
Prerequisite: Successful completion of prior semester P.A. course work or departmental permission. 2 hours

MDSC 6710 Advanced Clinical Anatomy I This is the first course in a three-semester human anatomy sequence designed to parallel and support clinical science courses in the Physician Assistant curriculum. Emphasis will be on achieving an understanding of anatomical concepts as they pertain to clinical problem solving and physical diagnosis. A laboratory component involving the study of cadaver prosections is included. Open to graduate students only. Prerequisite: Admission to the Physician Assistant graduate program. 2 hours

MDSC 6720 Advanced Clinical Anatomy II This is the second course in a three-semester human anatomy sequence designed to parallel and support clinical science courses in the Physician Assistant curriculum. Emphasis will be on achieving an understanding of anatomical concepts as they pertain to clinical problem solving and physical diagnosis. A laboratory component involving the study of cadaver prosections is included. Open to graduate students only. Prerequisite: Admission to the Physician Assistant graduate program. 2 hours

MDSC 6730 Advanced Clinical Anatomy III This is the third course in a three-semester human anatomy sequence designed to parallel and support clinical science courses in the Physician Assistant curriculum. Emphasis will be on achieving an understanding of anatomical concepts as they pertain to clinical problem solving and physical diagnosis. A laboratory component involving the study of cadaver prosections is included. Open to graduate students only. Prerequisite: Admission to the Physician Assistant graduate program. 1 hour

MDSC 6800 Research Concepts for Physician Assistants Topics considered vary from semester to semester. Topics include a review of statistics, Epidemiology, study design, methods and measures, and strategies for critically evaluating medical literature and medical informatics. Emphasis will be placed on the interpretation of medical literature and the application of evidence from clinical research in clinical decision-making. The course prepares students to understand the methods and limitation of various types of research and how research impacts their practice of medicine. Open to graduate students only. Graded on a Credit/No Credit basis.
Prerequisite: Enrollment in the Physician Assistant program. 1 to 3 hours

MDSC 6810 Professional Field Experience - Women's Health This course will place the student in a structured obstetrics/gynecology medicine clinical rotation under the direct supervision of a qualified preceptor. Students will be expected to become proficient with a variety of clinical presentations and procedures, subject to site limitations, and develop competence in diagnosing, evaluating, monitoring, treating, educating and/or referring patients. Selected readings will also be assigned to the students. These readings will change frequently to reflect current medical literature. Open to graduate students only. Graded on a Credit/No Credit basis.
Prerequisite: Completion of the preclinical year of the Physician Assistant program or departmental permission. 4 hours

MDSC 6820 Professional Field Experience - Pediatrics This course will place the student in a structured pediatrics medicine clinical rotation under the direct supervision of a qualified preceptor. Students will be expected to become proficient with a variety of clinical presentations and procedures, subject to site limitations, and develop competence in diagnosing, evaluating, monitoring, treating, educating and/or referring patients. Selected readings will also be assigned to the students. These readings will change frequently to reflect current medical literature. Open to graduate students only. Graded on a Credit/No Credit basis. Prerequisite: Completion of the preclinical year of the Physician Assistant program or departmental permission. 4 hours

MDSC 6830 Professional Field Experience - Surgery This course will place the student in a structured surgery medicine clinical rotation under the direct supervision of a qualified preceptor. Students will be expected to become proficient with a variety of clinical presentations and procedures, subject to site limitations, and develop competence in diagnosing, evaluating, monitoring, treating, educating and/or referring patients. Selected readings will also be assigned to the students. These readings will change frequently to reflect current medical

literature. Graded on a Credit/No Credit basis. Prerequisite: Completion of the preclinical year of the Physician Assistant program or departmental permission. Open to graduate students only. 4 hours

MDSC 6840 Professional Field Experience - Medical Psychiatry This course will place the student in a structured mental health clinical rotation under the direct supervision of a qualified preceptor. Students will be expected to become proficient with a variety of clinical presentations and procedures, subject to site limitations, and develop competence in diagnosing, evaluating, monitoring, treating, educating and/or referring patients. Selected readings will also be assigned to the students. These readings will change frequently to reflect current medical literature. Open to graduate students only. Graded on a Credit/No Credit basis. Prerequisite: Completion of the preclinical year of the Physician Assistant program or departmental permission. 4 hours

MDSC 6850 Professional Field Experience - Emergency Medicine This course will place the student in a structured clinical emergency medicine rotation under the direct supervision of a qualified preceptor. Students will be expected to become proficient with a variety of clinical presentations and procedures, subject to site limitations, and will develop competence in diagnosing, evaluating, monitoring, treating, educating and/or referring patients. Selected readings will also be assigned to the students. These readings will change frequently to reflect current medical literature. Open to graduate students only. Graded on a Credit/No Credit basis. Prerequisite: Completion of the preclinical year of the Physician Assistant program or departmental permission. 4 hours

MDSC 6860 Professional Field Experience - Family Medicine This course will place the student in a structured family medicine clinical rotation under the direct supervision of a qualified preceptor. Students will be expected to become proficient with a variety of clinical presentations and procedures, subject to site limitations, and develop competence in diagnosing, evaluating, monitoring, treating, educating and/or referring patients. Selected readings will also be assigned to the students. These readings will change frequently to reflect current medical literature. Open to graduate students only. Graded on a Credit/No Credit basis. Prerequisite: Completion of the preclinical year of the Physician Assistant program or departmental permission. 8 hours

MDSC 6870 Professional Field Experience - Internal Medicine This course will place the student in a structured clinical internal medicine rotation under the direct supervision of a qualified preceptor. Students will be expected to become proficient with a variety of clinical presentations and procedures, subject to site limitations, and will develop competence in diagnosing, evaluating, monitoring, treating, educating and/or referring patients. Selected readings will also be assigned to the students. These readings will change frequently to reflect current medical literature. Open to graduate students only. Graded on a Credit/No Credit basis. Prerequisite: Completion of the preclinical year of the Physician Assistant program or departmental permission. 8 hours

MDSC 6910 Clinical Practice Issues I This is the first course of a three-course seminar series designed to present and discuss various topics relevant to current clinical practice. The topics will be generated by the challenges the students will encounter in the practice of medicine. The course will also address the evolutionary trends in the healthcare arena and will facilitate the student's transition to professional practice. Open to graduate students only. Graded on a Credit/No Credit basis. Prerequisite: Completion of the preclinical year and concurrently enrolled in a professional field experience course or departmental permission. 1 hour

MDSC 6920 Clinical Practice Issues II This is the second course of a three-course seminar series designed to present and discuss various topics relevant to current clinical practice. The topics will be generated by the challenges the students will encounter in the practice of medicine. The course will also address the evolutionary trends in the healthcare arena and will facilitate the student's transition to professional practice. Open to graduate students only. Graded on a Credit/No Credit basis. Prerequisite: Successful completion of MDSC 6910 and concurrently enrolled in a professional field experience course or departmental permission. 1 hour

MDSC 6930 Clinical Practice Issues III This is the third course of a three-course seminar series designed to present and discuss various topics relevant to current clinical practice. The topics will be generated by the challenges the students will encounter in the practice of medicine. The course will also address the evolutionary trends in the healthcare arena and will facilitate the student's transition to professional practice. Open to graduate students only. Graded on a Credit/No Credit basis. Prerequisite: Successful completion of

MDSC 6920 and concurrently enrolled in a professional field experience course or departmental permission. 1 hour

MDSC 7100 Research Project/Professional Experience This course will ensure that students are qualified in applying the lessons learned in MDSC 6800 in a practical clinical manner. This is the culmination course of the master's curriculum, and requires a paper of publishable quality and presentation of the same. Several permutations are possible, including research under faculty supervision, clinical elective field experience focus on a research topic, clinical case investigation, and others. Open to graduate students only. Course is repeatable for credit. Graded on a Credit/No Credit basis. Prerequisite: Completion of the preclinical year and at least one MDSC Field Experience or departmental permission. 2 to 6 hours (8 hours required in program)

Social Work

SWRK 5970 Teaching Apprenticeship in Selected Social Work Curriculum Areas This course focuses on the development of educational skills for social workers through faculty-directed participation in teaching activities in a selected social work course. Specific learning objectives and expectations for apprentices are arranged with participating faculty. This course may be taken a second time (1-4 hours, or a maximum of 8 total toward degree) by a student who wishes to increase teaching skills through applied practice in another social work area. Prerequisite: Consent of instructor. 1 to 4 hours

SWRK 5980 Readings in Social Work This course offers advanced students with good scholastic records an independent program of study, arranged in consultation with the instructor. One to four credit hours per semester. Open to upperclass and graduate students. Prerequisite: Consent of instructor. 1 to 4 hours

SWRK 6100 Foundations of Social Welfare Policy This is the first course in the graduate program social welfare policy sequence. Its purpose is to introduce the subject area of social welfare policy as a central concern of social work. The goals of the course are to help the student identify evolving socio-cultural and economic bases of social welfare in America, to gain understanding of the substance of particular social policy areas, and to learn to approach the study of social welfare policy within the context of analytic frameworks. While SWRK 6100 places primary focus on the content of social welfare policy, other policy courses focus on specific subject areas or on the development of policy practice skills. Open to graduate students only. Prerequisite: Admission to the MSW program or approval of the School of Social Work Director of Admissions. 3 hours

SWRK 6200 Policies and Standards in School Social Work This is the first of three required courses for those who wish to practice social work in a public school setting in the State of Michigan. The role of the social worker in elementary and secondary schools and the necessary adaptations to the changes taking place in the educational scene are examined and evaluated. Problem solving approaches are given special attention within the structure and organization of the schools and their relationships with the surrounding community. The specific contributions of a school social worker as a helping person to the pupils, the school staff, and the homes by various interventive means are explored. Open to graduate students only. Restricted to master's in Social Work. 3 hours

SWRK 6210 Assessment for School Social Workers This is a required course for those who wish to practice social work in a public school setting in the State of Michigan. The role of the school social worker in school based assessments is examined. Assessment for School Social Workers is one of three courses that are required for the educational component of the School Social Work certificate in the State of Michigan. The other two courses you will need to take are SWRK 6200 and SWRK 6220. You may substitute courses or continuing education credit from other universities for these courses. For more information please see the School Social Work Certificate information and application included on the D2L course page. Each state handles School Social Work qualifications differently. If you plan on practicing outside of Michigan please become familiar with requirements of the state you plan to practice in. Open to graduate students only. Prerequisite: SWRK 6200 with a grade of "B" or better. 3 hours

SWRK 6220 Interventions for School Social Workers This is a required course for those who wish to practice social work in a public school setting in the State of Michigan. The role of the social worker in

elementary and secondary schools and the necessary adaptations to the changes taking place in the educational scene are examined and evaluated. Problem solving approaches are given special attention within the structure and organization of the schools and their relationship with the surrounding community. SWRK 6220 is one of three courses that are required for the educational component of the School Social Work certificate in the State of Michigan. The other two courses you will need to take are SWRK 6200 and SWRK 6210. You may substitute courses or continuing education credit from other universities for these courses. For more information please see the School Social Work Certificate information and application included on the D2L course page. Each state handles School Social Work qualifications differently. If you plan on practicing outside of Michigan please become familiar with requirements of the state you plan to practice in. Open to graduate students only. Prerequisite: SWRK 6210 with a grade of "B" or better. 3 hours

SWRK 6300 Social Change and Community Analysis Social workers have a responsibility to promote social justice and to strive to abolish injustice. The course identifies and explores historical, theoretical, and ideological perspectives on social change issues. Social change is studied by analyzing the community at the local, national and international level and by exploring strategies for change at each level. Emphasis is placed on racism, sexism, and classism, and the social movements to alleviate these problems. Open to graduate students only. Prerequisite: Admission to the MSW program or approval of the School of Social Work Director of Admissions. 3 hours

SWRK 6310 Human Behavior and the Social Environment This course provides students with a conceptual and theoretical framework for understanding human development and behavior as they are influenced by the social environment across the life span. Human development and behavior are approached as part of historical and contemporary socio-cultural processes acting interdependently with psychology, biology, economics, geography, and politics. Diversity issues such as race/ethnicity, gender, sexual orientation, and social class are taken into consideration as critical elements in these processes and their relationships. The role of social welfare policy in the context of issues relevant to this course is also explored. Open to graduate students only. Prerequisite: Admission to the MSW program or approval of the School of Social Work Director of Admissions. 3 hours

SWRK 6320 Organizations, Communities, Societies: A Change Perspective This course reviews frameworks for analyzing organizations, communities, and societies as a means of preparing students to engage in planned change. Students learn strategies and tactics to influence change in organizational, community, and societal structures and processes. The course explores historical, theoretical, and ideological perspectives on change. Open to graduate students only. Prerequisite: Admission to the Social Work Advanced Standing Program. 3 hours

SWRK 6330 Advanced Seminar in Culture, Ethnicity, and Institutional Inequality in Social Work Practice This course explores the social, psychological and structural implications of race and culture for social work practice. In order to relate more effectively to individuals and groups of different ethnic, cultural, and philosophical backgrounds, it is essential to: (1) gain knowledge about those differences; (2) understand our individual and collective reactions to those differences; and (3) discover ways in which those differences can be bridged within the context of social work practice. Open to graduate students only. Prerequisite: Admission to the MSW program or approval of the School of Social Work Director of Admissions. 3 hours

SWRK 6350 Special Topics in Social Work This is a variable topics, variable credit graduate level course for consideration of current and special interests in Social Work. Specific topics and number of credits will be announced each time the course is scheduled. May be repeated for credit. Open to graduate students only. 1 to 4 hours

SWRK 6351 Secondary Traumatic Stress and Self-Care in Trauma-Focused Practice This course focuses on assessment, prevention, and intervention strategies for social workers who may experience secondary traumatic stress effects when working with clients who bring histories of experiencing trauma. The course focuses on recognizing personal and organizational effects related to exposure to clients' traumatic experiences, components of trauma-informed organizations, and developing personal, professional, and organizational self-care strategies. Open to graduate students only. Prerequisite: Enrollment in graduate program or instructor approval. 1 hour

SWRK 6352 Trauma and Neurodevelopment This course focuses on the neurobiological/neurodevelopmental consequences of trauma exposure as well as the clinical considerations of assessment and subsequent treatment. Open to graduate students only. Prerequisite: Enrollment in graduate program or instructor approval. 1 hour

SWRK 6353 Integrating Mindfulness with Treatment for Trauma This course explores mindfulness (nonjudgmental awareness) strategies and techniques as intervention options for social work practice with persons who have experienced trauma. Students will acquire an orientation to mindfulness meditation practices as a framework for well-being, health and healing. Students will learn basic skills to integrate mindfulness into their professional and personal lives, and gain understanding of the utility of mindfulness interventions for managing stress and trauma symptoms. Students learn how mindfulness practices moderate emotional and behavioral actions among persons across the life span who are living with trauma. Neuroscience and research findings will be used to explain the underlying mechanisms of mindfulness as it related to beliefs and behaviors common among clients living with trauma symptoms or other stressors. Open to graduate students only. Prerequisite: Enrollment in graduate program or instructor approval. 1 hour

SWRK 6354 Integrating Body-based Interventions with Treatment for Trauma The course explores body-based strategies and techniques (e.g., progressive relaxation, yoga, breathing exercises, and trauma release exercises) as intervention options for social work practice with persons who have experienced trauma. Students will acquire an orientation to body-based approaches as a framework for well-being, health and healing. Students will learn basic skills to integrate body-based techniques into their professional and personal lives, and gain understanding of the utility of body based interventions for managing stress and trauma symptoms. Students will learn how sensory experiences in the physical body moderate emotional and behavioral actions among persons across the life span that are living with trauma. Neuroscience and research findings will be used to explain the underlying mechanisms of body-based approaches as it relates to beliefs and behaviors common among persons living with trauma symptoms or other clinical-level stressors. Open to graduate students only. Prerequisite: Enrollment in graduate program or instructor approval. 1 hour

SWRK 6356 Assessment and Treatment for Adult Survivors of Sexual Trauma This course focuses on assessment and evidence-based treatment for adult survivors of sexual trauma. Multidimensional assessment will include the impact of sexual abuse and sexual assault, culture, and historical trauma, on survivors and their families. Emphasis will be on client strengths and resilience. Assessment measure will be included as a component of a bio-psycho-social assessment. Evidence-based treatment models will be reviewed and applied through in-class exercises and written assignment. This is an approved elective for the School of Social Work's Trauma Specialization. Open to graduate students only. Prerequisite: Enrollment in graduate program or instructor approval. 1 hour

SWRK 6357 Trauma and Military Social Work This 1 credit special topics elective course focuses on the role of social work in military and veteran's settings. Special concerns that military members and veterans bring to social work practice including deployment, separation, LGBT military families, and combat operations will be examined. Emphasis will be placed on the role of social work in intervening in areas of trauma experienced by military and veteran clients and family members including: Traumatic Brain Injury (TBI), Post-Traumatic Stress Disorder, sexual assault, domestic violence, and suicide. This is an approved elective for the School of Social Work's Trauma Specialization. Open to graduate students only. Prerequisite: Enrollment in graduate program or instructor approval. 1 hour

SWRK 6358 Risk Assessment and Treatment Planning for Adolescents with Sexually Abusive Behaviors This 1-credit course focuses on risk assessment and treatment planning with adolescents with sexually abusive behaviors. Students will learn skills for completing a risk assessment, planning treatment, and assessing readiness for family reunification following treatment. Open to graduate students only. Prerequisite: Enrollment in graduate program or instructor approval. 1 hour

SWRK 6359 Strengthening Trauma-Informed Organizations This course focuses on assessment and intervention strategies for social workers in organizations seeking to become trauma-informed. The course focuses on strategies for identifying and strengthening components of trauma-informed organizations, including

assessment, treatment, supporting staff, supervision, and trauma-informed organizational change. Open to graduate students only. Prerequisite: Enrollment in graduate program or instructor approval. 1 hour

SWRK 6378 Integrative Seminar in Trauma-Focused Cognitive-Behavioral Therapy This 1-credit course integrates training in Trauma-Focused Cognitive-Behavioral Therapy (TF-CBT) into the application of advanced interpersonal social work practice for students in the Trauma-Focused Cognitive-Behavioral Therapy (TF-CBT) Training Project. This course provides students with a forum to integrate learning, insight, and social work theory from their training in TF-CBT with experiences encountered in their concentration field practice in TF-CBT. In addition to the two-day required TF-CBT training in TF-CBT, this course includes two additional seminars that are held during the fall semester. Open to graduate students only. Prerequisite: Enrollment in graduate program or instructor approval; and SWRK 6760 which may be taken concurrently. 1 hour

SWRK 6380 Psychopathology for Social Work Practice This course provides students with knowledge of psychopathology across the lifespan as an aspect of human functioning and cultural labeling. Primary focus is on the interaction between physiological, developmental, emotional, and social aspects of adult and child psychopathology from both descriptive and psychodynamic points of view. General implications for social work intervention, ethical and value issues, and relevant research will receive some consideration. Open to graduate students only. Restricted to master's in Social Work. Prerequisite: SWRK 6310 or SWRK 6320 (maybe be taken concurrently), or approval of the School of Social Work Director of Admissions. 3 hours

SWRK 6390 Behavior Disorders of Childhood and Adolescence This course provides students with advanced knowledge of child psychopathology as an aspect of human functioning and cultural labeling. Primary focus is on the interaction between physiological, developmental, emotional, and social aspects of child psychopathology from cognitive behavioral, descriptive and psychodynamic points of view. General implications for social work intervention, ethical and value issues, and relevant research will receive some consideration. Emphasis of this course will be children and adolescents. Open to graduate students only. Prerequisite: SWRK 6380 or instructor approval. 3 hours

SWRK 6400 Social Work Research Methods This is a research methods course that emphasizes the generation and appraisal of knowledge used in social work. The aim is for students to obtain knowledge and skills in research methods and data analysis approaches that are essential to effective and accountable social work practice. This course provides students with a working understanding of theoretical and practical issues inherent in the research process, particularly as it relates to professional practice. The course focuses on giving students a strong foundation of research knowledge and skill necessary for knowledge building in the social sciences arena. This course presents students with ideas, techniques, and procedures basic to evidence-based decision making. It provides students with a balance of lecture material and interactive learning activities, which include discussion, homework assignments, experiential exercises, and computer assignments. Open to graduate students only. Prerequisite: Admission to the MSW program or approval of the School of Social Work Director of Admissions. 3 hours

SWRK 6420 Evaluation of Social Work Practice This course focuses on the knowledge and skill to understand and carry out research on social work practice. The components of the course consist of program evaluation, research designs appropriate for the evaluation of clinical practice, and studies of empirical research that address the features and effectiveness of interventions in relation to the conditions that are targeted for amelioration. The course is designed to help practitioners make informed judgments about the utility of different treatment modalities, and their importance for service delivery design. Open to graduate students only. Restricted to master's in Social Work. Prerequisite: SWRK 6400 or SWRK 6320, or approval of the MSW Coordinator. 3 hours

