Western Michigan University Graduate Catalog 2004-2006

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2004-2006 Graduate Catalog
2004–2006
Academic Calendar

Fall Semester, 2004
August 30, Monday
Advising Day—Classes Begin at 4:00 p.m.
September 6, Monday
Labor Day Recess
November 24, Wednesday
Thanksgiving Recess Begins at Noon
November 29, Monday
Classes Resume
December 6–10
Final Examination Week
December 11, Saturday
Semester ends—Commencement

Spring Semester, 2005
January 3, Monday
Advising Day—Classes Begin at 4 p.m.
January 17, Monday
MLK Day Recess, Convocation and Activities
February 25, Friday
Spirit Day
February 28, Monday
Semester Recess
March 7, Monday
Classes Resume
April 18–22
Final Examination Week
April 23, Saturday
Semester ends—Commencement

Summer I, 2005
May 2, Monday
Classes Begin
May 30, Monday
Memorial Day Recess
June 22, Wednesday
Session Ends
June 25, Saturday
Commencement

Summer II, 2005
June 23, Wednesday
Classes Begin
July 4, Monday
Independence Day Recess
August 12, Friday
Session Ends—No Commencement
Exercises

Fall Semester, 2005
August 29, Monday
Advising Day; Classes Begin at 4:00 p.m.
September 5, Monday
Labor Day Recess
November 23, Wednesday
Thanksgiving Recess Begins at Noon
November 28, Monday
Classes Resume
December 5–9
Final Examination Week
December 10, Saturday
Commencement

Spring Semester, 2006
January 3, Tuesday
Advising Day; Classes Begin at 4:00 p.m.
January 16, Monday
MLK Day Recess, Convocation, and Activities
February 24, Friday
Spirit Day
February 27, Monday
Semester Recess
March 6, Monday
Classes Resume
April 17–21
Final Exam week
April 22, Saturday
Commencement

Summer I, 2006
May 1, Monday
Classes Begin
May 29, Monday
Memorial Day Recess
June 21, Wednesday
Session Ends
June 24, Saturday
Commencement

Summer II, 2006
June 22, Thursday
Classes Begin
July 4, Tuesday
Independence Day Recess
August 11, Friday
Session Ends—No Commencement
Exercises

NOTE: THIS ACADEMIC CALENDAR IS SUBJECT TO CHANGE WITHOUT NOTICE.

*Graduation Fee and Application Deadline
Fall Semester Graduation (December)
$45.00 Application Deadline: August 1
Spring Semester Graduation (April)
$45.00 Application Deadline: December 1
Summer I Graduation (June)
$45.00 Application Deadline: February 1
Summer II Graduation (August)
$45.00 Application Deadline: February 1
Western Michigan
University

2004 • 2006
Graduate Catalog
Kalamazoo, Michigan

The provisions of this catalog, any other catalog, policy, rules, codes, guidelines, or information issued by the University (collectively "requirements") shall not be considered to be a contractual or otherwise binding obligation of the University. Changes in administration and instruction may be made after the publication date of this catalog. The University reserves the right to withdraw, revoke, and/or cancel an admission decision for any reason, and at any time, it deems warranted. This right shall also apply in instances when the University acquires information about an applicant or student after an admission decision is made. The University reserves the right to change, delete, or add to requirements, procedures, and/or other provisions at any time without prior notice. Such changes may include, but not be limited to, modification or discontinuance of programs, as well as modification or discontinuance of specific courses. In the event such action is taken, students affected will be advised by their units of the options available to them to complete their degrees. The University will assist students in finding alternate ways to complete programs or