SWRK 6430 Leadership and Management in Human Services This course addresses knowledge, skills, and attitudes essential in building leadership for developing, supporting, and maintaining effective service delivery in human service agencies. The course focuses on such topics as leadership styles, power, motivation and conflict, task group skills, supervision, women and minorities in management, and ethics and values in leading human service organizations. Open to graduate students only. Restricted to master's in Social Work. 3 hours

SWRK 6450 Administration in Human Service Organizations The course introduces students to elements of administration in human service organizations. It focuses on project management, budgeting, fund development and marketing, and the role of governing boards in nonprofit organizations. The course is required for social work students concentrating in Policy, Planning and Administration. It is also intended to serve human services practitioners who are engaged in policy, planning, and administration. Open to graduate students only. Prerequisite: SWRK 6100 or SWRK 6320 or approval of the School of Social Work Policy, Planning and Administration (PPA) concentration coordinator. 3 hours

SWRK 6500 Core Concepts of Child and Adolescent Trauma This course incorporates the new National Child Traumatic Stress Network core curriculum on child trauma (CCCT). The course conveys the crucial evidence-based concepts, components, and skills designed by the NCTSN to strengthen competency in assessment, referral, and treatment. This course will introduce students to the common concepts (general theory and foundational knowledge), components (intervention and treatment elements) and skills (practitioner skills) underlying evidence-based treatment for traumatized children and adolescents. Trauma is broadly defined, and includes children and adolescents exposed to traumatic events including, but not limited to natural disasters, war, abuse and neglect, medical trauma and witnessing interpersonal crime (e.g. domestic violence) and other traumatic events. The course will highlight the role of development, culture, and empirical evidence in trauma-specific interventions with children, adolescents, and their families. It will address the level of functioning of primary care giving environments and assess the capacity of the community to facilitate restorative processes. The course focuses on assessment and intervention; not treatment. Open to graduate students only. Prerequisites: Enrollment in graduate program. 3 hours

SWRK 6510 Social Work Intervention with Sexual Abuse This course will introduce the student to social work practice with child sexual abuse. The course will present on overall understanding of the issue of child sexual abuse and its treatment within a community-coordinated system. Both the clinical and administrative aspects of child sexual abuse are addressed. Particular attention will be paid to systems advocacy and social workers' issues in intervening with child sexual abuse. Open to graduate students only. Prerequisite: SWRK 6610 or instructor approval. 3 hours

SWRK 6530 Causes of Substance Abuse This course will examine the three major theories that explain the causes of psychoactive substance use: the biological, psychological, and sociological. The historical responses of society to substance use such as strategies including control, prevention, intervention, and treatment will be outlined and the research of various epidemiologic patterns and social correlates of substance use will also be studied. (Cross-listed with ADA 6060 and CECP 6340). Open to graduate students only. 3 hours

SWRK 6550 Recovery Oriented Systems of Care This course will examine the understanding that recovery from substance abuse and dependency is a process of change which occurs within a systemic model of care that includes prevention, intervention, treatment, and management of substance use disorders. Students will have exposure to various substance abuse screening and assessment instruments, counseling strategies, and treatment modalities in order to assess, treat, and refer to the appropriate service providers along the continuum of care. This course will also provide students with an understanding of the ethical codes related to substance abuse counseling. (Cross-listed with ADA 6340 and CECP 6360). Open to graduate students only.
3 hours

SWRK 6600 Seminar on Social Work Practice with Individuals, Families, and Groups This course provides a conceptual framework for understanding, analyzing, and implementing social work practice with individuals, families, and groups congruent with social work values. This course also focuses on concrete relationship-building and maintenance skills necessary for working with diverse populations, e.g., gender, race, religion, sexual orientations, age, physical capabilities, socio-economic status, and political orientations. Open to graduate students only. Prerequisite: Admission to the accelerated M.S.W. program. 3 hours

SWRK 6610 Social Work Practice: Individuals and Families This course focuses on foundation level knowledge and skills necessary to help individuals and families. This includes engagement, assessment, contracting, problem-solving, and evaluation with attention to social work values, theoretical knowledge and practice conditions. Problem-solving in a bio-psycho-social framework and facilitation of client coping, competency

and empowerment undergird this course. Open to graduate students only. Prerequisite: Admission to the MSW program. 3 hours

SWRK 6620 Social Work with Task Groups and Organizations This course focuses on knowledge and skills related to social work practice with task groups and organizations. Attention is paid to interpersonal, intrapersonal, and organizational levels of intervention. Practice skills in working with task groups and organizations are developed. Open to graduate students only. Restricted to master's in Social Work. Prerequisite: SWRK 6610 3 hours

SWRK 6630 Seminar in Substance Abuse I An interdisciplinary seminar designed to reflect broadly conceived intervention strategies ranging from primary prevention to rehabilitation of the addict. The basic training in the principles of intervention and clinical practice will continue to be taught within the student's basic professional discipline. The seminar will be used to elaborate upon the application of these principles to the problems of substance abuse. Open to graduate students only. 3 hours

SWRK 6640 Social Work Practice in Special Areas This course focuses on the study of problem-solving in specialized areas of social work practice. Focus upon the role of the social work practitioner in assessment, goal establishment, and intervention in the use of various social work methods in different areas of practice. A specific topic will be announced each semester. 3 hours

SWRK 6660 Social Work Practice with Individuals This course will increase the students' practice skills with individuals. Social, psychological, economic, political, cultural, and biological factors are considered as they impact on the individual's efforts to grow and thrive. Theoretical frameworks and related intervention models will be presented such as Humanistic, Existential, Solution-Focused, Crisis-Intervention, Psychodynamic, and/or Cognitive Behavioral. Particular attention will be paid to clients' strengths. Open to graduate students only. Restricted to master's in Social Work. Prerequisite: SWRK 6600 or SWRK 6610. 3 hours

SWRK 6670 Program Planning This course addresses the models, stages, and tasks of program planning in the human services. Students will learn how to work with a team in planning a service program. The course focuses on the tasks that are essential in carrying out a problem analysis and needs assessment, formulating program goals and objectives, designing service programs, and writing program proposals. Open to graduate students only. Restricted to master's in Social Work. Corequisite: SWRK 6770 or approval of the PP&A concentration coordinator. 3 hours

SWRK 6680 Social Work Practice with Families This course focuses on practice skills with families. Within a person-in-environment perspective, social, psychological, economic, political, cultural and biological factors are considered as they impact on the families. Theoretical frameworks (e.g., structural, strategic, and Bowenian) will be explored. Particular attention will be paid to families' strengths. Open to graduate students only. Restricted to master's in Social Work. Prerequisite: SWRK 6610 or SWRK 6600. 3 hours

SWRK 6685 Theory and Practice of Group Treatment This course will increase students' skills in providing social work practice with treatment groups. Students will engage in experiential learning about group dynamics, therapeutic factors, leadership and co-leadership roles and dynamics, group member composition and diversity, assessment and intervention planning. Particular attention will be paid to clients' strengths. Open to graduate students only. Restricted to master's in Social Work. Prerequisite: SWRK 6600 or SWRK 6620. 3 hours

SWRK 6690 Advanced Seminar in Planning and Administration This course addresses the recruitment, selection, development, supervision, and evaluation of program staff. Selected aspects of personnel law, affirmative action, and sexual harassment are examined. Students have opportunities to develop skill in the analysis and management of critical incidents in staff relationships. SWRK 6690 is an advanced survey class that explores the often complex structure and functioning of non-profit organizations, and builds on previous learning in other Policy, Planning, and Administration courses and the practicum. Open to graduate students only. Prerequisite: SWRK 6670 or approval of the PP&A concentration coordinator. 3 hours

SWRK 6700 Seminar in Social Policy Practice This course is an integrative seminar in the Policy, Planning, and Administrative concentration that focuses on the skills needed for participation in the development and implementation of social policy in program planning and executive positions in the human services environment. The course focuses on technical and interactive aspects of practice, theoretical and ethical frameworks, and skills in the application of selected techniques of social policy practice. Open to graduate students only. Prerequisite: SWRK 6100 or SWRK 6320 or approval of the School of Social Work Director of Admissions. 3 hours

SWRK 6710 Foundation Field Education I This course is designed to integrate classroom learning into the application of foundational social work practice in field placements or internships. The MSW Foundation field experience emphasizes generalist social work practice as the micro, mezzo, and macro levels. Placements are in organizations offering direct social work practice experiences with some combination of individuals, families, groups, organizations, and communities. Learning experiences are consistent with the foundation curriculum objectives, and learning contract. Field education is the signature pedagogy of social work education, and demonstrates the integration of social work knowledge, values, and skills into social work practice. SWRK 6710 course is the first in a two-course sequence taken as part of foundation field coursework; the second course is SWRK 6720. Open to graduate students only. Restricted to master's in Social Work. Prerequisite: SWRK 6610 (may be taken concurrently) 3 hours

SWRK 6720 Foundation Field Education II This course is designed to integrate classroom learning into the application of foundational social work practice in field placements or internships. The MSW Foundation field experience emphasizes generalist social work practice at the micro, mezzo, and macro levels. Placements are in organizations offering direct social work practice experiences with some combination of individuals, families, groups, organizations, and communities. Learning experiences are consistent with the foundation curriculum objectives, and learning contract. Field education is the signature pedagogy of social work education, and demonstrates the integration of social work knowledge, values, and skills into social work practice. SWRK 6720 course is the second in a two-course sequence taken as part of foundation field coursework. Open to graduate students only. Restricted to master's in Social Work. Prerequisite: SWRK 6610 and SWRK 6710. 3 hours

SWRK 6750 Field Education in Advanced Standing Program Social Work Practice
Interpersonal Practice Students: This course provides the opportunity to integrate classroom learning into the application of clinical practice in face-to-face client situations. Placements are in agency units offering direct service experience with some combination of individuals, families, and groups for ninety-six (96) hours. Eight hours of field labs/seminar are also required. Students will practice skills related to assessment, intervention, termination, and evaluation of practice with client systems. Additional experiences are provided consistent with the student's learning needs, social treatment objectives, and agency service plans. The placement will continue during fall and spring semesters in the same agency.
Policy, Planning and Administration Students: Field education in the social policy, planning, and administration concentration (PP&A) is intended to provide students with opportunities to develop and exercise practice skills for designing, maintaining, and changing social systems. Field placements in social welfare organizations and special programs are arranged in accordance with student interests and abilities for ninety-six (86) hours. Eight hours of field labs/seminars are also required. Students are introduced to the theories and techniques of leadership and management in the planning seminar and in other courses. It is the student's responsibility to integrate and apply the knowledge given in the classroom to his/her field placement setting with the guidance of the field instructor and faculty liaison. The placement will continue during fall and spring semesters in the same agency. Open to graduate students only. Prerequisite: Admission to the Social Work Advanced Standing Program. Graded on a Credit/No Credit basis. 3 hours

SWRK 6760 Interpersonal Practice Concentration Field Education I This course is designed to integrate classroom learning into the application of advanced interpersonal social work practice in field placements or internships. Placements are in organizations offering advanced direct social work practice experiences with some combination of individuals, families, and groups. Students will practice skills related to assessment, intervention, termination, and evaluation of practice with client systems. Learning experiences are consistent with the interpersonal practice concentration objectives, and learning contract. Field education is the signature pedagogy of social work education, and demonstrates the integration of social work knowledge, values, and skills into social

work practice. SWRK 6760 course is the first in a two-course sequence; the second course is SWRK 6780. Graded on a Credit/No Credit basis. Open to graduate students only. Restricted to master's in Social Work. Prerequisites: SWRK 6720 and SWRK 6660 (SWRK 6660 may be taken concurrently). 3 hours

SWRK 6770 Policy, Planning, and Administration Concentration Field Education I This course is designed to integrate classroom learning into the application of advanced macro social work practice in field placements or internships. Placements are in organizations offering advanced direct social work practice experiences with some combination of groups, organizations, and communities. Students will practice skills related to assessment, intervention, termination, and evaluation of practice with macro systems. Learning experiences are consistent with the policy, planning, and administration practice concentration objectives, and learning contract. Field education is the signature pedagogy of social work education, and demonstrates the integration of social work knowledge, values, and skills into social work practice. SWRK 6770 course is the first in a two-course sequence; the second course is SWRK 6790. Graded on a Credit/No Credit basis. Open to graduate students only. Restricted to master's in Social Work. Prerequisite: SWRK 6720 or SWRK 6320. 3 hours

SWRK 6780 Interpersonal Practice Concentration Field Education II This course is designed to integrate classroom learning into the application of advanced interpersonal social work practice in field placements or internships. Placements are in organizations offering advanced direct social work practice experiences with some combination of individuals, families, and groups. Students will practice skills related to assessment, intervention, termination, and evaluation of practice with client systems. Learning experiences are consistent with the interpersonal practice concentration objectives, and learning contract. Field education is the signature pedagogy of social work education, and demonstrates the integration of social work knowledge, values, and skills into social work practice. SWRK 6780 course is the second in a two-course sequence. Graded on a Credit/No Credit basis. Open to graduate students only. Restricted to master's in Social Work. Prerequisite: SWRK 6760 3 hours

SWRK 6790 Policy, Planning, and Administration Concentration Field Education II This course is designed to integrate classroom learning into the application of advanced macro social work practice in field placements or internships. Placements are in organizations offering advanced direct social work practice experiences with some combination of groups, organizations, and communities. Students will practice skills related to assessment, intervention, termination, and evaluation of practice with macro systems. Learning experiences are consistent with the policy, planning, and administration practice concentration objectives, and learning contract. Field education is the signature pedagogy of social work education, and demonstrates the integration of social work knowledge, values, and skills into social work practice. SWRK 6790 course is the second in a two-course sequence. Graded on a Credit/No Credit basis. Open to graduate students only. Restricted to master's in Social Work. Prerequisite: SWRK 6770 3 hours

SWRK 6800 Community Social Work The aim of this course is to introduce students to the field of community social work, to present a range of community organizing philosophies and strategies and to assist students in developing the skills necessary for effective community organizing. Social workers have a rich history of involvement in community social work, organizing and advocacy. This course will be taught in social work’s long tradition of healing for the suffering and oppressed and to challenge unjust structures which cause oppression. Students will learn how to empower people to have control over the forces that affect their lives and to advocate for social justice. Open to graduate students only. 3 hours

SWRK 6910 Advanced Social Work Practice with Individuals This course focuses on advanced individual practice skills with populations at-risk. Social, psychological, economic, political, cultural, and biological factors are considered as they impact on the individual's efforts to grow and thrive. Theoretical frameworks and related evidence-based treatment models will be examined. Particular attention will be paid to clients' strengths, collaborative approaches, and empowerment practices. Restricted to master's in Social Work. Open to graduate students only. Prerequisites: SWRK 6660 or approval from the MSW Coordinator. 3 hours

SWRK 6920 Advanced Social Work Practice with Children This course focuses on advanced individual practice skills with child populations at-risk. Social, psychological, economic, political, cultural, and biological factors are considered as they impact on the child's efforts to grow and thrive. Theoretical frameworks and related evidence-based treatment models will be examined. Particular attention will be paid to children's

strengths, collaborative approaches, and empowerment practices. Open to graduate students only. Restricted to master's in Social Work. Prerequisites: SWRK 6660 or approval from the MSW Coordinator. 3 hours

SWRK 6960 Advanced Social Work Practice with Families This course focuses on advanced practice skills with families at-risk. Social, psychological, economic, political, cultural, and biological factors are considered as they impact on the families' efforts to grow and thrive. Theoretical frameworks (e.g., structural, strategic, multi systemic, functional family therapy, and family preservation models) and related evidence-based treatment models will be examined. Particular attention will be paid to families' strengths, collaborative approaches, and empowerment practices. Open to graduate students only. Restricted to master's in Social Work. Prerequisites: SWRK 6680 3 hours

SWRK 6970 Advanced Social Work Practice in Selected Areas This course provides students an in-depth study of advanced interpersonal practice methods, models, and skills outside the scope of present course offerings. The topics vary from year to year, depending upon student interest and timeliness of topic. Open to graduate students only. Restricted to master's in Social Work. Prerequisites: SWRK 6360 (may be taken concurrently), and either (SWRK 6660 or SWRK 6680). 3 hours

SWRK 7100 Independent Research Please refer to The Graduate College section for course descriptions. Graded on a Credit/No Credit basis. May be repeated for credit. Open to graduate students only. Prerequisite: Approved application and department approval. 2 to 6 hours

Speech Pathology and Audiology

SPPA 5010 Principles of Speech Science Overview of the anatomy, physics, biology, physiology, and psychology of human speech production and speech perception. This course is intended to focus not only on well-established concepts in speech science, but also on the many research areas in which our understanding is incomplete. Open to upper class or graduate students. Restricted to majors or masters in Speech Pathology and Audiology. Prerequisite: Department approval. 3 hours

SPPA 5530 Stuttering and Other Fluency Disorders Theories and therapies applicable to the understanding and clinical management of stuttering are studied in depth. Open to upperclass and graduate students. Restricted to masters and majors in speech pathology and audiology. 2 hours

SPPA 5800 Psychoacoustics A study of the principles, theories, and methods which provide the bases for hearing measurement in clinical and experimental settings. Topics include quantification, measurement and analysis of acoustic signals and subjective responses to those signals. Open to upperclass and graduate students. Prerequisite: Departmental approval. 3 hours

SPPA 5801 Pediatric Audiology This course deals with the identification, measurement, and management of hearing impairment in infants and young children. Open to upperclass and graduate students. Prerequisite: SPPA 2060 and SPPA 3580, or department approval. 3 hours

SPPA 5950 Language Development and Disorders for Educators This course provides the student preparing to be a classroom or special education teacher with information about the nature of spoken and written language, its development, conditions associated with language disorders, and the principles and methods of assessment and treatment for children, from infancy through adolescence, with specific language needs. Not applicable toward the master's degree in Speech-Language Pathology. Open to upperclass and graduate students. 2 hours

SPPA 5970 Topics in Speech Pathology and Audiology Selected topics in speech pathology and audiology are systematically explored through lectures, laboratory experiences, and student projects. Possible areas of study are instrumentation in audiology, manual communication, electrophysiologic audiometry, computer applications to speech communication, and contemporary professional issues. a. Autism 3 hours b. American Sign Language I 3 hours c. American Sign Language II 3 hours. Open to upperclass and graduate students. 1 to 4 hours

SPPA 5980 Readings in Speech Pathology and Audiology Arranged on an individual basis to provide students the opportunity to pursue independent study of special areas of interest in depth. Open to upperclass and graduate students. 1 to 4 hours

SPPA 6030 Anatomy and Physiology of Audition and Balance A study of the anatomy and function of structures important to audition and balance. Prerequisite: Department approval. 2 hours

SPPA 6140 Linguistic Analysis and Technology in Communication Disorders This course is designed to supplement, reinforce, and provide practical application of information related to language acquisition, phonology, and diagnosis and appraisal. Students will have the opportunity to gain knowledge and skills through the infusion of technology for analyzing grammatical, semantic, phonological, and pragmatic features of language, techniques and strategies for speech-language assessment/evaluation, tools for literature searches, and information related to assistive technology (including Alternative & Augmentative Communication - AAC). The student is expected to gain both theoretical knowledge of linguistic features and practical skills in computer-aided analysis.
1 hour

SPPA 6150 Research Methods in Speech-Language Pathology and Audiology This course deals with methods and procedures for gathering, reducing and analyzing data to reach conclusions concerning hypotheses regarding communication disorders and processes. Prerequisite: Department approval. 3 hours

SPPA 6160 Instrumentation in Audiology This course introduces the basic principles and applications of electronics and electronic instruments as they pertain to audiology. The first section of the course introduces the basic principles of DC and AC electronics, with a particular focus on the concept of electrical impedance. The second section of the course consists of a survey of the principles of operation and use of a variety of instruments that are used to generate, record, reproduce, control, calibrate, and measure electrical signals. Prerequisite: Department approval. 3 hours

SPPA 6190 Seminar in Speech and Hearing Science Selected topics in speech and hearing science are systematically explored through individual study projects. Instrumentation, procedures, and techniques employed in perceptual, physical and physiological analyses of normal speech and hearing are among the areas considered. Topics vary from semester to semester and are announced in advance. Prerequisite: Department approval. 1-4 hours

SPPA 6200 Auditory Disorders This course deals with pathologies and disorders of the outer ear, middle ear, inner ear, the auditory nerve, and the central auditory pathways, including causes, treatments, and impact on hearing. Coverage of tinnitus and hyperacusis is also included. Prerequisite: Department approval. 2 hours

SPPA 6210 Diagnostic Audiology I This course, which is one of two courses devoted to diagnostic audiology, deals with routine and special audiometric techniques for assessing hearing disorders to determine the need for medical or rehabilitative intervention. Prerequisite: Department approval. 4 hours

SPPA 6220 Hearing Aids Components, characteristics, evaluation, selection, use and maintenance of hearing aids are studied in detail. Prerequisite: Department approval. 3 hours

SPPA 6250 Industrial and Public Health Audiology A study of hearing conservation programs in industry, including noise measurement, damage-risk criteria, hearing measurement, and medico-legal problems; noise as a public health hazard; and hearing screening and deafness prevention programs. Prerequisite: Department approval. 2 hours

SPPA 6310 Diagnostic Audiology II A course dealing with electrophysiological and other advanced audiological techniques for assessing peripheral and central auditory disorders to determine the need for medical or rehabilitative intervention. Prerequisite: SPPA 6210 Diagnostic Audiology I or equivalent. 4 hours

SPPA 6320 Vestibular Assessment This course focuses on electro/videonystagmography and other contemporary diagnostic techniques used for the assessment of vestibular disorders.

Prerequisite: SPPA 6210 3 hours

SPPA 6340 Management of Audiologic Practice A study of principles important to establishing and managing an audiologic practice. Topics include professional credentials, ethics, quality of service, legal issues, and business management. Prerequisite: Department approval. 2 hours

SPPA 6350 Otoacoustic Emissions This course focuses on otoacoustic emissions, their measurement, interpretation, and integration in neurodiagnostic assessment. Prerequisite: Departmental approval. 1 hour

SPPA 6360 Geriatric and Rehabilitative Audiology This seminar builds on knowledge already gained by the students through prior academic preparation as well as through clinical experience. Topics covered include general aspects (biological, sociological, and psychological) of aging, myths and attitudes regarding aging, the aging auditory system, and contemporary rehabilitative and counseling considerations unique to older persons who are hearing impaired. Prerequisite: Departmental approval. 2 hours

SPPA 6361 Cochlear Implants This seminar builds on knowledge already gained by the students through prior academic preparation as well as through clinical experience. The overall focus is on pre- and post operative evaluation, treatment, and management of those considering and receiving cochlear implants. Prerequisite: Departmental approval. 2 hours

SPPA 6362 Habilitative and Educational Audiology This course deals with issues related to early intervention services and educational management of infants and children with hearing loss. The overall focus is on counseling children with hearing loss and their families, exploring communication options and special education laws, and investigating methods of fitting and verifying hearing assistive technology for infants and children with hearing loss. Open to graduate students only. 4 hours

SPPA 6363 Hearing Aids II This course focuses on outcome measures, the selection of advanced hearing aid options, and the application of evidence-based practice (EBP) techniques to hearing aid fittings. Open to graduate students only. 3 hours

SPPA 6370 Speech Sound Disorders This course provides comprehensive coverage of the area of speech sound disorders, including theoretical background, etiologies and characteristics, clinical assessment, and intervention. Issues such as differential diagnosis and evaluation of evidence-driven interventions will be explored. 2 hours

SPPA 6390 Seminar in Audiology Selected topics in audiology are systematically explored through critical analyses of literature and through individual study projects. Pediatric audiology, geriatric audiology, hearing aids, residual hearing, and aural rehabilitation are among the possible areas of study. Topics vary from semester to semester and are announced in advance. a. Rehabilitative Audiology b. Geriatric Audiology c. Hearing Aids d. Cochlear Implants Prerequisite: Department approval. 1-4 hours

SPPA 6392 Data Analysis and Interpretation This course provides a basic introduction to computational data analysis followed by use of selected statistical packages to analyze and interpret data. Prerequisite: Departmental approval. 2 hours

SPPA 6400 Voice Disorders Organic, neurologic, and functional disorders of the larynx are studied in depth. Prerequisite: Departmental approval. 2 hours

SPPA 6405 Cleft Palate and Craniofacial Disorders This course provides a broad examination of the speech, language, voice and resonance disorders that may co-occur with cleft palate and several common craniofacial conditions. The oral-facial structures are examined with particular attention given to the role of the velopharynx in speech production. Congenital and acquired structural disorders are discussed, including those associated with treatment for cancer of the head and neck. 2 hours

SPPA 6430 Aphasia in Adults This course deals comprehensively with the identification and treatment of communication problems in the adult aphasic individual. Prerequisite: Department approval. 3 hours

SPPA 6440 Motor Speech Disorders This course examines dysarthrias and verbal apraxis as manifested in children and adults. Prerequisite: Department approval. 3 hours

SPPA 6450 Augmentative and Alternative Communication This course deals with alternative and augmentative communication (AAC) for individuals with severe communicative disorders. Strategies and technologies for establishing or restoring functional communication are investigated. Communication disorders of various etiologies are surveyed in relation to intervention needs. Assessment, intervention, and advocacy are discussed in detail. Practical and simulated experiences with low- and high-technological AAC are included. Overall communication needs are highlighted in reference to educational, vocational, and social interaction purposes. Prerequisite: Department approval. 3 hours

SPPA 6460 Language Acquisition and Communication Across the Lifespan This course addresses human spoken and written language and communication processes at the discourse, sentence and sound/word levels. Issues related to cultural-linguistic variation, including English Language Learning are infused throughout the course. Students learn about typical development of communication, language, and literacy from infancy through adolescence, along with adult discourse, reading and writing, communicative processes, and changes with healthy aging. Neurological, psychological, developmental, and linguistic and cultural bases are addressed with relevance to clinical application. 3 hours

SPPA 6470 Cognitive Communication Disorders This course studies neurogenic-based disorders of cognition and communication in persons of all ages. Emphasis is upon children and adults surviving traumatic brain injury and living with dementia. The course presents content relevant to etiology, assessment, diagnosis, and treatment of children and adults with cognitive-communication disorders. Special attention will be placed upon community-based and contextually-relevant treatment practices and community integration principles. Theories of and methods for measuring quality of life will be discussed. Client-centered, WHO-ICF, interdisciplinary health care team practice will be used as the model for intervention. Roles for clinicians to influence health and social policy will be considered. Open to graduate students only. Prerequisites: SPPA 6430 and SPPA 6460. 2 hours

SPPA 6480 Cultural Competency for Communication Scientists: Bridging Theory and Practice. This graduate seminar is designed to support and present the most current research literature on the development of cultural competency for speech-language pathologists and audiologists, facilitating the ability to provide effective services in an increasingly globalized world. Seminar participants will apply critical analysis to theoretical foundations and established practices in the field, explain the implications of macro-level contexts (history, economics, politics, and culture) for reciprocal and collaborative family/patient centered services, and redesign current “best practices” to be more culturally competent and globally responsible. 2 hours

SPPA 6490 Seminar in Speech-Language Pathology Selected topics in speech pathology are systematically explored through critical analysis of literature and through individual study projects. Voice disorders, articulation disorders, language disorders, cleft palate, and stuttering are among the possible areas of study. Topics vary from semester to semester and are announced in advance. Prerequisite: Department approval. 1-4 hours

SPPA 6530 Diagnosis and Appraisal The student is instructed in methods and procedures for evaluation of speech and language disorders. Prerequisite: Department approval. 3 hours

SPPA 6560 Dysphagia This course concerns swallowing disorders in infants, young children, and adults. It aims to establish a solid academic knowledge base in dysphagia, following the guidelines published by the American Speech-Language-Hearing Association. The course emphasizes understanding of the processes involved in swallowing in the normal population, the etiologies/symptomatology of swallowing disorders, evaluation and differential diagnosis of dysphagia, and management of dysphagia. Issues related to risk management, interdisciplinary team intervention, and family/caregiver education are also discussed. 3 hours

SPPA 6570 Disordered Language Development Procedures and techniques for the identification, diagnosis, and clinical management of developmental disorders of language are explored intensively in this course. Prerequisite: Department approval. 3 hours

SPPA 6580 Theoretical Bases for Therapy In this course disorders of communication are examined in terms of servo-system, learning theory, and personality theory. 3 hours

SPPA 6690 Ethics, Counseling and Professionalism Professional and philosophical questions are analyzed as they apply to the contemporary practice of speech-language pathology and audiology. Approaches to counseling clients and their families are addressed. Prerequisite: Departmental approval. 3 hours

SPPA 6700 Clinical Practicum Supervised clinical experience in the evaluation and/or management of speech, language and/or hearing disorders. Credit/No Credit only. Prerequisite: Department approval. 1 – 4 hours.

SPPA 6710 School Internship in Speech-Language Pathology This is a 10 week intensive speech-language pathology practicum in the school setting for students seeking endorsement as Teachers of Speech-Language Impaired in the state of Michigan or teacher certification in other states requiring school speech-language therapy internships. Prerequisite: Department approval. 6 hours

SPPA 7000 Master's Thesis Please refer to The Graduate College section for course descriptions. Graded on a Credit/No Credit basis. May be repeated for credit. Open to graduate students only. Prerequisite: Approved application, approval from department and Graduate College. 1 to 6 hours

SPPA 7100 Independent Research Please refer to The Graduate College section for course descriptions. Graded on a Credit/No Credit basis. May be repeated for credit. Open to graduate students only. Prerequisite: Approved application and department approval. 2 to 6 hours

SPPA 7120 Professional Field Experience Please refer to The Graduate College section for course descriptions. Graded on a Credit/No Credit basis. May be repeated for credit. Open to graduate students only. Prerequisite: Approved application and department approval. 2 to 12 hours

Graduate College

GRAD 5010 Special Topics This is a variable topics, variable credit graduate level course for consideration of current and special interest to graduate students. Specific topics and number of credit hours will be announced each time the course is scheduled. May be repeated for credit. Open to upperclass and graduate students. Prerequisite: Instructor approval. 1 to 4 hours

GRAD 6010 Special Topics This is a variable topics, variable credit graduate level course for consideration of current and special interest to graduate students. Specific topics and number of credit hours will be announced each time the course is scheduled. May be repeated for credit. Open to graduate students only. 1 to 4 hours

GRAD 6500 The State of the Planet: Cares and Flourishing in Context This course explores the ecocultural wake of contemporary (and historical) patterns of production and consumption and their impacts on biogeophysical systems and well-being. A central purpose is to highlight tensions, trade-offs, and conflicts between diverse objects of care (equity, economic growth, technological progress, happiness, cultural diversity, restoring ecosystems services, biological diversity, meeting basic needs, life expectancy, health, well-being, etc.) in an attempt to better understand the nested contexts and conditions that impact what individuals and groups most care about and strive to sustain. Open to graduate students only. Prerequisite: ES 6330 with a grade of "B" or better (may be taken concurrently). 3 hours

GRAD 6550 Wise Decision-making: Problem Posing, Problem Solving, and Systems Learning This course explores emerging understandings of how we think when we think about cares in relation to human decision-

making and action. It examines how we can use emerging insights to better align a deep understanding of our cares in context with our daily decisions, policies, and practices. This course will provide students with a tool bag of practical approaches and techniques for problem posing and problem solving that are relevant for any discipline, along with plenty of practice using them to address real-world problems. Open to graduate students only. Prerequisites: ES 6330 and GRAD 6500, with a grade of "B" or better. 3 hours

GRAD 6600 Interdisciplinary Seminar in Learning for Sustainability This course is designed to serve students with very diverse areas of academic and professional interest across the university. It highlights the importance of bringing diverse perspectives to bear on difficult and complex real-world problems. The focus is on generating, posing, and cultivating problems of the kind that their culminating practicum might address, and to discuss them in the context of diverse disciplinary perspectives and concerns. Open to graduate students only. Prerequisites: ES 6330, GRAD 6500, and GRAD 6550; with a grade of "B" or better. 3 hours

GRAD 6650 Practicum in Learning for Sustainability Students will leverage both their disciplinary expertise and the interdisciplinary knowledge and skills gleaned through the Certificate Program to frame, pursue, and report upon a project that embodies the elements of learning for sustainability as indicated in the Graduate Certificate Program description. Practicum projects, under the supervision of a faculty advisor, may be pursued either individually or as members of a team of Practicum students constituted for this purpose. Students will pose, explore, and address a real-world problem with significant implications for improving quality of life. Open to graduate students only. Prerequisites: ES 6330, GRAD 6500, GRAD 6550, and GRAD 6600; with a grade of "B" or better. 3 hours

GRAD 7000 Master's Thesis Candidates for the master's degree may elect to write a thesis in their field of specialization under the supervision of a thesis committee. Prior to the first registration in 7000, Master's Thesis, a Permission to Elect form (available at wmich.edu/grad/forms) must be completed and approved by the Dissertation Specialist in the Graduate College so that the student is informed about the regulations pertaining to the preparation and publication of the manuscript and to the requirements for research involving regulated subjects and hazardous materials, and to ensure the student is in good standing. Master's theses involving research with protected or regulated subjects must include documentation indicating compliance with federal, state, and University requirements for the protection of human/animal subjects or appropriate use of genetic or radioactive materials and chemical hazards. Written approval from the board/committee/official must be included as an appendix to the thesis. The use of *Guidelines for the Preparation of Theses, Projects, and Dissertations* is required. This publication is available for downloading at wmich.edu/grad/current-students/. The course 7000, Master's Thesis, is six credit hours and may be registered for in increments of one to six hours. Following a student's first enrollment in 7000, the student must have continuous enrollment in 7000 until all thesis requirements are completed satisfactorily and approved by the appropriate bodies. A student unable to complete the thesis within the first six hours of registration will be required to continue to enroll in 7000; however, only six hours of 7000 will count toward meeting the program requirements for the master's degree. For students not enrolled in Summer I and Summer II sessions, pre-enrollment in the subsequent Fall semester is necessary for access to library resources during Summer I and Summer II. Continuous enrollment is defined as enrollment in all Fall and Spring semesters from the initial enrollment to the semester in which the student graduates. If the student will graduate in Summer I or Summer II, the student must be enrolled in that session. The thesis is graded on a Credit/No Credit basis. In case a student wishes to appeal a negative decision by the student's master's thesis committee, the student shall first take the appeal to this same committee, which shall hear the appeal and render a decision. In case a master's thesis committee cannot reach unanimous agreement and the student wishes to appeal further a negative decision, a Review Committee shall be established consisting of the Dean of the Graduate College, the appropriate academic dean, and the chairperson or director of the unit. The Review Committee shall seek to resolve the controversy without passing on the thesis. The Review Committee handling such a case is limited to procedural actions, such as reconstituting the thesis committee if the case merits it. Open to graduate students only. Graded on a Credit/No Credit basis. 6 hours

GRAD 7100 Independent Research Designed for highly qualified advanced graduate students, or small groups, who wish to pursue individual studies or projects under the direction of a member of the Graduate Faculty. The faculty member shall be the instructor of record who is responsible for turning in a grade to the Registrar’s Office. A Permission to Elect form, signed by the student’s graduate advisor and the faculty supervisor, must be submitted to the Records Office prior to registration. Open to graduate students only. 2-6 hours

GRAD 7110 Readings in Doctoral Specialization In consultation with a faculty member, the doctoral student will design a reading list of 20 to 30 books in a specialized area; students wishing additional guided reading may register a second time. The student will master these works independently and, in consultation with faculty members, select a representative list of approximately 20 works on which to be evaluated in a two-hour oral examination, conducted by a committee of at least two faculty members. Open to graduate students only. Prerequisite: Doctoral Candidacy. 3 hours

GRAD 7120 Professional Field Experience Designed for graduate students nearing completion of their degree who wish to pursue internships or apprenticeships. Effective internships relate to the student's professional goals, require the student to function within the standard procedures of the setting, and require the student to assume increased specified professional activities. Because the work for a 7120 is ordinarily a culminating experience, students may enroll for 7120 only when the departmental graduate advisor or director deems that they have completed all appropriate course work and any other requirements that should precede the field experience. Permission to elect 7120 can be granted only when the student's graduate advisor or committee deems that the project is integral to the student's program of study and approves a prospectus outlining goals, rationale, activities, and methods of evaluation of the proposed field experience. 7120 should not supplant required or expected courses in the graduate program. If a graduate program has a required internship or field experience, approved by the university curricular review process, a maximum of 12 hours of 7120 may be applied to the graduate degree. Open to graduate students only. 2 to 12 hours

GRAD 7130 Practicum in Teaching in the Discipline A practicum in teaching in the discipline will be done as collaborative teaching with an experienced faculty member in a broad-based undergraduate course. There will be opportunity for both guided praxis and reflection on praxis. Open to graduate students only. 3 hours

GRAD 7150 Professional Project Candidates for some non-degree credentials, certificate programs, or graduate degrees may elect to write a project in their field of specialization under the supervision of a faculty advisor or project committee in partial fulfillment of the requirements for graduation in their program. The professional project is a capstone experience intended to broaden academic skills by encouraging development, evaluation, and application of learning and may involve workshops, case studies, written papers, oral presentations, or other experiences, as approved by the student's graduate program or the Graduate College dean. Approval of instructor is required. Open to graduate students only. Graded on a Credit/no Credit basis. May be repeated for credit. 1 to 6 hours

GRAD 7200 Specialist Project The Specialist Project is designed for the units offering the specialist degree. Candidates for the specialist degree may elect to write a project in their field of specialization under the supervision of a project committee. Prior to the first registration in 7200, Specialist Project, a Permission to Elect form (available at wmich.edu/grad/forms) must be completed and approved by the Dissertation Specialist in the Graduate College so that the student is informed about the regulations pertaining to the preparation of the manuscript and to the requirements for research involving regulated subjects and hazardous materials, and to ensure the subject is in good standing. Specialist projects involving research with protected or regulated subjects must include documentation indicating compliance with federal, state, and University requirements for the protection of human/animal subjects or appropriate use of genetic or radioactive materials and chemical hazards. Written approval from the board/committee/official must be included as an appendix to the project. The use of *Guidelines for the Preparation of Theses, Projects, and Dissertations* is required. This publication is available for downloading at wmich.edu/grad/current-students/. A specialist project is six credit hours. It may be registered for in increments of one to six hours. Following a student's first enrollment in 7200, the student must have continuous enrollment in 7200 until all project requirements are completed satisfactorily and approved by the appropriate bodies. A student unable to complete the project within the first six hours of registration will be required to continue to enroll in 7200; however, only six hours of 7200 will count toward meeting the program requirements for the specialist degree. For students not enrolled in Summer I and Summer II sessions, pre-enrollment in the subsequent Fall semester is necessary for access to library resources during Summer I and Summer II. Continuous enrollment is defined as enrollment in all Fall and Spring semesters from the initial enrollment to the semester in which the student graduates. If the student will graduate in Summer I or Summer II, the student must be enrolled in that session. The project is graded on a Credit/No Credit basis. In case a student wishes to appeal a negative decision by the student's project committee, the student shall first take the appeal to this same committee, which shall hear the appeal and render a decision. In case a project committee cannot reach unanimous agreement and the student wishes to appeal

further a negative decision, a Review Committee shall be established consisting of the Dean of the Graduate College, the appropriate academic dean, and the chairperson or director of the unit. The Review Committee shall seek to resolve the controversy without passing on the project. The Review Committee handling such a case is limited to procedural actions, such as reconstituting the project committee if the case merits it. Open to graduate students only. 6 hours

GRAD 7250 Doctoral Research Seminar Units offering doctoral programs may use this number to designate their research seminars. Such seminars may be taken more than once by the student. Permission of instructor is required. Open to graduate students only. 2-6 hours

GRAD 7300 Doctoral Dissertation The Doctoral Dissertation is required in all doctoral programs and is completed under the supervision of a dissertation committee. Prior to the first registration in 7300, Doctoral Dissertation, a Permission to Elect form (available at http://wmich.edu/grad/forms) must be completed and approved by the Dissertation Specialist in the Graduate College so that the student is informed about the regulations pertaining to the preparation and publication of the manuscript and to the requirements for research involving regulated subjects and hazardous materials, and to ensure the student is in good standing. Doctoral dissertations involving research with protected or regulated subjects must include documentation indicating compliance with federal, state, and University requirements for the protection of human/animal subjects or appropriate use of genetic or radioactive materials and chemical hazards. Written approval from the board/committee/official must be included as an appendix to the dissertation. The use of *Guidelines for the Preparation of Theses, Projects, and Dissertations* is required. This publication is available for downloading at wmich.edu/grad/current-students/. A doctoral dissertation varies in credit from a minimum of 12 credit hours to a maximum of 24 credit hours. The hours required in a program of study are determined by the student's department; a department may require all students within the program to register for a specific, common total of hours between 12 and 24, or a program may require different students within the program to register for a variety of total hours between 12 and 24. The course 7300, Doctoral Dissertation, may be registered for in increments of one or more hours. Following a student's first enrollment in 7300, the student must have continuous enrollment in 7300 until all dissertation requirements are completed satisfactorily and approved by the appropriate bodies. A student unable to complete the dissertation within the program-stipulated hours will be required to continue to enroll in 7300; however, only the program-stipulated hours for 7300 will count toward meeting the program requirements for the doctoral degree. For students not enrolled in Summer I and Summer II sessions, pre-enrollment in the subsequent Fall semester is necessary for access to library resources during Summer I and Summer II. Continuous enrollment is defined as enrollment in all Fall and Spring semesters from the initial enrollment to the semester in which the student graduates. If the student will graduate in Summer I or Summer II, the student must be enrolled in that session. The dissertation is graded on a Credit/No Credit basis. In case a student wishes to appeal a negative decision by the student's doctoral dissertation committee, the student shall first take the appeal to this same committee, which shall hear the appeal and render a decision. In case a doctoral dissertation committee cannot reach unanimous agreement and the student wishes to appeal further a negative decision, a Review Committee shall be established consisting of the Dean of the Graduate College, the appropriate academic dean, and the chairperson or director of the unit. The Review Committee shall seek to resolve the controversy without passing on the dissertation. The Review Committee handling such a case is limited to procedural actions, such as reconstituting the doctoral dissertation committee if the case merits it. All doctoral dissertations will be microfilmed by ProQuest/UMI. The student is also required to prepare an abstract of the dissertation for publication in Dissertation Abstracts International. Open to graduate students only. Graded on a Credit/No Credit basis. 12 to 24 hours

GRAD 7320 Doctoral Clinical Internship Designed for doctoral students pursuing a program-required 2,000 clock-hour internship at an approved professional site. Enrollment is approved for students with the Prerequisite academic preparation by the department committee supervising the area of the student's training. Permission of department is required. Open to graduate students only. 1 to 4 hours

GRAD 7350 Graduate Research Units offering doctoral programs may use this number to designate research projects for their doctoral students. Such projects may be taken more than once by the student. Permission of instructor is required.Open to graduate students only. 2 to 10 hours

GRAD 7400 Teaching in Higher Education This course will prepare Western Michigan University graduate teaching assistants for teaching in the twenty-first century learning environments. The course

will consist of instruction in the lecture environment, collaborative-learning environment, and adoption of appropriate technology to the classroom. Open to graduate students only. Prerequisite: Permission of the department and college is required. 1to 3 hours

GRAD 7450 Teaching Practicum in Higher Education This course continues the preparation of Western Michigan University graduate teaching assistants for teaching in the twenty-first century learning environments. The course will focus on the application of knowledge gained in GRAD 7400 via the preparation of course materials demonstrating mastery of instructional techniques for the lecture environment, collaborative-learning environment, and adoption of appropriate technology to the classroom. Open to graduate students only.
Prerequisite: Grad 7400 and permission of the department and college is required. 1 to 3 hours

Evaluation

EVAL 6000 Foundations of Evaluation This course is designed to introduce students to the fundamental logic and methodology of evaluation, as it applies to the full range of potential evaluands including products, services, personnel, programs, projects, policies, interventions, organizations, manufacturing processes, information and communication systems. Topics may include an introduction to evaluation theory and models, needs assessment, the generation of comprehensive criterion checklists, setting standards, collecting and synthesizing mixed method data, drawing explicitly evaluative conclusions, and the basics of presenting evaluation findings to different client audiences. Open to graduate students only. 3 hours

EVAL 6010 Interdisciplinary Seminar in Evaluation This seminar will provide a forum for the integration of core evaluation concepts across the program, developing an understanding of evaluation as a profession, and for exchange of ideas among evaluation students, faculty, and industry representatives from multiple disciplines. Topics may include: the history and nature of the evaluation profession, evaluation standards, metaevaluation, the application of evaluation to different types of evaluands, similarities and differences in evaluation approaches used for different purposes, current issues in evaluation, and needs/opportunities for innovation in evaluation. Open to graduate students only. 1 hour

EVAL 6970 Advanced Evaluation: Variable Topics This course will present various advanced topics in evaluation theory, methodology, and/or practice, as applied to a diverse range of evaluands (e.g., products, policies, programs, and personnel) across a variety of disciplines, industries, and/or sectors. Although designed primarily for the Interdisciplinary Ph.D. in Evaluation, this course is also likely to be of interest to students in other programs. Open to graduate students only. Prerequisite: Permission of instructor. 1 to 3 hours

EVAL	7100	Independent Research	2 to 6 hours
EVAL	7110	Readings in Doctoral Specialization	3 hours
EVAL	7120	Professional Field Experience	2 to 9 hours
EVAL	7300	Doctoral Dissertation	1 to 12 hours

University Officers

Board of Trustees

James Bolger, Whitehall

Lynn L. Chen-Zhang, Portage

William Johnston, Portage

Ron Kitchens, Portage

Ken Miller, Kalamazoo

Shani Penn, Farmington Hills

William Pickard, Bloomfield Hills

Jeffrey Rinevelt, Ann Arbor

Senior Staff

Dr. Edward B. Montgomery, President

Dr. Diane Anderson, Vice President for Student Affairs

Ms. Kathy Beauregard, Director of Intercollegiate Athletics

Ms. Elena Gaudio, Executive Assistant

Dr. James A. Gilchrist, Vice Provost for Budget and Personnel

Mr. Carrick Craig, Vice President for Legal Affairs and General Counsel

Dr. Hal B. Jenson, Dean, School of Medicine

Dr. Daniel Litynski, Vice President for Research

Mr. Robert Miller, Associate Vice President for Community Outreach

Ms. Cheryl Roland, Executive Director of University Relations

Mr. Greg Rosine, Vice President for Government Affairs and University Relations

Mr. Kahler B. Schuemann, Secretary to the Board of Trustees

Dr. Susan Stapleton, Interim Provost and Vice President for Academic Affairs

Mr. Timothy Terrentine, Vice President for Development and Alumni Relations

Ms. Janice VanDerKley, Vice President for Business and Finance and Chief Financial Officer

Dr. Martha Warfield, Vice President for Diversity and Inclusion

Mr. Thomas Wolf, Chief Information Officer

Deans

Dr. Carla Koretsky, College of Arts and Sciences

Captain David Powell, College of Aviation

Dr. Satish Deshpande, Interim Dean, Haworth College of Business

Dr. Ming Li, College of Education and Human Development

Dr. Houssam Toutanji, College of Engineering and Applied Sciences

Mr. Daniel Guyette, College of Fine Arts

Dr. Susan Stapleton, The Graduate College

Dr. Earlie Washington, College of Health and Human Services

Dr. Gary Bischof, Lee Honors College

MS. Julie Garrison, Dean, University Libraries

Dr. Dawn M. Gaymer, Extended University Programs

Faculty

Abdel-Qader, Ikhlas, 1996, Professor of Electrical and Computer Engineering
B.S., Kuwait; M.S., San Jose State; Ph.D., North Carolina State

Abudayyeh, Osama, 1996, Associate Dean, College of Engineering and Applied Sciences, and Chair and Professor of Civil and Construction Engineering
B.Sc., Kuwait; M.Sc., M.Eng., California (Berkeley); Ph.D., North Carolina State

Ackerson, Kelly, 2008, Assistant Professor of Nursing
M.S.N., Drexel; B.S.N., Ph.D., Michigan

Adkison-Johnson, Carla R., 2003, Professor of Counselor Education and Counseling Psychology
B.S., Akron; M.S., Dayton; Ph.D., Kent State

Akanmu, Abiola, 2012, Assistant Professor of Civil and Construction Engineering
B.Eng., Bayero (Nigeria); Ph.D., Pennsylvania State

Aktan, Haluk M., 2006, Professor of Civil and Construction Engineering
B.S., M.S., METU (Turkey); Ph.D., Michigan

Al-Fuqaha, Ala, 2004, Professor of Computer Science
B.S., Petroleum and Minerals (Saudi Arabia); M.S., Ph.D., Missouri

Alexander, Donald L., 1991, Professor of Economics
B.S., Bowling Green; Ph.D., Penn State

Alvi, Eskander, 1994, Professor of Economics
B.A. Dhaka; M.A., DePaul; M.A., Ph.D., Johns Hopkins

Anderson, Ariel L. H., 1986, Professor of Teaching, Learning, and Educational Studies
A.B.Ed., Michigan; M.A., Ph.D., Michigan State

Anderson, Dawn L., 2015, Assistant Professor of Blindness and Low Vision Studies
B.S., Central Michigan; M.A., Ph.D., Western Michigan

Anderson, Mary L., 2008, Assistant Professor of Counselor Education and Counseling Psychology
B.A., Western Michigan; M.A., Ph.D., Oakland

Anderson, Mary Z., 1995, Professor of Counselor Education and Counseling Psychology
B.S., M.S., Ph.D., Illinois

Andrasi, Paula, 1996, Associate Professor of Interdisciplinary Health Programs
B.A., Michigan State; M.A., Ed.D., Western Michigan

Andreadis, Nicholas A., 1999, Dean, Lee Honors College and Associate Professor of Counselor Education and Counseling Psychology
B.A., Kent State; M.D., Creighton

Angles, Jeffrey, 2004, Professor of Japanese and Gender and Women's Studies
B.A., M.A., Ph.D., Ohio State

Apker, Julie, 2001, Associate Professor of Communication
B.A., Wisconsin; M.A., Ph.D., Kansas

Applegate, Brooks, 1999, Professor of Educational Leadership, Research and Technology
B.S., Wyoming; M.A., Morehead State; Ph.D., Texas A and M

Archer, D. Eric, 2014, Assistant Professor of Educational Leadership, Research and Technology
B.S., Alabama; M.S., Oklahoma State; M.Ed., Illinois (Chicago); Ph.D., Oklahoma State

Areaux, David, 2008, Assistant Professor of Physician Assistant
B.S., M.S., Grand Valley State

Ari-Gur, Judah, 1985, Professor of Mechanical and Aerospace Engineering
B.Sc., M.Sc., D.Sc., Technion-Israel Institute of Technology

Asefa, Sisay, 1980, Professor of Economics
B.A., Central College (Pella); M.S., Ph.D., Iowa State

Asumadu, Johnson, 1996, Associate Professor of Electrical and Computer Engineering
B.S., University of Science and Technology (Ghana); M.S., Aston (U.K.); M.E.E., Rensselaer Polytechnic Institute; Ph.D., Missouri (Columbia)

Atashbar, Massood, 1999, Associate Professor of Electrical and Computer Engineering
B.S., Isfahan; M.S., Sharif; Ph.D., RMIT

Attanayake, Upul, 2010, Assistant Professor of Civil and Construction Engineering
B.S.E., University of Peradeniya (Sri Lanka); M.Eng., Asian Institute of Technology (Thailand); Ph.D., Wayne State

Bade Shrestha, Shiva Om, 2003, Professor of Mechanical and Aerospace Engineering
M.Sc., Ph.D., Calgary (Canada)

Bafna, Kailash M., 1979, Professor of Engineering Design, Manufacturing, and Management Systems
B.S., Banaras Hindu (India); M.S., Mississippi; Ph.D., Purdue; P.E.

Baker, Kathleen, 2004, Associate Professor of Geography
B.S., Central Michigan; M.S., Western Michigan; Ph.D., Michigan State

Baker, Lisa E., 1991, Associate Professor of Psychology
B.A., New York (Oswego); M.A., Ph.D., Vanderbilt

Balden, Blair, 1996, Associate Professor of Aviation Sciences
B.S., State of New York; M.A., West Virginia; J.D., Thomas A. Cooley

Baldner, Kent, 1990, Associate Professor of Philosophy
B.A., California State (Northridge); M.A., Ph.D., California (Irvine)

Barkman, Todd, 2000, Associate Professor of Biological Sciences
B.S., M.S., Michigan State; Ph.D., Texas (Austin)

Bautista, Manuel A., 2009, Assistant Professor of Physics
B.S., Universidad Simon Bolivar (Venezuela); Ph.D., Ohio State

Bazuin, Bradley, 2000, Interim Chair and Associate Professor of Electrical and Computer Engineering
B.S., Yale; M.S., Ph.D., Stanford

Beach, Andrea, 2004, Professor of Educational Leadership, Research, and Technology
B.A., M.A., Ph.D., Michigan State

Beane, Wendy S., 2013, Assistant Professor of Biological Sciences
B.A., B.S., Averett; Ph.D., Duke

Beasley, Samuel T., 2015, Assistant Professor of Counselor Education and Counseling Psychology
B.A., Kentucky; M.A., Indiana (Bloomington); Ph.D., Texas (Austin)

Bedrosian, Jan L., 1993, Professor of Speech, Language, and Hearing Sciences
B.A., M.A., California (Santa Barbara); Ph.D., Wisconsin (Madison)

Bejcek, Bruce E., 1996, Professor of Biological Sciences
B.S., B.S., Michigan State; Ph.D., St. Louis

Benac, David T., 2013, Associate Professor of History
B.A., Michigan State; M.A., Indiana/Purdue (Indianapolis); Ph.D., Missouri

Bennett, Patrick, 2015, Assistant Professor of Mathematics
B.S., Nevada (Las Vegas); M.S., Ph.D., Carnegie Mellon

Bensley, Robert J., 1993, Professor of Health of Interdisciplinary Health Programs
B.S., Western Michigan; M.A., Central Michigan; Ph.D., Utah

Bentz, Amy E., 2015, Faculty Specialist II-Lecturer, Teaching, Learning, and Educational Studies
B.S., Michigan State; M.A.T., Wayne State; Ph.D., Western Michigan

Bergman, Karen, 2012, Assistant Professor of Nursing
B.S.N., Western Michigan; Ph.D., Michigan State

Berkey, Debra S., 1985, Professor of Health, Physical Education and Recreation

B.S., Slippery Rock; M.S., Ed.D., West Virginia

Berkhofer III, Robert F., 2001, Associate Professor of History
B.A., Cornell; M.A., Ph.D., Harvard

Bertman, Steven B., 1994, Professor of Environment and Sustainability
B.S., Union; Ph.D., Yale

Berto, Luigi A., 2007, Professor of History
B.A., Ph.D., Venice (Italy)

Biener, Zvi, 2007, Assistant Professor of Philosophy
B.A., Rutgers; M.A., Ph.D., Pittsburgh

Bierlein-Palmer, Louann, 2003, Professor of Educational Leadership, Research, and Technology
B.S., Michigan State; M.Ed., Arizona; Ed.D., Northern Arizona

Biggs, Christopher, 2011, Associate Professor of Music
B.A., American University; M.M. Arizona; D.M.A., Missouri (Kansas City)

Bischof, Gary H., 1999, Dean, Lee Honors College
B.A., Bethany (West Virginia); M.S., Virginia Tech; Ph.D., Purdue

Blaisure, Karen R., 1992, Professor of Family and Consumer Sciences
B.S., Houghton; M.A., Pennsylvania State; Ph.D., Virginia Technological

Blickle, Peter, 1996, Professor of German and Gender and Women's Studies
B.A., Western Michigan; A.M., Ph.D., Michigan

Bloom, Devin, 2015, Assistant Professor of Biological Sciences and Environment and Sustainability
B.A., Saint Mary's; M.S., Southeastern Louisiana; Ph.D., University of Toronto

Boerma, Scott, 2013, Professor of Music
B.M., Western Michigan; M.M., Michigan; D.M.A., Michigan State

Bondarchuk, Karen, 2002, Associate Professor of Art
B.F.A., Nova Scotia College of Art and Design; M.A., Ohio State

Borden, Sandra L., 1996, Professor of Communication
B.J., Missouri (Columbia); M.A., Ohio State; Ph.D., Indiana

Borish, Linda J., 1991, Associate Professor of History and Gender and Women's Studies
B.A., Skidmore; M.A., Ph.D., Maryland (College Park)

Bowen, Denise, 2007, Interim Chair and Associate Professor of Physician Assistant
B.S., Western Illinois; B.S., Iowa; M.A., Western Michigan

Bradburn, Elizabeth, 2004, Associate Professor of English
B.A., Amherst; M.A., Ph.D., Boston College

Brandão, José Antonio,, 1997, Professor of History
B.A., Toronto; M.A., Ph.D., York

Brink, Kyle E., 2012, Associate Professor of Management
B.S., Grand Valley State; M.S., Ph.D., Georgia

Browning, Christine A., 1988, Professor of Mathematics
B.S., M.A., Ph.D., Ohio State

Bruey, Cheryl, 2002, Master Faculty Specialist, Theatre
B.A., Western Michigan; M.F.A., Alabama

Burnie, David A., 1987, Professor of Finance and Commercial Law
B.A., Guelph; M.B.A., Windsor; Ph.D., Syracuse; CCM, CFA

Burns, Clement, 1994, Professor of Physics
B.A., Princeton; M.S., Ph.D., California (San Diego)

Burns, Stephanie, 2012, Assistant Professor of Counselor Education and Counseling Psychology
B.F.A., Akron; M.Ed., Ph.D., Kent State

Burt, Walter, 2004, Assistant Professor of Educational Leadership, Research, and Technology
B.A., Alcorn State; M.A., Eastern Michigan; Ph.D., Michigan

Bush, Jonathan E., 2001, Associate Professor of English
B.A., Bowling Green State; M.A., Northwestern State University of Louisiana; Ph.D., Purdue

Butt, Steven E., 1997, Interim Chair and Professor of Engineering Design, Manufacturing, and Management Systems
B.A., Earlham; M.S., Ph.D., Pennsylvania State

Byrd-Jacobs, Christine A., 1996, Professor of Biological Sciences
B.S., Avila; Ph.D., Arizona

Cameron, John H., 1996, Professor of Paper Engineering, Chemical Engineering, and Imaging
B.S., M.S., Ph.D., Michigan State

Campos, John, 1987, Director, Western Sound Studios, Music
B.M., Berklee College of Music

Cannon, Alexander M., 2013, Assistant Professor of Music
B.A., Pomona College; M.A., Ph.D., Michigan

Carlson, Susan M., 1993, Associate Professor of Sociology
B.A., Central Florida; M.S., Ph.D., Florida State

Carr, Joetta L., 1999, Professor of Gender and Women's Studies
B.A., Miami; M.A., Ph.D., Florida State

Carr, Steven, 2012, Professor and Chair of Computer Science
B.S., Michigan Technological; M.S., Ph.D., Rice

Cassidy, Daniel P., 1998, Associate Professor of Geosciences
B.S., Wisconsin; M.S., Indiana; Ph.D., Notre Dame

Cekola, Cary, 2011, Faculty Specialist II, Speech, Language, and Hearing Sciences
B.S., M.A., Ball State

Chai, Dae Seok, 2016, Assistant Professor of Educational Leadership, Research and Technology
B.S., Hanyang University (South Korea); B.S.Ed., Georgia; M.Ed., Minnesota

Chajecki, Zbigniew, 2014, Assistant Professor of Physics
M.Sc., Warsaw University of Technology; M.S., Ph.D., Ohio State

Chapleau, Ann, 2010, Associate Professor of Occupational Therapy
B.S., Western Michigan; M.S., Indiana University of South Bend; D.H.S., Indianapolis

Charland, William, 2006, Assistant Professor of Art
B.F.A., M.F.A., Michigan; M.A., Ph.D., California (Berkeley)

Chase, Carla, 2006, Interim Chair and Professor of Occupational Therapy
B.S., Indiana; M.S., Ed.D., Ball State

Chateauneuf, John E., 1996, Associate Professor of Chemistry
B.S., Salem State; Ph.D., Tufts

Cheatham, Christopher C., 2003, Associate Dean for Academic Services, College of Education and Human Development and Associate Professor of Physical Education and Recreation
B.S., Miami (Ohio); M.S., Ball State; Ph.D., Kent State

Chen, Jou-Chen, 2016, Assistant Professor of Family and Consumer Sciences
B.Ed., National Changhua University (Taiwan); M.S., Indiana (Bloomington); Ph.D., Virginia Tech

Chin, Christina D., 2010, Associate Professor of Art
B.A., Michigan State; M.S., Northwestern; M.A., Ph.D., Illinois (Urbana-Champaign)

Cho, Christopher, 1984, Professor of Mechanical and Aerospace Engineering
B.S.M.E., Seoul National; M.S.M.E., Ph.D., SUNY (Stonybrook); P.E.

Cho, Hyunkeun, 2013, Assistant Professor of Statistics
B.S., Ajou; B.A., B.S., M.S., State University New York (Stony Brook); M.S., Ph.D., Illinois (Urbana-Champaign)

Choudhury, Alamgir, 2001, Associate Professor of Engineering Design, Manufacturing, and Management Systems
B.S., BUET (Dhaka); M.S., Ph.D., New Mexico State; P.E.

Christian, Sue Ellen, 2001, Associate Professor of Communication
B.A., Hope; M.A., Michigan

Chung, Sung G., 1986, Professor of Physics
B.En., Tokyo Institute of Technology; M.S., Ph.D., Tokyo

Ciccantell, Paul S, 2000, Professor of Sociology
B.A., Trinity; M.S., Ph.D., Wisconsin (Madison)

Clark, John A., 1998, Chair and Professor of Political Science
A.B., Wabash; Ph.D., Ohio State

Cobern, William, 1997, Director, Mallinson Institute for Science Education and Professor of Biological Sciences
M.A., San Diego State; Ph.D., Colorado

Connors, Elyse, 2013, Assistant Professor of Blindness and Low Vision Studies
B.S., Minnesota; M.A., Asbury Seminary; M.A., Western Michigan University

Cooney, Donald F., 1977, Associate Professor of Social Work
B.A., M.Div., Mary Immaculate; M.A., Fordham; Ph.D., Bryn Mawr

Coons, Lisa, 2012, Assistant Professor of Music
B.M., Missouri (Kansas City); M.A., State University of New York (Stony Brook); M.F.A., Ph.D., Princeton

Corder, J. Kevin, 1995, Professor of Political Science
B.A., Chicago; M.A., Ph.D., Washington (St. Louis)

Coryell, Janet L., 1991, Professor of History and Gender and Women's Studies
B.A., SUNY (Cortland); M.A., Delaware; Ph.D., William and Mary

Councell-Vargas, Martha, 2010, Associate Professor of Music
B.M., Oberlin; M.M., Rice; Ph.D., Iowa

Cousins, Linwood H., 2009, Professor, School of Social Work
B.S.W., M.S.W., Virginia Commonwealth; M.A., Ph.D., Michigan

Craig, Stephen E., 1999, Professor of Counselor Education and Counseling Psychology
B.A., Texas Tech; M.S., Texas A & M (Commerce); Ph.D., North Texas

Crawford II, Charles E., 1995, Professor of Sociology
B.A., Florida; M.S., Ph.D., Florida State

Criter, Robin, 2015, Assistant Professor of Speech, Language, and Hearing Sciences
B.S., Saint Louis; M.A., Au.D., Iowa; Ph.D., Nebraska (Lincoln)

Crotchett, Cat, 1996, Professor of Art
B.F.A., Illinois; M.F.A., Bowling Green State

Crumpton, Teresa, 1991, Master Faculty Specialist, Speech, Language and Hearing Sciences
B.A., Michigan State; M.A., Western Michigan; Au.D., Florida

Curtis, Amy, 2005, Professor of Physician Assistant
B.A., M.P.H., Ph.D., Michigan

Damashek, Amy L., 2009, Assistant Professor of Psychology
B.S., Illinois (Urbana-Champaign); Ph.D., Missouri (Columbia)

Dannison, Linda L., 1981, Professor and Chair, Department of Family and Consumer Sciences
B.S., Western Michigan; M.S., Ph.D., Kansas State

Datta-Sandhu, Suhashni, 1971, Associate Professor of Political Science and Gender and Women's Studies
B.A., M.A., Western Michigan; Ph.D., Nairobi (Kenya)

Davidson, Douglas V., 1991, Associate Professor of Sociology
B.S., Tougaloo; M.S., Illinois Institute of Technology; Ph.D., California (Berkeley)

Davis, Jon, 2004, Professor of Mathematics
B.S. Wisconsin (Eau Claire); M.S., Wisconsin (Madison); Ph.D., Minnesota

Davis, William, 2004, Associate Professor of Art
B.F.A., Ohio State; M.F.A., Tyler School of Art

DeCamp, Whitney, 2011, Associate Professor of Sociology
Ph.D., Delaware

DeChano-Cook, Lisa, 2001, Associate Professor of Geography
B.A., Juniata; M.S., North Dakota; M.A., Ohio; Ph.D., Southwest Texas State

deDoncker, Elise, 1982, Professor of Computer Science
Licentiate in Mathematics, Vrije Universiteit (Brussels); Ph.D., Katholieke Universiteit (Leuven)

DeFulio, Anthony, 2015, Assistant Professor of Psychology
B.S., Florida (Gainsville); M.S., North Texas; Ph.D., Florida (Gainsville)

DeMello, James, 1987, Professor and Chair, Department of Finance and Commercial Law
B.Comm, Bombay (India); M.B.A., D.B.A., Kent State

dePeaux, Richard, 1969, Professor of Art
B.S., M.S., M.F.A., Wisconsin (Madison)

Deshpande, Satish, 1990, Interim Dean, Haworth College of Business; Professor of Management
B.Com, Bombay; Ph.D., Iowa

Diaz, Hector L., 2013, Director and Professor of Social Work
B.A., Antillean College; M.S., Case Western Reserve; Ph.D., Illinois (Chicago)

Dickey, E. Bryce, 1998, Faculty Specialist II, Family and Consumer Sciences
B.A., Texas (Austin); M.S., Texas (Arlington)

Dickinson, Alyce M., 1984, Professor of Psychology
B.A., Lycoming; M.A., Fairleigh Dickinson; Ph.D., Western Michigan

Dirette, Diane, 1999, Associate Professor of Occupational Therapy
B.S., Eastern Michigan; M.A, Ph.D., New York

Docherty, Kathryn M., 2011, Associate Professor of Biological Sciences
B.S., Marist College; Ph.D., Notre Dame

Doudna, Kimberly D., 2015, Faculty Specialist I-Professional Specialist, Family and Consumer Sciences
B.A., Muskingum College; M.S., Ph.D., Iowa State

Duncan Lane, Crystal, 2015, Assistant Professor of Family and Consumer Sciences
B.S., Virginia Technological; M.S., East Carolina; Ph.D., Virginia Technological

Dupuis, Margaret, 2001, Master Faculty Specialist, English
B.A., Willamette; M.A., Ph.D., Oregon

Durbin, Steven M., 2013, Professor of Electrical and Computer Engineering
B.S., M.S., Ph.D., Purdue

Durham, Lofton L. III, 2009, Assistant Professor of Theatre
B.A., Transylvania; M.A., Ph.D., Pittsburgh

Ealy, Clifton, 1989, Professor of Mathematics
B.S., Michigan; M.A., Wayne State; Ph.D., Chicago

Edmonds, Thomas, 2008, Master Faculty Specialist, Finance and Commercial Law
B.B.A., Western Michigan; J.D., Wayne State

Edwards, Autumn 2005, Professor of Communication
B.S., Texas Tech; M.A., Kansas; Ph.D., Ohio

Edwards, Chad, 2005, Professor of Communication

B.A., M.A., Texas Tech; Ph.D., Kansas

Egan, Philip J., 1984, Associate Professor of English
B.A., College of the Holy Cross; M.A., Ph.D., Kansas

Ehrhardt, Kristal, 1994, Professor of Special Education and Literacy Studies
B.A., Miami (Ohio); Ed.S., Ph.D., Cincinnati

Eimers, Nancy, 1989, Professor of English
B.A., Iowa; M.A., Indiana; M.F.A., Arizona; Ph.D., Houston

Ellis, Todd, 2015, Assistant Professor, Mallison Institute for Science Education and Department of Geography
B.S., Pennsylvania State; M.S., Ph.D., Colorado State

Emerson, Charles, 1999, Associate Professor of Geography
B.S., Georgia; M.A., Ph.D., Iowa

Eng, Jacqueline, 2008, Assistant Professor of Biological Sciences
B.S., California (Davis); M.A., Ph.D., California (Santa Barbara)

Enyedi, Alexander, 1993, Professor of Biological Sciences
B.S., M.S., Guelph; Ph.D., Pennsylvania State

Ernst, Beth K., 2016, Faculty Specialist I-Lecturer, Business Information Systems
B.A., Purdue; M.A., Ed., Toledo

Essani, Karim, 1989, Professor of Biological Sciences
B.S., M.S., Karachi (Pakistan); Ph.D., Western Ontario (Canada)

Eversole, Robert R., 2003 Master Research Faculty Specialist, Biological Sciences
B.S., M.S., Western Michigan; Ph.D., Michigan State

Famiano, Michael A., 2005, Associate Professor of Physics
B.S., M.S., Michigan; Ph.D., Ohio State

Farber, Paul, 1986, Professor of Teaching, Learning and Educational Studies
B.A., M.S.Ed., Ph.D., SUNY (Buffalo)

Farrell, Dan, 1980, Professor of Management
B.A., Aquinas; M.A., Central Michigan; Ph.D., Iowa

Feffer, Steve, 2003, Professor of English
B.F.A., Tisch School of the Arts, NUY; M.F.A., Iowa; Ph.D., Wisconsin

Felkel, Robert W., 1971, Professor of Spanish
B.S., M.A., Boston College; Ph.D., Michigan State

Feng, Mingming, 2012, Assistant Professor of Accountancy
B.S., Liaoning Institute of Technology; Masters, Dong Bei; Masters, Missouri State; Ph.D., Oklahoma State

Fenn, William H., 1994, Professor of Physician Assistant
B.S. Oklahoma; B.S., SUNY; M.S., Aquinas; Ph.D., Pacific Western

Fetters, Marcia, 2001, Associate Dean and Director of Student Teaching, College of Education and Human Development; Associate Professor of Teaching, Learning, and Educational Studies
B.S., M.A., Ph.D., Michigan State

Fiore, Jennifer, 2015, Assistant Professor, School of Music
B.M.E., M.M.E., Ph.D., Kansas

Flanagan, David J., 1992, Professor of Management
B.S., Illinois (Urbana); Ph.D., Indiana

Fleming, Paul D., 1996, Professor of Chemical and Paper Engineering
B.Sc., Ohio State; A.M., Ph.D., Harvard

Fogarty, Kieran, 2002, Professor of Occupational Therapy
B.S., M.S., Southern Illinois; Ph.D., Arkansas

Fong, Alvis Cheuk Min, 2016, Assistant Professor of Computer Science
B.Eng. (Hons.), M.Sc., Imperial College London (UK); M.Sc., University of Oxford (UK); Ph.D., University of Auckland (NZ)

Ford, Leigh A., 1999, Professor and Director, School of Communication
B.S., Eastern Michigan; M.A., Western Michigan; Ph.D., Purdue

Ford, Yvonne, 2009, Associate Professor of Nursing
B.S.N., M.S.N., Ph.D., Michigan

Foster, Jennifer, 2012, Assistant Professor of Counselor Education and Counseling Psychology
B.A., Cedarville; M.S., Palm Beach Atlantic; Ph.D., Central Florida

Foulk, Lin, 2003, Professor of Music
B.M., Missouri (Kansas City); M.M., D.M.A., Wisconsin (Madison)

Frazier, Barbara J., 1999, Associate Professor of Family and Consumer Sciences
B.A., M.B.A., Western Michigan; Ph.D., Michigan State

Fredericks, Tycho K., 1995, Professor of Engineering Design, Manufacturing, and Management Systems
B.S., Ursinus; M.S., Ph.D., Wichita State

Freeman, Susan, 2010, Chair and Assistant Professor of Gender and Women's Studies
B.A., Furman; M.A., Cincinnati; Ph.D., Ohio State

Freudenburg, Gene, 2006, Professor of Mathematics
B.A., Valparaiso; M.S., St. Louis; Ph.D., Washington (St. Louis)

Frieder, Jessica E., 2011, Associate Professor of Psychology
B.S., Allegheny College; M.A., Ohio State; Ph.D., Utah State

Fruth, Stacie, 2016, Professor and Chair, Department of Physical Therapy
B.S., Michigan; M.S., Massachusetts; M.S., D.H.Sc., Indianapolis

Fuqua, R. Wayne, 1976, Professor of Psychology
B.A., M.A., Ph.D., Florida

Gapova, Elena, 2006, Associate Professor of Sociology and Gender and Women's Studies
Ph.D., Minsk State Institute

Garza Mitchell, Regina, 2014, Associate Professor of Educational Leadership, Technology and Research
B.A., M.A., Ed.D., Central Michigan

Gaynor, Scott T., 2001, Associate Professor of Psychology
B.A., Wisconsin (Milwaukee); M.A., Ph.D., North Carolina (Greensboro)

Geier, Brett, 2014, Assistant Professor of Educational Leadership, Research and Technology
B.A., Hope College; M.A., Grand Valley State; Ed.D., Western Michigan

Geiser, John R., 1999, Associate Professor of Biological Sciences
B.S., Pittsburgh; Ph.D., Washington

Gershon, Richard A., 1989, Professor of Communication
B.A., Goddard; M.Ed., Vermont; Ph.D., Ohio

Gesink, John W., 1984, Professor and Chair, Department of Electrical and Computer Engineering
B.S.M.E., M.S.B.E., M.S.E.E., Ph.D., Michigan

Ghantasala, Muralidhar, 2003, Associate Professor of Mechanical and Aerospace Engineering
B.S., M.S., Andhra; M.S., Ph.D., Indian Institute of Science

Gigante, Maria, 2012, Associate Professor of English
B.A., State University of New York; M.A., Ph.D., Maryland

Gill, Sharon, 2008, Assisant Professor of Biological Sciences
B.S., M.S., Manitoba (Canada); Ph.D., York (U.K.)

Glista, Sandra O., 1987, Master Faculty Specialist, Speech, Language, and Hearing Sciences
B.S., Loyola; M.S., Illinois (Urbana-Champaign)

Goetz, Barry, 2001, Associate Professor of Sociology
B.A., Boston; M.A., Ph.D., California (Berkeley)

Gogan, Brian J., 2011, Associate Professor of English
B.A., Xavier; M.A., Marquette; Ph.D., Virginia Polytechnic Institute and State University

Gómez, Pablo, 2015, Associate Professor of Electrical and Computer Engineering
B.S., Universidad Autónoma de Coahuila; M.Sc., Ph.D., CINVESTAV, National Polytechnic Institute

Gorczyca, Thomas W., 1997, Professor of Physics
B.S., Massachusetts (Amherst); Ph.D., Colorado (Boulder)

Grantner, Janos, 1994, Professor of Electrical and Computer Engineering
M.Sc., Ph.D., Technical University (Budapest); Candidate of Technical Science, Hungarian Academy of Sciences

Gray, Esther, 2001, Associate Professor of Special Education and Literacy Studies
B.A., M.S., Kansas State; Ph.D., Indiana

Gray, Lori, 2016, Assistant Professor, School of Interdisciplinary Health Programs
B.A, Michigan; M.A., Western Michigan; Ph.D., Michigan State

Gray, Marion W., 2001, Professor of History
B.A., Texas Christian; M.A., Ph.D., Wisconsin (Madison)

Gribbin, Donald W., 2006, Professor of Accountancy
B.A., Bethel College; M.S.A., Western Michigan; Ph.D., Oklahoma State, C.P.A., Michigan

Grinnell, Richard M., 2004, Professor of Social Work
M.A., Chicago; B.A., Ph.D., Wisconsin (Madison)

Grunert Kowalske, Megan L., 2011, Associate Professor of Chemistry
B.S., Indianapolis; M.S., Ph.D., Purdue

Gu, Chien-Juh, 2007, Associate Professor of Sociology and Gender and Women's Studies
Ph.D., Michigan State

Guda, Ramakrishna, 2008, Assistant Professor of Chemistry
B.Sc., Nagajuna Govt Degree College (India); M.Sc., Hyberbad (India); Ph.D., Mumbai (India)

Gullon-Rivera, Angel, 2012, Assistant Professor of Family and Consumer Sciences
B.A., University of Puerto Rico; M.S., Ph.D., Wisconsin (Madison)

Gupta, Ajay, 1989, Professor of Computer Science
B.E., B.I.T.S. (Pilani, India); M.S., Ph.D., Purdue

Gupta, Tarun, 1988, Professor of Industrial and Entrepreneurial Engineering & Engineering Management; Engineering Design, Manufacturing, and Management Systems
B.S., India Institute of Technology, Banaras Hindu University; M.S., National Institute of Industrial Engineering (India); Ph.D., Wisconsin (Milwaukee)

Gustafson, Peter, 2008, Associate Professor of Mechanical and Aerospace Engineering
B.S., Massachusetts Institute of Technology; M.S., Ph.D., Michigan

Haas, Johnson, 2000, Associate Professor of Geosciences and Environment and Sustainability
B.Sc., Auburn; Ph.D., Washington (St. Louis)

Hadden, Sally E, 2009, Associate Professor of History
B.A., North Carolina (Chapel Hill); M.A., J.D., Ph.D., Harvard

Hadley, Wanda, 2014, Assistant Professor of Educational Leadership, Research and Technology
B.S., M.A., Ohio State; Ph.D., Dayton

Haight, Bruce M., 1970, Professor of History and Africana Studies
B.A., Kalamazoo College; M.A., Ph.D., Northwestern

Hains, LTC Decker B., 2016, Master Faculty Specialist, Department of Civil and Constuction Engineering
B.S., United States Military Academy; M.S., Alaska (Anchorage); M.S., Missouri (Rolla); Ph.D., Lehigh

Hallett, Lucius, 2008, Assistant Professor of Geography
B.A., New Hampshire; M.A., Ph.D., Kansas

Hampton, Duane R., 1986, Associate Professor of Geosciences
B.S., Michigan State; M.S., Auburn; Ph.D., Colorado State

Han, Bernard, 1998, Professor of Business Information Systems
B.S., National Chiao-Tung; M.B.A., Arizona State; Ph.D., Washington

Hansford, Claudia M., 2007, Assistant Professor of Mechanical and Aeronatuical Engineering
B.S., Western Michigan; Ph.D., Michigan

Hanson, Nicholas, 2014, Assistant Professor of Human Performance and Health Education
B.S., M.S., Nebraska (Omaha); Ph.D., Ohio State

Harris, Carolyn J., 1985, Professor of Spanish and Gender and Women's Studies
B.S., Iowa State; Licenciatura in English Philology, Universidad de Zaragoza (Spain); M.A., Ph.D., Iowa

Harrison, Jennifer E., 2011, Assistant Professor of Social Work
B.S., Michigan State; M.S.W., Houston

Hart-Young, Allison, 1997, Professor of Teaching, Learning, and Educational Studies
B.A., Swarthmore; M.A., Ph.D., Michigan

Hartmann, David J., 1996, Chair and Professor of Sociology
B.A., M.A., Ph.D., Chicago

Harvey, Kirsten, 2009, Assistant Professor of Dance
B.A., M.F.A., California (Irvine)

Hathaway, Richard B., 1977, Professor of Mechanical and Aerospace Engineering
B.S., M.S., Western Michigan; Ph.D., Oakland University; P.E.

Hawker, Norman W., 1994, Professor of Finance and Commercial Law
B.B.A., J.D., Michigan

Hazel, Debra L., 1992, Professor of Occupational Therapy
B.S. Ed., Northern Illinois; M.O.T., Ph.D., Western Michigan

He, Chansheng, 1995, Professor of Geography
B.S., M.S., Northwestern College of Agriculture, Yangling Shaanxi (China); Ph.D., Michigan State

Hearit, Keith M., 1996, Special Assistant to the Provost and Professor of Communication
B.A.A., M.A., Central Michigan; Ph.D., Purdue

Heasley, Lynne, 2000, Associate Professor of History and Environment and Sustainability
B.S., Miami (Ohio); M.S., Ph.D., Wisconsin (Madison)

Henderson, Charles, 2002, Associate Professor of Physics
B.A., Macalester; M.S., Ph.D., Minnesota

Herrington, Joan, 1996, Professor and Chair, Department of Theatre
B.A., Wesleyan; M.A., City University-Hunter College; Ph.D., California (Los Angeles)

Higgins, Matthew L., 1995, Associate Professor of Economics
B.A., M.S., Ph.D., Illinois

Hillenbrand, James M., 1988, Professor of Speech, Language and Hearing Sciences
B.S., M.S., Indiana; Ph.D., Washington

Hillenbrand, Kathryn, 1988, Master Faculty Specialist, Speech, Language and Hearing Sciences
B.S., Western Michigan; M.A., Northwestern

Hines, Charles E., 1977, Associate Professor of Accountancy
B.B.A., M.B.A., Western Michigan; Ph.D., Michigan State; C.P.A., Michigan

Hock, Nancy, 2011, Master Faculty Specialist, Occupational Therapy
B.S., Western Michigan; M.O.T., Texas Women's

Hoffmann, Susan, 2000, Professor of Political Science
B.A., Marquette; M.U.P., Wisconsin (Milwaukee); Ph.D., Wisconsin (Madison)

Holtzman, Jon, 2003, Professor of Anthropology

B.A., Haverford; M.A., Ph.D., Michigan

Homan, Willem, 1996, Professor of Aviation Sciences
B.S., M.T., Southeastern Oklahoma State; M.B.A., Arizona State; Ed.D., Northern Arizona

Hoppe, Pamela, 2004, Associate Professor of Biological Sciences
B.A., Cornell; Ph.D., Princeton

Horvitz, Brian, 2006, Assistant Professor of Educational Leadership, Research, and Technology
B.A., Rutgers; M.S., Pennsylvania; M.S., Ph.D., Indiana

Houshyar, Abdolazim, 1988, Professor of Industrial and Entrepreneurial Engineering & Engineering Management
B.S., Shiraz (Iran); M.S., Ph.D., Florida

Hovestadt, Alan J., 1985, Professor of Counselor Education and Counseling Psychology
B.S., M.S., Ed.D., Northern Illinois

Howard, Gregory, 1998, Associate Professor of Sociology
B.A., California (Irvine); M.A., Ph.D., SUNY (Albany)

Huang, Wei-Chiao, 1985, Professor of Economics
B.A., National Taiwan; M.A., Ph.D., California (Santa Barbara)

Hudson, Jennifer, 2012, Assistant Professor of Mechanical and Aerospace Engineering
B.S., Cornell; M.S.E., Ph.D., Michigan

Hueng, James C., 2003, Associate Professor of Economics
B.A., National Taiwan; M.A., Ph.D., Wisconsin (Madison)

Huffman, David L., 2001, Associate Professor of Chemistry
B.S., Jones; M.S., Illinois State; Ph.D., Illinois

Huitema, Bradley E., 1968, Professor of Psychology
B.A., Southern Illinois; M.A., Western Michigan; Ph.D., Colorado State

Hurwitz, Mark S., 2005, Associate Professor of Political Science
B.A., SUNY (Buffalo); J.D., Brooklyn Law School; M.A., Ph.D., Michigan State

Hyter, Yvette, 1998, Professor of Speech, Language, and Hearing Sciences
B.S., M.A., Western Michigan; Ph.D., Temple

Ide, Charles, 1998, Professor of Biological Sciences
B.A., Oregon; M.A., Ph.D., Princeton

Ikonomov, Pavel G., 2003, Associate Professor of Engineering Design, Manufacturing, and Management Systems
M.E., Technical University of Varna (Bulgaria); M.S., Muroran Institute (Japan); Ph.D., Hokkaido (Japan)

Intindola, Melissa L., 2015, Assistant Professor of Management
B.S., M.B.A., Indiana (Southeast); Ph.D., New Mexico State

Jasperse, Gregory, 2017, Assistant Professor of Music
B.M., Western Michigan; M.M., Miami

Jellies, John, 1995, Professor of Biological Sciences
B.A., Blackburn; M.S. Illinois State; Ph.D., Texas (Austin)

Johnson, Dean R., 1980, Associate Professor of Electrical and Computer Engineering
B.S.E.E., Michigan State; M.S.E.E., Illinois; Ph.D., Michigan State

Johnson, Douglas, 2013, Assistant Professor of Psychology
B.S., Central Michigan; M.A., Ph.D., Western Michigan

Johnson, Jason, 2017, Faculty Specialist II, Computer Science
B.S., M.S., Western Michigan

Johnson, Lynn Nations, 1989, Professor of Teaching, Learning, and Educational Studies
B.S., M.Ed., Brigham Young; Ph.D., California (Los Angeles)

Johnson, Phillip D., 2001, Associate Professor of Counselor Education and Counseling Psychology
B.A., Virginia Union; M.A., Ph.D., New York University

Johnson, Rand H., 1990, Professor of Classics
B.A., M.A., Brigham Young; M.A., Ph.D., UCLA

Johnston, Paul A., Jr., 1989, Professor of English
B.A., Michigan; Ph.D., Edinburgh

Jones, Jeffrey, 2008, Associate Professor of Teaching, Learning and Educational Studies
B.A., Colorado; M.A., Adams State; Ph.D., Virginia

Joslin, Katherine, 1987, Professor of English
B.A., Oakland; M.A., Ph.D., Northwestern

Junger, Richard, 1996, Associate Professor of Communication
B.A., Minnesota; M.A., Ph.D., Wisconsin (Madison)

Kachun, Mitch A., 2001, Associate Professor of History
B.A., Pennsylvania State; M.S., Illinois State; M.A., Ph.D., Cornell

Kaczmarek, Stephen E., 2015, Assistant Professor of Geosciences
B.S., Ph.D., Michigan State

Kamber, Emanuel Y., 1989, Professor of Physics
B.Sc., Al-Mustansiriyah (Iraq); Ph.D., University of London (U.K.)

Kane, Donald, 2005, Assistant Professor of Biological Sciences
Ph.D., Oregon

Kapenga, John, 1981, Associate Professor of Computer Science
B.S., M.S., Ph.D., Western Michigan

Karowe, David N., 1996, Professor of Biological Sciences
B.A., Harvard; M.S., Ph.D., Michigan

Karpov, Vyacheslav, 1996, Professor of Sociology
B.A., Leningrad; Ph.D., Ohio State

Katbamna, Bharti, 1995, Professor of Speech, Language, and Hearing Sciences
B.Sc., Bombay; M.A., Ph.D., Cincinnati

Katerattanakul, Pairin, 2000, Associate Professor of Business Information Systems
M.B.A., Thammasat (Bangkok); M.A., Ph.D., Nebraska (Lincoln)

Katrovas, Richard, 2002, Professor of English
B.A., San Diego State; M.F.A., Iowa

Kayani, Asghar N., 2006, Accelerator Physicist, Department of Physics
M.Sc., M.Phil., Pakistan; Ph.D., Ohio

Kayany, Joseph M., 1995, Associate Professor of Communication
B.S., Indore; M.A., Philippines; Ph.D., Florida State

Keaveny, Richard, 1968, Professor of Art
B.S., Massachusetts College of Art; M.F.A., Rhode Island School of Design

Keele, Denise, 2009, Assistant Professor of Political Science and Environmental Sciences
B.S., M.S., Tennessee (Knoxville); Ph.D., SUNY (ESF)

Kehew, Alan E., 1986, Professor of Geosciences
B.S., Bucknell; M.S., Montana State; Ph.D., Idaho

Kiddle, James, 2002, Associate Professor of Chemistry
B.A., Drake; M.S., Illinois-Chicago; Ph.D., Loyola-Chicago

Kim, Dae Shik, 2009, Assistant Professor of Blindness and Low Vision Studies
M.A., Ph.D., Western Michigan University

Kim, Ok-Kyeong, 2007, Assistant Professor of Mathematics
B.Ed., Taegu; M.Ed., Korea National; M.S.T., Ph.D., Missouri

Kimmel, Jean, 2001, Professor of Economics
B.A., George Washington; M.A., Delaware; Ph.D., North Carolina

King-Barry, Susan, 2008, Assistant Professor of Physician Assistant
B.S.N., Illinois; B.S.M., Western Michigan; MPA, Nebraska

Klekar, Cynthia, 2005, Associate Professor of English
B.A., M.A., Texas (San Antonio); Ph.D., West Virginia

Kline, Kathleen, 1997, Professor of Mathematics
B.A., M.A., Ed.D., Michigan

Koelling, Melinda, 2004, Assistant Professor of Mathematics
B.A., Chicago; Ph.D., Michigan

Kohler, Steven L., 2001, Director, Institute of the Environment and Sustainability and Associate Professor of Biological Sciences and Environment and Sustainability
B.S., Wichita State; M.S., Ph.D., Michigan

Kominz, Michelle A., 1997, Professor of Geosciences
B.A., Colby College; M.S., Rhode Island; Ph.D., Columbia

Konate, Mariam, 2007, Associate Professor of Gender and Women's Studies
B.A., M.A., (Universite deOuagadougou) Burkina Faso; M.A., Ph.D., Temple

Koretsky, Carla M., 2000, Associate Professor of Geosciences and Environmental and Sustainability Studies
B.S., Washington; B.A., M.S., Ph.D., Johns Hopkins

Korista, Kirk, 1997, Professor and Chair of Physics
B.S., Illinois (Urbana-Champaign); Ph.D., Ohio State

Koshmanova, Tetyana, 2001, Professor of Teaching, Learning, and Educational Studies
B.S., Drogobych; M.A.Ed., L'viv; Ph.D., Dragomanov Pedagogical University; Ph.D., Institute for Research on Pedagogy and Psychology of Professional Education, Academy of Pedogogical Sciences of Ukraine

Kramer, Ronald C., 1978, Professor of Sociology
B.A., Toledo; M.A., Ph.D., Ohio State

Krawutschke, Peter W., 1967, Professor of German
ABITUR, Goethe Gymnasium Karlsruhe (Germany); B.A., M.A., Western Michigan; Ph.D., Michigan

Kretovics, Joseph, 1996, Professor of Educational Leadersip, Research, and Technology
B.S., Ohio; Ed.M., Bowling Green; Ph.D., Miami (Ohio)

Kreuze, Jerry G., 1983, Professor of Accountancy
B.S., Ferris State; M.B.A., Western Michigan; Ph.D., Missouri; C.P.A., Michigan

Krishnamurthy, R. V., 1991, Professor of Geosciences
B.Sc., M.Sc., Utkal; Ph.D., Physical Research Laboratory Ahmedabad

KrishnaSwamy, C. R., 1983, Associate Professor of Finance and Commercial Law
B.S.E.E., Bangalore (India); M.B.A., Western Carolina; D.B.A., Tennessee

Kuchta, Todd, 2004, Associate Professor of English
B.A., M.A., John Carroll; Ph.D., Indiana

Kuder, Nicholas, 2013, Assistant Professor of Art
B.F.A., Rhode Island School of Design; M.F.A., Cranbrook Academy of Art

Kuersten, Ashlyn, 1997, Professor of Political Science
B.A., Louisville; M.A., Ph.D., South Carolina

Kutzko, David, 2001, Associate Professor of Classics
B.A., Iowa; Ph.D., Michigan

Kwigizile, Valerian, 2011, Associate Professor of Civil and Construction Engineering
B.Sc., Dar-Es-Salaam; M.Sc., Florida State; Ph.D., Nevada (Las Vegas)

Lagerwey, Mary, 1995, Director and Professor of Nursing
B.A., Calvin; B.S.N., Grand Valley State; M.S., Michigan State; Ph.D., Western Michigan

Lambert, Priscilla, 2004, Associate Professor of Political Science and Gender and Women's Studies
B.A., Trinity; M.A. Keio (Tokyo); M.A., Ph.D., California (San Diego)

Lancendorfer, Karen M., 2005, Associate Professor of Marketing
B.S., Eastern Michigan; M.A., Ph.D., Michigan State

Langsam, Sheldon, 1988, Professor of Accountancy
B.S., Ohio; M.S., SUNY (Albany); Ph.D., Arkansas; C.P.A., Michigan and New York

Lawoti, Mahendra, 2005, Associate Professor of Political Science
B.Tech., Calicut (India); M.U.R.P., Hawaii; Ph.D., Pittsburgh

Ledyaev, Yuri, 1997 Professor of Mathematics

M.S., Ph.D., Moscow Institute for Physics and Technology; Dr.Sc. Steklov Institute

Lee, Donna B., 2009, Assistant Professor of Blindess and Low Vision Studies
B.S., M.A., Western Michigan; A.B.D., Louisville

Lee, Helen, 2007, Assistant Professor of Blindess and Low Vision Studies
B.F.A., Center for Creative Studies; M.A., Wayne State; M.A., Ed.D., Western Michigan

Lee, Ho Sung, 1999, Professor of Mechanical and Aerospace Engineering
B.S., Korea Maritime; M.S., Ph.D., Michigan

Lee, Sangwoo, 2015, Assistant Professor of Human Performance and Health Education
B.P.E., Kyonggi University; M.S.S., Seoul National University; Ph.D., Texas Women's

Lee, Tiffany, 2013, Associate Professor, Physician Assistant
B.S., Florida; M.A., Alabama (Birmingham); G.C., Ph.D., Western Michigan

Leingpibul, Thaweephan, 2005, Assistant Professor of Marketing
B.S., Kasetsart; M.B.A., Southwest Missouri State; Ph.D., Tennessee (Knoxville)

Leja, James, 1997, Professor and Chair, Blindness and Low Vision Studies
B.S., M.S., Western Michigan; Ph.D., Southern Illinois

Lemberg, David S., 1997, Associate Professor of Geography
A.B., California (Berkeley); M.R.P., North Carolina (Chapel Hill); Ph.D., California (Santa Barbara)

Lemmer, Kristina M., 2012, Assistant Professor of Mechanical and Aerospace Engineering
B.S.E., M.S.E., Ph.D., Michigan

Lepisto, Douglas A., 2015, Assistant Professor of Management
B.A., Kalamazoo College; M.A., Chicago; M.S., Boston College

Levin, Mariana, 2015, Assistant Professor of Mathematics
B.A., California (San Diego); M.A., Ph.D., California (Berkeley)

Lewis-Ginebaugh, Kathryn, 2002, Associate Professor of Interdisciplinary Health Programs
B.A., Macalaster; M.A., Psy.D., Nova Southwestern

Li, Ming, 2013, Dean, College of Education and Human Development and Professor of Human Performance and Health Education
B.Ed., Guangzhou Sport (China); M.Ed., Hangzhou (China); Ed.D., Kansas

Liggett, Barbara S., 1996, Associate Professor, School of Public Affairs and Administration
B.A., Hope; M.A., Ed.D., Western Michigan

Lilien, Leszek, 2005, Assistant Professor of Computer Science
M.S., Poland; M.S., Ph.D., Pennsylvania

Lindstrom, Debra, 1992, Professor of Occupational Therapy
B.S. Ed., Northern Illinois; M.O.T., Ph.D., Western Michigan

Linn, Cindy L., 2000, Professor of Biological Sciences
B.S., M.S., Illinois; M.A., Ph.D., Rice

Liou, William, 1997, Professor of Mechanical and Aerospace Engineering
B.S., National Cheng Kung (Taiwan); M.S., Ph.D., Pennsylvania State

Lipkin, Steven N., 1981, Professor of Communication
B.S., Northwestern; M.A., Ph.D., Iowa

Lisovskaya, Elena, 1996, Professor of Sociology
B.A., Leningrad; Ph.D., Ohio State

Little, Adriane, 2008, Associate Professor of Art
B.S., Buffalo State College; M.F.A., Suny (Buffalo)

Little, David E., 1987, Professor of Music
B.M., Eastern Illinois; M.M., Illinois State; D.M.A., Indiana

Litvinova, Elena, 2013, Assistant Professor of Physics
M.Sc., Obninsk State Technical University; M.Sc., Gorkey Literary Institute; Ph.D., Bogoliubov Laboratory of Theoretical Physics

Litynski, Daniel M., 1999, Professor of Electrical and Computer Engineering
M.S., Rochester; B.S., Ph.D., Rensselaer Polytechnic

Liu, Tianshu, 2004, Professor of Mechanical and Aerospace Engineering
B.S., M.S., Nanjing (China); M.S., Ph.D., Purdue

Liu, Yuanlong, 1998, Interim Chair and Professor of Health, Physical Education and Recreation
B.S., Inner Mongolia; M.P.E., Ph.D., British Columbia

Lo, Jane-Jane, 2002, Associate Professor of Mathematics
B.S., National Taiwan; M.S., Tsing Hua; Ph.D., Florida State

Lu, Yan, 2011, Associate Professor of Biological Sciences
B.S., M.S., Nanjing; Ph.D., Wisconsin (Madison)

Luqmani, Mushtaq, 1977, Professor and Chair, Department of Marketing
B.S., Karachi (Pakistan); B.S., Indiana Institute of Technology; M.B.A., Ph.D., Michigan State

Lynde-Recchia, Molly, 1993, Chair of World Languages and Literatures and Professor of French
B.A., California (Davis); M.A., Ph.D., Indiana

Lyon-Callo, Vincent, 1998, Associate Professor of Sociology and Gender and Women's Studies
B.A., Connecticut; M.A., Ph.D., Massachusetts (Amherst)

Lyon-Jenness, Cheryl H., 2000, Master Faculty Specialist, History
B.A., Kalamazoo College; M.S., Michigan; Ph.D., Western Michigan

Lyth, David M., 1987, Professor of Engineering Design, Manufacturing, and Management Systems
B.S., Michigan Technological; M.S., Western Michigan; Ph.D. Michigan State; CQE

MacDonald, Frederick F., 1986, Associate Professor of Social Work
B.S.M., Mannes College; M.S.W., Ph.D., Tennessee

Machiorlatti, Jennifer, 2004, Associate Professor of Communication
B.A., M.A., Michigan; Ph.D., Wayne State

Mackey, D. Steven, 2008, Associate Professor of Mathematics
B.A., Delaware; M.A., SUNY (Buffalo); Ph.D. Manchester (U.K.)

Mackey, Niloufer, 1994, Professor of Mathematics
M.A., M.S., Ph.D., SUNY (Buffalo)

Maier, Paul L., 1959, Professor of History
B.A., B.D., Concordia Seminary; M.A., Harvard; Ph.D., Basel

Malcolm, Stephen B., 1991, Professor of Biological Sciences
B.Sc., Manchester (U.K.); M.Sc., Rhodes (South Africa); D.Phil., Oxford (U.K.)

Malott, Richard W., 1966, Professor of Psychology
B.A., Indiana; Ph.D., Columbia

Manley, R. Adam, 2009, Associate Professor of Family and Consumer Sciences
B.S., M.S., Ferris State; Ph.D., Virginia Technological

Martini, Edwin A., 2005, Associate Dean, Extended University Programs and Associate Professor of History
B.S., Pitzer College; Ph.D., Maryland (College Park)

Martino, John R., 1993, Professor of Mathematics
B.S., George Mason; M.S., Ph.D., Northwestern

Mathews, Gary R., 1976, Professor of Social Work
B.A., Cincinnati; M.S.W., Wayne State; Ph.D., Western Michigan

Maury, Nichole, 2004, Associate Professor of Art
B.F.A., School of the Art Institute of Chicago; M.F.A., Iowa

McCardle, Michael W., 2004, Assistant Professor of Marketing
B.A., Jacksonville; M.A., Alabama; Ph.D., Central Florida

McCrumb, Dennis, 2005, Assistant Professor of Educational Leadership, Research, and Technology
B.S., Western Michigan; M.S., Ed.S., Ed.D., Indiana

McDonnell, Kelly A., 2000, Professor of Counselor Education and Counseling Psychology
B.A., Franklin and Marshall; M.A., Ph.D., Indiana

McGee, Heather, 2009, Associate Professor of Psychology
B.S., M.A., Ph.D., Western Michigan

McGrady, Michele L., 2015, B.A., Assistant Professor of Interdisciplinary Health Programs
Michigan State; M.A., Heidleburg College; GCP, Ph.D., Western Michigan

McGrew, Timothy J., 1995, Professor and Chair of Philosophy
B.A., Scranton; M.A., Ph.D., Vanderbilt

McGurn, Arthur R., 1980, Professor of Physics
B.A., Brown; Ph.D., California (Santa Barbara)

McIver, Derrick, 2012, Assistant Professor of Management
B.S., Ferris State; M.B.A., Texas A&M; Ph.D., Texas (San Antonio)

McKean, Joseph W., 1978, Professor of Statistics
B.S., Geneva College; M.S., Arizona; Ph.D., Pennsylvania State

McKittrick, Casey, 2005, Master Faculty Specialist, English
B.A., Rice; M.A., Ph.D., Texas (Austin)

McLaughlin, Jerry E., 2001, Assistant Professor of Counselor Education and Counseling Psychology
B.S., Central Michigan; M.A., Ph.D., Western Michigan

McMorrow, Shannon, 2016, Assistant Professor of Interdisciplinary Health Programs
B.S., Miami; M.P.H., San Jose State; Ph.D., Western Michigan

Meade, David, 2004, Associate Professor of Industrial and Entrepreneurial Engineering & Engineering Management
B.S., Lake Superior State; M.S., St. Thomas; Ph.D., Western Michigan

Meeusen, Meghann, 2015, Faculty Specialist II-Lecturer, English
B.S., M.A., Western Michigan; Ph.D., Illinois State

Meng, Lei, 2011, Associate Professor of Geography
B.S., Nanjing; M.S., China Agricultural; M.S., Illinois (Urbana-Champaign); Ph.D., Texas A & M

Merati, Parviz, 1986, Professor of Mechanical and Aerospace Engineering
B.S., Abadan Institute of Technology (Iran); M.S., Illinois Institute of Technology; Ph.D., Illinois (Urbana-Champaign); P.E.

Metro-Roland, Dennis, 2008, Assistant Professor of Teaching, Learning and Educational Studies
B.A., Loyola Marymount; M.A., Indiana; Ph.D., Illinois (Bloomington)

Metwalli, Ali, 1985, Professor of Finance and Commercial Law
B.Comm., AIN Shams University (Egypt); M.B.A., Siena College; Ph.D., St. Louis

Meyer, Donald J., 1991, Professor and Chair of Economics
B.A., Michigan State; Ph.D., Texas A & M

Meyer, Richard T., 2015, Assistant Professor of Mechanical and Aerospace Engineering
B.S., M.S., Missouri (Rolla); Ph.D., Purdue; P.E.

Mezei, Gellert, 2007, Assistant Professor of Chemistry
B.S., M.S., Babes-Bolyai (Romania); Ph.D., Puerto Rico

Michael, Timothy J., 2000, Professor of Health, Physical Education and Recreation
B.S., Temple; M.S., Texas Christian; Ph.D., Pittsburgh

Mickus, Maureen, 2006, Associate Professor of Occupational Therapy
B.A., Kalamazoo College; M.S.G., Southern California; Ph.D., Northwestern

Miles, Ann, 1994, Professor of Anthropology and Gender and Women's Studies
B.A., Chicago; M.P.H., Columbia; Ph.D., Syracuse

Miller, Damon, 1997, Associate Professor of Electrical and Computer Engineering
B.S., M.Engr., Ph.D., Louisville

Miller, John B., 1995, Professor of Chemistry
B.A., Harvard; M.A., Ph.D., Princeton

Miller, Michael G., 2002, Professor of Health, Physical Education and Recreation
B.S., California Univ of Pennsylvania; M.S., Ed.D., West Virginia

Mingus, Matthew S., 1998, Professor of Public Affairs and Administration
B.A., Denver; MPA, Victoria; Ph.D., Colorado (Denver)

Mingus, Tabitha, 1998, Associate Professor of Mathematics
B.S., Western Michigan; M.A., Central Michigan; Ph.D., Northern Colorado

Minnick, Lisa, 2004, Associate Professor of English
B.A., Florida; M.A., Ph.D., Georgia

Miron, Gary, 1997, Professor of Educational Leadership, Research and Technology
B.S., Northern Michigan; D.S.S., Ph.D., Stockholm

Mirzeler, Mustafa, 2003, Professor of English
B.A., California State (San Bernardino); M.A., Ph.D., Wisconsin (Madison)

Mo, Yirong, 2002, Professor of Chemistry
B.S., M.S., Ph.D., Xiamen, China

Moe, Angela, 2002, Professor of Sociology
B.A., Wisconsin (Eau Claire); M.S., Wisconsin (Milwaukee); Ph.D., Arizona State

Mondala, Andro, 2013, Assistant Professor of Chemical and Paper Engineering
B.S., University of the Philippines Los Banos; Ph.D., Mississippi State

Morris, Joseph R., 1984, Professor of Counselor Education and Counseling Psychology
B.A., Central State (Ohio); M.A., Ph.D., Michigan

Moser, Christine, 2005, Assistant Professor of Economics
B.A., Missouri (Columbia); M.A., Ph.D., Cornell

Muchmore, James, 1998, Associate Professor of Teaching, Learning, and Educational Studies
B.S., M.Ed., Vanderbilt; Ph.D., Michigan

Mukherjee, Debasri, 2002, Associate Professor of Economics
B.Sc., M.Sc., Calcutta; Ph.D., California (Riverside)

Munley, Patrick H., 1999, Professor and Chair, Department of Counselor Education and Counseling Psychology
B.S., Seton Hall; M.A., Ph.D., Maryland

Murray, James M., 2007, Professor of History
B.M., University of the Pacific; Ph.D., Northwestern

Naghshineh, Koorosh, 1994, Professor and Chair of Mechanical and Aerospace Engineering
B.S., M.S., Louisiana State; Ph.D., Pennsylvania State; P.E.

Nagle, Christopher C., 2001, Associate Professor of English
B.A. Albright; M.A., Virginia; Ph.D., SUNY (Stony Brook)

Naranjo, Joshua, 1989, Professor of Statistics
B.S., M.S., Philippines; Ph.D., Pennsylvania State

Nash, Ilana, 2003, Associate Professor of English
B.A., M.A., California (Los Angeles); Ph.D., Bowling Green

Naugle, Amy E., 2000, Associate Professor of Psychology
B.A. St. Thomas; Ph.D., Nevada (Reno)

Neill, Jon R., 1980, Professor of Economics
B.A., Chicago; M.A., Ph.D., Pittsburgh

Nelson, Nina M., 1982, Professor of Dance
A.B., Smith College; M.F.A., Case Western Reserve; Laban Movement Analysis/Bartenieff Fundamentals Certification; Dancer Specific Conditioning

Nelson, Regena Fails, 1994, Chair and Professor of Teaching, Learning, and Educational Studies; Interim Chair, Special Education and Literacy Studies
B.S., Loyola (Chicago); Ph.D., Michigan

Newell, Stephen J., 2002, Interim Associate Dean of Haworth College of Business and Professor of Marketing
B.B.A., Michigan State; M.B.A., Indiana; Ph.D., Florida State

Niewiadomska-Bugaj, Magdalena, 2001, Professor and Chair, Department of Statistics
M.S., Warsaw; Ph.D., Mickiewicz University (Poland)

Nissen, Thisbe, 2010, Associate Professor of English
B.A., Oberlin; M.F.A., Iowa

Northouse, Peter G., 1974, Professor of Communication
B.A., M.A., Michigan State; Ph.D., Denver

Obare, Sherine, 2003, Associate Vice President for Research; Associate Professor of Chemistry
B.S., West Virginia State; Ph.D., South Carolina

Ofori-Amoah, Benjamin, 2006, Professor and Chair, Department of Geography
B.A., Ghana; M.Sc., University of Science and Technology (Kumasai, Ghana); M.A., Exeter (U.K.); Ph.D., Simon Fraser (Canada)

Ofstein, Laurel, 2012, Assistant Professor of Management
B.A., Kalamazoo; M.B.A., DePaul; Ph.D., Illinois (Chicago)

Ogbomo, Onaiwu W., 2006, Professor of Africana Studies and History
B.A., Maiduguri (Nigeria); M.A., Ibadan (Nigeria); Ph.D., Dalhousie (Canada)

Oh, Jun-Seok, 2004, Associate Professor of Civil and Construction Engineering
B.Sc., M.Eng., Hanyang (Korea); Ph.D., California (Irvine)

Ohanna, Natalio, 2009, Assistant Professor of Spanish
B.A., Hebrew University of Jerusalem; Ph.D., McGill (Canada)

Olsen, William C., 1988, Professor of English
B.A., Drake; M.F.A., Arizona, Ph.D., Houston

Omilion-Hodges, Leah, 2011, Associate Professor of Communication
B.A., M.A., Grand Valley State; Ph.D., Wayne State

Onicescu, Georgiana, 2015, Assistant Professor of Statistics
B.S., University of Bucharest; M.S., Johns Hopkins Bloomberg School of Public Health; Ph.D., Medical University of South Carolina

Orbe, Mark P., 1997, Professor of Communication and Gender and Women's Studies
B.S., Ohio; M.A., Connecticut; Ph.D., Ohio

Owen, Ginger, 2003, Associate Professor of Art
B.F.A., Central Florida; M.F.A., Louisiana State

Oxhandler, Richard M., 1978, Professor, Counseling and Testing Center
B.A., Harpur College; M.S., Syracuse; Ed.D., Western Michigan

Palmer, Timothy, 2000, Professor of Management
B.S.F., New Hampshire; M.B.A., Northern Arizona; Ph.D., Arizona State

Palmitessa, James R., 1997, Associate Professor of History
M.A., Boston College; B.A., Ph.D., New York

Palthe, Jennifer, 2000, Professor of Management
B.S., Cape Town; M.B.A., Ph.D., Michigan State

Pancella, Paul V., 1990, Professor of Physics
B.A., St. Louis; M.A., Ph.D., Rice

Pastrana-Pérez, Pablo, 2002, Associate Professor of Spanish
Diplomatura, U. de Valladolid; B.A., Western Michigan; M.A., Ph.D., Wisconsin (Madison)

Patten, John, 2003, Professor of Industrial and Entrepreneurial Engineering & Engineering Management
B.M.E., General Motors Institute; M.S., Oakland; Ph.D., North Carolina

Pattison, Kelley H., 2014, Assistant Professor, Bronson School of Nursing
B.S., Western Michigan; B.S.N., Nazareth; M.S.N., Grand Valley State; Ph.D., Michigan

Paul, Annegret, 1999, Associate Professor of Mathematics
B.S., Ph.D., Maryland

Paul, Rajib, 2008, Assistant Professor of Statistics
B.S., Calcutta (India); M.S., Indian Institute of Technology; Ph.D.., Ohio State

Paulius, Lisa, 1993, Professor of Physics
A.B., Chicago; M.S., Ph.D., California (San Diego)

Pavlik, Carolyn, 2004, Associate Professor of Dance
B.A., Texas (Austin); M.F.A., Washington

Peake, Marcy L., 2017, Faculty Professional Specialist, Family and Consumer Sciences
B.S., M.A., Western Michigan

Pekarovicova, Alexandra, 1999, Professor of Chemical and Paper Engineering
M.Sc., Ph.D., Slovak Technical

Penner, James, 2011, Associate Professor of Accountancy
B.S., M.A., Michigan State; Ph.D., Virginia Tech

Pérez de la Cruz, Mariola, 2001, Master Faculty Specialist, Spanish
Licenciature, Ph.D., Universidad de Alcalá (Spain)

Perkins, Alisa M., 2013, Assistant Professor of Comparative Religion
B.A., Wesleyan; M.A., Ph.D., Texas (Austin)

Perryman-Clark, Staci, 2010, Assistant Professor of English
B.A., Michigan; M.A., Eastern Michigan; Ph.D., Michigan State

Petcovic, Heather L., 2004, Associate Dean, College of Arts and Sciences and Assistant Professor of Geosciences and Science Education

B.A., Northampton; M.S., Ph.D., Oregon (Corvallis)

Peters, Robert, 1993, Associate Professor of Public Affairs and Administration
B.A., Elizabethtown; M.S., Texas; Ph.D., Michigan

Peterson, Craig A., 1992, Professor of Finance and Commercial Law
B.S., M.B.A., St. Cloud; Ph.D., Arkansas

Peterson, Mary E., 2005, Faculty Specialist II, Speech, Language and Hearing Sciences
B.S., M.A., Western Michigan; Au.D., Florida

Peterson, Sharon L., 2011, Faculty Specialist II, Educational Leadership, Research and Technology
B.S., M.A., Ed.D., Western Michigan

Peterson, Stephanie M., 2009, Chair and Associate Professor of Psychology
B.A., M.A., Ph.D., Iowa

Petrovic, Srdjan, 1996, Professor of Mathematics
B.A., M.S., Belgrade; Ph.D., Michigan

Piazza, Susan, 2005, Professor of Special Education and Literacy Studies
B.A., B.Ed., Windsor; M.Ed., Ph.D., Wayne State

Pietras, Cynthia J., 2003, Associate Professor of Psychology
B.S., M.S., Ph.D., Florida

Pingali, Kalyana Chakravarthy, 2011, Assistant Professor of Chemical and Paper Engineering
B.S., Osmania (India); M.B.A., Maduri Kamaraj (India); M.S., M.B.A., Ph.D., New Mexico State

Poling, Alan, 1978, Professor of Psychology
B.A., Alderson-Broaddus College; M.A., West Virginia; Ph.D., Minnesota

Popkova, Anna, 2015, Assistant Professor of Communication
B.A., North Dakota; Specialist, Siberian State Aerospace University; M.A, Ph.D, Minnesota

Poppink, Sue, 2001, Associate Professor of Educational Leadership, Research, and Technology
B.A., Hope; M.P.P., Michigan; Ph.D., Michigan State

Pozo, Susan, 1982, Director of Global and International Studies Program and Professor of Economics
B.A., Barnard College; Ph.D., Michigan State

Prewitt, Kenneth, 2006, Professor of Music
B.A., M.A., Bob Jones; D.M.A., South Carolina

Prieto, Diana M., 2011, Assistant Professor of Industrial and Entrepreneurial Engineering & Engineering Management
B.S., M.S., Universidad del Norte (Colombia); M.A., Ph.D., South Florida

Propp, Kathleen, 1999, Associate Professor of Communication
B.S., M.A., Mankato State; Ph.D., Iowa

Protacio, Maria S., Associate Professor of Special Education and Literacy Studies
M.Ed., Nebraska (Lincoln); Ph.D., Michigan State

Pyenson, Lewis Robert, 2006, Professor of History
B.A., Swarthmore; M.S., Wyoming; Ph.D., Johns Hopkins

Raaberg, Gwen, 1990, Professor of English and Gender and Women's Studies
B.A., William and Mary; M.A., California State (Fullerton); Ph.D., California (Irvine)

Ramrattan, Sam N., 1992, Professor of Engineering Design, Manufacturing, and Management Systems
B.S., M.S., Wisconsin; Ph.D., Iowa State

Rao, Shaila M., 2003, Associate Professor of Special Education and Literacy Studies
B.S., Karnatak (India); M.A., Nanyang Technological (Singapore); Ph.D., Arkansas

Ratner, Carl, 2001, Associate Professor of Music
B.M., Oberlin; M.A., Northeastern Illinois

Rawls, Glinda, 2007, Associate Professor, Counselor Education and Counseling Psychology
B.A., DePaul; M.E., Grand Valley State; M.A., Ph.D., Western Michigan

Rea, Alan, 1997, Professor of Business Information Systems
B.A., Pennsylvania State; M.A., Youngstown State; M.S., Maryland (Baltimore County); Ph.D., Bowling Green

Ready, Timothy, 2008, Director, Lewis Walker Institute for the Study of Race and Ethnic Relations and Associate Professor of Sociology B.A., Notre Dame; Ph.D., Michigan State

Reck, Robert F., 1986, Professor of Marketing
B.B.A., Western Michigan; M.B.A., Ph.D., Michigan State

Reeling, Carson, 2015, Assistant Professor of Economics and Environment and Sustainability
B.A., San Diego; M.S., Purdue; Ph.D., Michigan State

Reeser, Linda C., 1981, Professor of Social Work
B.A., M.S.W., Temple; Ph.D., Bryn Mawr

Reeves, Donald M., 2016, Associate Professor of Geosciences
B.S., Montana State; M.S., Montana (Missoula); Ph.D., Nevada (Reno)

Reeves, Patricia, 2005, Assistant Professor of Educational Leadership, Research, and Technology
B.A., M.A., Ed.D., Western Michigan

Rhodes, Steven C., 1975, Professor of Communication
B.A., Colorado State; M.A., Ph.D., Pennsylvania State

Richter, David, 2004, Assistant Professor of Mathematics
B.A., St. Cloud; Ph.D., Minnesota

Riggs, Diane, 2014, Faculty Specialist I-Lecturer, Comparative Religion
M.A., Ph.D., California (Los Angeles)

Risukhin, Vladimir, 2002, Professor of Aviation Sciences
B.S.,Kharkov (Ukraine); B.S., Krasny Kut (Russia); M.S. Leningrad (Russia); Ph.D., St. Petersburg (Russia); D.S. Moscow (Russia)

Ro, Kapseong, 2003, Professor of Mechanical and Aerospace Engineering
B.S., M.S., Drexel; Ph.D., Maryland

Rodriguez, Jorge, 1996, Associate Professor of Engineering Design, Manufacturing, and Management Systems
B.S., M.S., Instituto Tecnologico y de Estudios Superiores (Mexico); M.S., Ph.D., Wisconsin; M.B.A., Rutgers

Roland, Deanna, 2016, Faculty Specialist II-Clinical Specialist, Special Education and Literacy Studies
M.A., Western Michigan

Rosenthal, Alvin, 1984, Associate Professor of Physics
B.A., Ph.D., Colorado (Boulder)

Ross, Denise, 2014, Associate Professor of Psychology
B.A., Spelman; M.A., Ph.D., Columbia

Rossbach, Silvia, 1995, Professor of Biological Sciences
M.S., Münster (Germany); Ph.D., Cologne and Max-Planck Institute for Plant Breeding (Germany)

Roth, Edward, 2000, Associate Professor of Music
B.M., Western Michigan; M.M., Colorado State

Rubin, Eli, 2004, Professor of History
B.A., Swarthmore; M.A., Ph.D., Wisconsin (Madison)

Rudge, David W., 1999, Associate Professor of Biological Sciences
B.S., Duke; M.S., M.A., Ph.D., Pittsburgh

Ruhl, Jack M., 1993, Professor of Accountancy
B.A., M.S.A., Western Michigan; Ph.D., Case Western Reserve

Running-Johnson, Cynthia, 1986, Professor of French and Gender and Women's Studies
B.A., Luther College (Iowa); M.A., Ph.D., Wisconsin

Ryan, Michael J., 2000, Associate Professor of Economics
B.A., St. Norbert; M.A., Ph.D., Indiana

Rypma, Judith, 2004, Master Faculty Specialist, English
B.A., Michigan State; B.A., Grand Valley State; M.F.A., Western Michigan

Saillant, John, 1997, Professor of English and History
B.A., M.A., Ph.D., Brown

Saini, Jagjit, S., 2009, Associate Professor of Accountancy
B.S., MLS University (India); M.S., Devi Ahilya University (India); M.S., Mississippi; Ph.D., Oklahoma State

Salisbury, Eve, 2000, Professor of English
B.A., SUNY (Geneseo); M.A., Ph.D., Rochester

Sartoris, Mary Ellen, 2012, Faculty Specialist II, School of Social Work
B.A., Gannon; M.S.W., West Virginia

Sauck, William A., 1990, Associate Professor of Geosciences
B.A., St. Olaf; M.S., Ph.D., Arizona

Sauer, Eric M., 2002, Associate Professor of Counselor Education and Counseling Psychology
B.S., Michigan State; M.A., Ball State; Ph.D., Michigan State

Sawalha, Lina, 2014, Assistant Professor of Electrical and Computer Engineering
B.S. Jordan University of Sceince and Technogogy; B.S., Ph.D., Oklahoma

Scannell, Thomas, 1998, Professor of Management
B.S.E.E., M.B.A., Western Michigan; Ph.D., Michigan State

Schoffers, Elke, 1998, Associate Professor of Chemistry
B.S., Mainz; M.S., SUNY (Stony Brook); Ph.D., Wayne State

Schreiber, Donald R., 1988, Associate Professor of Chemistry
B.S., Florida Institute of Technology; M.S., Kansas; Ph.D., Miami

Schroeter, Daniela C., 2015, Assistant Professor, School of Public Affairs and Administration
M.A., Friedrich Schiller; Ph.D., Western Michigan

Schulman, Jana, 2002, Professor of English and Director of Medieval Institute
B.A., Barnard; B.Isl., Phil., University of Iceland; M.A., Columbia; M.A., Ph.D., Minnesota

Schultz, Thomas, 2012, Associate Professor of Accountancy
B.B.A., Loyola(Chicago); M.A., Northern Illinois; Ph.D., Arizona

Schuster, David, 2002, Associate Professor of Physics
M.S., Wisconsin (Madison); B.Sc., Ph.D., Witwatersrand

Schwenk, Allen J., 1985, Professor of Mathematics
B.S., California Institute of Technology; M.A., Ph.D., Michigan

Shao, Xiaoyun, 2008, Assistant Professor of Civil and Construction Engineering
B.Sc., M.S., Tongji (China); Ph.D., SUNY (Buffalo)

Shen, Jianping, 1996, Professor of Educational Leadership, Research, and Technology
B.A., Shanghai Institute of Education; M.A., East China Normal (Shanghai); Ph.D., Washington

Shen, Wuwei, 2002, Associate Professor of Computer Science
B.S., Beijing Computer Institute; M.E., Institute of Software, Chinese Academy of Science; M.S., Ph.D., Michigan

Sherwood, Dee Ann, 2012, Faculty Specialist II, School of Social Work
M.S.W., M.P.A., Grand Valley State; Ph.D., Michigan State

Shuster, Linda, 2016, Professor of Speech, Language and Hearing Sciences
B.A., M.S., Michigan; Ph.D., Ohio State

Siebert, Rudolf J., 1965, Professor of Comparative Religion
Ph.D., Mainz

Simon, Larry J., 1993, Associate Professor of History
B.S., Southern Colorado; B.A., Loyola Marymount (Los Angeles); M.A., Ph.D., California (Los Angeles)

Simpson, C. Dennis, 1978, Director, Alcohol and Drug Abuse Program and Professor of Physician Assistant
B.A., M.Ed., Ed.S., Louisville; Ed.D., Indiana

Singleterry, Lisa, 2015, Assistant Professor, Bronson School of Nursing
B.S.N., M.S.N., Ph.D., Michigan State

Sinn, Ekkehard, 2007, Professor of Department of Chemistry
B.A., M.A., Sydney (Australia); Ph.D., New South Wales (Australia)

Skjold, Brandy, 2008, Faculty Specialist I, Mallinson Institute for Science Education
M.S., Northern Michigan; Ph.D., Western Michigan

Slawinski, Scott, 2005, Associate Professor of English

B.A., SUNY (Buffalo); M.A., Alabama; Ph.D., South Carolina

Smith, Andrea, 1994, Professor of Teaching, Learning, and Educational Studies
M.S.W., Wayne State; B.S., Ph.D., Michigan State

Smith, David S., 1995, Professor of Music
B.M., Greenville; M.M., Michigan State; Ph.D., Florida State

Smith, Jesse, 2013, Assistant Professor of Sociology
M.A., Colorado

Smith, Kenneth H., 2005, Assistant Professor of Music
B.A., B.S., King's College; M.A., Eastman; Ph.D., Illinois

Smith, Ola M., 2000, Professor and Chair, Department of Accountancy
B.S., B.A., M.B.A., Detroit/Mercy; ISR, ICPSR, Michigan; Ph.D., Michigan State

Snyder, Zoann K., 1992, Associate Professor of Sociology
B.S., Wayne State; M.A., Nebraska (Lincoln); Ph.D., Arizona State

Springstead, James, 2012, Assistant Professor of Chemical and Paper Engineering
B.S., Pennsylvania; M.S., Ph.D., California (Los Angeles)

Spitsbergen, John M., 1996, Chair and Professor of Biological Sciences
B.S., M.S., Ph.D., Michigan State

Spybrook, Jessaca, 2008, Professor of Educational Leadership, Research, and Technology
B.A., M.A., Ph.D., Michigan

St. Martin, Mark, 2007, Associate Professor of Interdisciplinary Health Programs
B.A., Alma College; M.A., West Virginia; Ph.D., Western Michigan

Stamper, Christina, 2001, Professor of Management
B.B.A., Miami; M.B.A., Ph.D., Michigan State

Stapleton, Susan R., 1989, Interim Provost and Vice President for Academic Affairs; Dean, Graduate College; Professor of Chemistry and Biological Sciences
B.S, Juniata; Ph.D., Miami

Stark, Mary Ann, 2001, Associate Professor of Nursing
B.S.N., Capital; M.S., Ph.D., Michigan

Steinke, Jocelyn, 1995, Professor of Communication
B.A., Mount Holyoke; M.A., Cornell; Ph.D., Wisconsin (Madison)

Steuer, Susan M.B., 2006, Professor, University Libraries
B.A., Missouri (Columbia); M.L.S., Indiana (Bloomington); Ph.D., Minnesota

Stoline, Michael R., 1967, Professor of Statistics
B.A., M.S., Ph.D., Iowa

Stoltman, Joseph P., 1971, Professor of Geography
B.A., Central Washington State; M.A.T., Chicago; Ed.D., Georgia

Straight, Bilinda, 2000, Associate Professor of Anthropology and Gender and Women's Studies
B.A., Lake Erie; M.A., Ph.D., Michigan

Strong, Anise K., 2011, Associate Professor of History
Ph.D., Columbia

Suarez, Michelle A., 2011, Associate Professor of Occupational Therapy
B.S., M.O.T., Eastern; Ph.D., Western Michigan

Sultan, Mohamed I., 2004, Professor and Chair, Department of Geosciences
B.Sc., M.Sc. Cairo; Ph.D., St. Louis

Summy, Sarah, 1999, Professor of Special Education and Literacy Studies
B.S., Iowa; M.A., Ed.D., Northern Colorado

Swanson, Jacinda, 2004, Associate Professor of Political Science and Gender and Women's Studies
B.E., Vanderbilt; M.A., Ph.D., Notre Dame

Swisher, Judy, 2002, Associate Professor, Department of Finance and Commercial Law
B.S., Indiana University South Bend; Ph.D., Pennsylvania State

Szymczyna, Blair R., 2011, Assistant Professor of Chemistry
B.Sc., Manitoba; Ph.D., Toronto

Tabor, Nathan, 2017, Assistant Professor of History
B.A., Redlands; M.M., Ph.D., Texas (Austin)

Talbot, Donna M., 1992, Professor and Chair of Educational Leadership, Research, and Technology
B.A., Amherst; M.Ed., Lesley; Ed.S., Florida; Ph.D., Maryland

Tanis, John A., 1980, Professor of Physics
B.A., Hope College; M.S., Iowa; Ph.D., New York University

Tanner, Ralph, 1986, Professor of Electrical and Computer Engineering and Engineering Design, Manufacturing, and Management Systems
B.S.E., Michigan; M.S.E., Southern Methodist; Ph.D., Oakland; P.E., CMfge

Tarbox, Gwen, 1999, Professor of English
B.A., Michigan (Flint); M.A., London (U.K.); M.A., Ph.D., Purdue

Tarn, Mike, 1999, Professor and Chair, Department of Business Information Systems
B.S., National Taiwan Ocean; M.S., Ph.D., Virginia Commonwealth

Tasende, Mercedes, 1991, Interim Chair and Professor of Spanish
Licenciada, Universidad de Santiago de Compostela (Spain); M.A., Nebraska; Ph.D. Colorado

Tasko, Stephen M., 2002, Associate Professor of Speech, Language and Hearing Sciences
B.S., Guelph; M.H.Sc., Toronto; Ph.D., Wisconsin

Terpstra, Jeff, 2008, Associate Professor of Statistics
B.S., Grand Valley State; M.S.; Ph.D., Western Michigan

Thakurta, Joyashish, 2013, Assistant Professor of Geosciences
B.S., University of Calcutta (India); M.S., Jadavpur University (India); M.S., Wisconsin (Madison); Ph.D., Indiana (Bloomington)

Tiffany, Grace, 1995, Professor of English
B.A., Duke; M.A., Ph.D., Notre Dame

Torano, Vince J., 1997, Associate Professor of Art
B.A., M.A., California State (San Diego); M.F.A., Ohio (Athens)

Toutanji, Houssam, 2015, Dean, College of Engineering and Applied Sciences; Professor of Civil and Construction Engineering
B.S., M.S., Northeastern; Ph.D., Worcester Polytechnic Institute

Treiman, Jay, S., 1985, Professor of Mathematics
B.S., California (Davis); M.S., Ph.D., Washington

Tripp, Brian, 2001, Associate Professor of Biological Sciences and Chemistry
B.S., Colorado School of Mines; Ph.D., Utah

Tubino Blanco, Mercedes, 2014, Assistant Professor of Spanish
M.A., Ph.D., Arizona

Tuinoff, Kathy, 2014, Faculty Specialist II-Professional Specialist, Department of Physician Assistant
B.S., Grand Valley State; B.S., Western Michigan; M.S., Northwestern

Tyler, Ann A., 2007, Associate Dean, College of Health and Human Services; Professor and Interim Chair, Department of Speech, Language and Hearing Sciences
B.S., New Hampshire; M.S., Ph.D., Syracuse

Valdmanis, Vivian G., 2015, Professor of Interdisciplinary Health Programs
B.A., Michigan State; M.P.P., Michigan; Ph.D., Vanderbilt

Van Deusen, Karen, 1999, Professor of Social Work
B.S.W., Western Michigan; M.S.W., Grand Valley State; M.A., Psy.D., Central Michigan

Van Houten, Ron, 1972, Professor of Psychology
B.A., SUNY (Stony Book); M.A., Ph.D., Dalhousie (Canada)

Vandiver, Beverly, 2013, Professor of Counselor Education and Counseling Psychology
B.A., Western Kentucky; M.A., Kentucky; Ph.D., Ball State

Veeck, Ann, 1998, Professor of Marketing
B.M.E., Denison; M.M.R., Georgia; Ph.D., Louisiana State

Veeck, Gregory, 1999, Professor of Geography
B.A., Denison; M.A., Purdue; Ph.D., Georgia

Vellom, Paul, 2002, Associate Professor and Chair, Department of Teaching, Learning, and Educational Studies
B.A., California (San Diego); Ph.D., Michigan State

Venter, Andre, 2008, Assistant Professor of Chemistry
B.S., B.Sc., M.Sc., Ph.D., Pretoria (South Africa)

Vidic, Zelkja, 2012, Assistant Professor of Human Performance and Health Education
B.S., M.S., Ph.D., Idaho

Villalobos, Patricia E., 2010, Professor of Art
B.F.A., Louisiana State; M.F.A., West Virginia

Visscher, Cynthia, 2014, Faculty Specialist II, Lecturer, Comparative Religion
B.A., M.B.A., Grand Valley State; M.A., Ph.D., Western Michigan

Vizzini, Anthony J., 2009, Dean, College of Engineering and Applied Sciences and Professor of Mechanical and Aerospace Enginnering
S.B., S.M., Ph.D., Massachusetts Institute of Technology

Vliem, Sally, 1998, Master Faculty Specialist, Nursing
B.S.N., M.S., Ph.D., Michigan

Vocke, Karen, 2002, Associate Professor of English
B.A., Ohio Northern; M.A., Eastern Michigan; Ph.D., Toledo

Vonhof, Maarten, 2004, Professor of Biological Sciences and Environmental and Sustainability Studies
B.Sc., M.Sc., Calgary (Canada); Ph.D., York (Canada)

Wagle, Udaya, 2005, Professor and Director of Public Affairs and Administration
B.B.A., M.B.A., Tribhuvan (Nepal); M.S., Eastern; Ph.D., Massachusetts (Boston)

Wagner, Bret, 2001, Associate Professor of Management
B.S., Michigan State; M.E.A., George Washington; Ph.D., Michigan State

Wait, Robert F., 1970, Associate Professor of Sociology
B.S., M.A., Ph.D., Indiana

Walcott, Delores, 1995, Professor of Interdisciplinary Health Programs
B.A., M.S., Chicago State; Psy.D., Illinois School of Professional Psychology

Walcott, Philip, 2007, Faculty Specialist II, Physician Assistant
B.S., Aquinas College; M.S., Grand Valley State

Wall-Emerson, Robert, 2001, Professor of Blindness and Low Vision Studies
B.Ed., Manitoba (Canada); M.S., North Dakota; Ph.D., George Peabody College of Vanderbilt

Wang, Xiaodan, 2011, Associate Professor of Management
B.A., International Business and Economics (Beijing, China); M.B.A., Ohio; Ph.D., Texas Tech

Wang, Xiaojun, 1997, Professor of Chinese
B.A., M.A., Northeast Normal (China); M.A., Ph.D., Arizona

Wang, Yuan-Kang, 2008, Associate Professor of Political Science and Public Affairs and Administration
B.A. National Chengchi University; M.A., Johns Hopkins; Ph.D., Chicago

Wanner, Kevin, 2004, Acting Chair and Associate Professor of Comparative Religion
B.A., Indiana University of Pennsylvania; M.A., Ph.D., Chicago

Wardrop, Daneen, 1990, Professor of English
B.S, Central Michigan; M.A., M.F.A., Western Michigan; Ph.D, Virginia

Warren, Wilson J., 2002, Professor and Chair, Department of History
B.A., St. Ambrose; M.A., Iowa; Ph.D. Pittsburgh

Webb, Allen, 1992, Professor of English
B.A., Swarthmore; M.A.T., Lewis and Clark; M.A., Ph.D., Oregon

Webber, Caroline, 2005, Assistant Professor of Family and Consumer Sciences
B.A., Kirkland College; B.S., California (Berkeley); M.P.H., Minnesota; Ph.D., Cornell

Weideman, Carol A., 2003, Faculty Specialist II, Human Performance and Health Education
B.S., Grand Valley State; M.Ed., Ph.D., Toledo

Wells, Lee, 2015, Assistant Professor of Industrial and Entrepreneurial Engineering & Engineering Management
B.S., M.S., Michigan Technological; Ph.D., Virginia Tech

Wertkin, Robert A., 1981, Professor of Interdisciplinary Health Programs
B.A., Washburn; M.S.W., Kansas; D.S.W., Utah

Wheeler, Mark V., 1990, Professor of Economics
B.A., Alma; M.A., Ph.D., Kentucky

White, Bob E., 1979, Professor of Industrial and Entrepreneurial Engineering & Engineering Management
B.S., M.S., Western Michigan; Ph.D., Iowa State; P.E.

White, Robert, 2014, Assistant Professor of Music
B.M., Western Michigan; M.M., D.M.A., Indiana

Whitehurst, Geoffrey, 2008, Associate Professor of Aviation Sciences
B.Sc., Queen Mary College (U.K.); M.A., Pjh.D., Western Michigan

Whitten, Elizabeth, 1994, Professor of Special Education and Literacy Studies
B.S., M.Ed., Eastern Illinois, Ph.D., Illinois

Wiebold, Jennipher L., 1999, Associate Professor of Blindness and Low Vision Studies and Counselor Education and Counseling Psychology
B.S., M.S., Minnesota (Mankato); Ph.D., Wisconsin (Madison)

Wielhouwer, Peter W., 2005, Associate Professor of Political Science
B.S., Heidelberg College; M.A., Ph.D., Georgia

Wilson, Brian C., 1996, Professor of Comparative Religion
B.S., Stanford; M.A., Monterey Institute of International Studies; M.A., Ph.D., California (Santa Barbara)

Wilson, Brian L., 1975, Professor of Music
B.M., M.M., Florida State

Wilson, Warren J., 2002, Professor and Chair of History
B.A., St. Ambrose; M.A., Iowa; Ph.D. Pittsburgh

Winfield, Evelyn B., 1999, Associate Professor of Physician Assistant
B.A., Dillard; M.A., Northern Iowa; Ph.D., Southern Illinois

Wirtz, Kristina, 2005, Professor of Spanish
B.A., M.S., Cornell; Ph.D., Pennsylvania

Witschi, Nicolas S., 2000, Associate Professor and Chair of English
B.F.A., Tisch School of the Arts, NYU; M.A., Colorado; Ph.D., Oregon

Wittenberg, Kelly, 2014, Associate Professor of Communication
B.A., Nevada (Reno); M.F.A., Syracuse

Wong, Bradley, 1983, Director and Professor of Music
B.M., M.M., Michigan

Wood, Jay, 2000, Professor of Mathematics

A.B., Notre Dame; M.A., Ph.D., California (Berkeley)

Wright Jr., Lester W., 1996, Associate Professor of Psychology
B.S., Florida International; M.S., Ph.D., Georgia

Xiong, Victor C., 1989, Professor of History
B.A., Beijing; M.S., Chinese Academy of Social Sciences; Ph.D., Australian National

Yaman, Devrim, 2000, Associate Dean, Haworth College of Business; Associate Professor of Finance and Commercial Law
B.S., Middle East Technical (Turkey); M.S., Lancaster (U.K.); M.A., Ph.D., New Orleans

Yang, Li, 2007, Assistant Professor of Geography
B.S., M.S., Yunnan (China); Ph.D. Waterloo (Canada)

Yang, Zijian, 2003, Professor of Computer Science
B.S., Science and Technology of China; M.S., Rice; Ph.D., Pennsylvania

Yao, Jian, 2014, Assistant Professor of Biological Sciences
B.S., M.S., Nanjing University (China); Ph.D., Wisconsin (Madison)

Yoshida, Takashi, 2002, Associate Professor of History
B.A., Aoyama Gakuin (Tokyo); B.A., Illinois (Chicago); M. Phil., Ph.D., Columbia

Young, Brian, 2009, Assistant Professor of Chemical and Paper Engineering
B.S., California (Davis); Ph.D., Wisconsin (Madison)

Yun, Zee-Sun, 2008, Associate Professor of Family and Consumer Sciences
B.S., Pusan National (South Korea); M.S., Ph.D., Michigan State

Zárate-Sández, German, 2015, Assistant Professor of Spanish
B.A., Universidad Nacional de San Juan; M.S., Scranton; M.S., Ph.D., Georgetown

Zhang, Ping, 1996, Professor of Mathematics
B.S., Wuhan; M.S., Jordan; Ph.D., Michigan State

Zhou, Huizhong, 1990, Professor of Economics
B.A., Fudan (China); M.S., Ph.D., Northwestern

Zhu, Laiyin, 2015, Assistant Professor of Geography
B.S., Nanjing Forestry University (China); M.S., Beijing Normal University (China); Ph.D., Texas A&M

Zhu, Qiji, 1994, Professor of Mathematics
B.E., Jilin University of Technology (China); M.S., Zhejiang (China); Ph.D., Northeastern

Ziebarth, Steven, 1997, Professor and Chair of Mathematics
B.S., Nebraska (Omaha); M.S., M.A., Lehigh; Ph.D., Iowa

Zinser, Richard W., 1998, Chair and Associate Professor of Family and Consumer Sciences
B.A., M.A., Oakland; M.A., Ed.D., Western Michigan

Zoeller, Linda H., 2008, Professor and Director, Bronson School of Nursing
B.S.N., M.P.H., Michigan; Ph.D., Illinois (Chicago)

Florida Administrators and Staff

Dr. Dawn M. Gaymer, Extended University Programs

Dr. Ed Martini, Extended University programs

Andrew Holmes, Extended University Programs

Dr. Earlie Washington, College of Health and Human Services

Captain David Powell, College of Aviation

Nicole Johnson, Extended University Programs

Dr. Chuck Pearson, Extended University Programs

Tara Gish, Extended University Programs

Bryon Glock, Extended University Programs

Sharon Van Dyken, College of Aviation

Dr. Ray Thompson, College of Aviation

Gil Sinclair, College of Aviation

Tom Thinnes, College of Aviation

Eric Epplett, College of Aviation

Russ Kavalhuna, College of Aviation

Bill Feenstra, College of Aviation

Florida Faculty

WMU – Punta Gorda, ID No.: 5598

Aller, Betsy M., 2001, Associate Professor of Engineering Design, Manufacturing, and Management Systems
B.A., M.S., Ph.D., Michigan Technological University

Balden, Blair, 1996, Associate Professor of Aviation Aciences
B.S., State of New York; M.A., West Virginia; J.D., Thomas A. Cooley

Broadwater, Tim, 2007, Faculty Specialist II, Aviation Specialist, Aviation Sciences
B.S., M.A., Western Michigan

Brown, Lori, 2006, Associate Professor of Aviation Sciences
B.Sc., Pacific Western; M.A., Melbourne (Australia)

Cousins, James P., 2011, Associate Dean, College of Arts and Sciences; Master Faculty Specialist, History

B.A., Ohio State; M.A., Ph.D., Kentucky

Covell, Stephen, 2003, Professor of Comparative Religion
B.A., California (San Diego); M.A., Hawaii (Manoa); Ph.D., Princeton

Edwards, Chad, 2005, Professor of Communication
B.A., M.A., Texas Tech; Ph.D., Kansas

Elliott, Mervyn, 1999, Master Faculty Specialist, Aviation Specialist, Aviation Sciences
B.Sc., London (U.K.); P.G.C.E., Cambridge (U.K.); M.A., Western Michigan

Ford, Leigh A., 1999, Professor and Director, School of Communication
B.S., Eastern Michigan; M.A., Western Michigan; Ph.D., Purdue

Gogan, Brian J., 2011, Associate Professor of English
B.A., Xavier; M.A., Marquette; Ph.D., Virginia Polytechnic Institute and State University

Heasley, Lynne, 2000, Associate Professor of History and Environment and Sustainability
B.S., Miami (Ohio); M.S., Ph.D., Wisconsin (Madison)

Homan, Willem, 1996, Professor of Aviation Sciences
B.S., M.T., Southeastern Oklahoma State; M.B.A., Arizona State; Ed.D., Northern Arizona

Kim, Seong-Hee, 1997, Adjunct Professor of Economics
B.A., Sookmyung Woman's University; B.A., Missouri State University

Korista, Kirk T., 1997, Professor and Chair, Department of Physics
B.S., Illinois (Urbana-Champaign); Ph.D., Ohio State

Kuchta, Todd, 2004, Associate Professor of English
B.A., M.A., John Carroll; Ph.D., Indiana

Martini, Edwin A., 2005, Associate Dean, Extended University Programs and Professor of History
B.S., Pitzer College; Ph.D., Maryland (College Park)

Meng, Lei, 2011, Associate Professor of Geography and Environment and Sustainability
B.S., Najing; M.S., China Agricultural; M.S., Illinois (Urbana-Champaign); Ph.D., Texas A & M

Michmerhuizen, Terrance, 2011, Associate Professor of Aviation Sciences
B.S., Le Tourneau; M.A., Nazareth College

Naranjo, Joshua, 1989, Professor of Statistics
B.S., M.S., Philippines; Ph.D., Pennsylvania State

Peterson, Stephanie M, 2009, Chair and Professor of Psychology
B.A., M.A., Ph.D., Iowa

Rouscher, Gail Y., 2008, Faculty Specialist II, Lecturer, Aviation Sciences
B.A., M.A., Spring Arbor

Ryan, Michael J., 2000, Professor of Economics
B.A., St. Norbert; M.A., Ph.D., Indiana

Seiler, Ryan, 1999, Faculty Specialist II, Aviation Specialist, Aviation Sciences
B.S., M.B.A., Western Michigan

Simpson, C. Dennis, 1978, Director, Alcohol and Drug Abuse Program and Professor of Physician Assistant
B.A., M.Ed., Ed.S., Louisville; Ed.D., Indiana

Sinclair, Gil, 1999, Master Faculty Specialist and Chair, Department of Aviation Sciences
B.Sc. Newcastle-upon-Tyne (U.K.); M.A., Western Michigan

Whitehurst, Geoffrey, 2008, Associate Professor of Aviation Sciences
B.Sc., Queen Mary College (U.K.); M.A., Ph.D., Western Michigan

Whittles, James, 2001, Master Faculty Specialist, Aviation Specialist, Aviation Sciences
B.S., Indiana State; M.A., Western Michigan

Williams, James A., Instructor of Aviation Sciences
B.S., United States Air Force Academy; M.B.A., Webster's University; Cert., M.I.T.

Ziebarth, Steven, 1997, Professor and Chair of Mathematics
B.S., Nebraska (Omaha); M.S., M.A., Lehigh; Ph.D., Iowa

WMU – Riverview, ID No.: 5599

Aller, Betsy M., 2001, Associate Professor of Engineering Design, Manufacturing, and Management Systems
B.A., M.S., Ph.D., Michigan Technological University

Butt, Steven E., 1997, Interim Chair and Professor of Engineering Design, Manufacturing, and Management Systems
B.A., Earlham; M.S., Ph.D., Pennsylvania State

Gupta, Tarun, 1988, Professor of Industrial and Entrepreneurial Engineering & Engineering Management; Engineering Design, Manufacturing, and Management Systems
B.S., India Institute of Technology, Banaras Hindu University; M.S., National Institute of Industrial Engineering (India); Ph.D., Wisconsin (Milwaukee)

Hains, Decker B., 2016, Master Faculty Specialist, Department of Civil and Constuction Engineering
B.S., United States Military Academy; M.S., Alaska (Anchorage); M.S., Missouri (Rolla); Ph.D., Lehigh

Houshyar, Abdolazim, 1988, Professor of Industrial and Entrepreneurial Engineering & Engineering Management
B.S., Shiraz (Iran); M.S., Ph.D., Florida

Lyth, David M., 1987, Professor of Engineering Design, Manufacturing, and Management Systems
B.S., Michigan Technological; M.S., Western Michigan; Ph.D. Michigan State; CQE

Mallak, Larry A., 1993, Professor of Engineering Design, Manufacturing, and Management Systems
B.S., Illinois (Urbana-Champaign); M.S., Ph.D., Virginia Polytechnic Institute

Wells, Lee, 2015, Assistant Professor of Industrial and Entrepreneurial Engineering & Engineering Management
B.S., M.S., Michigan Technological; Ph.D., Virginia Tech

White, Robert, 2014, Assistant Professor of Music
B.M., Western Michigan; M.M., D.M.A., Indiana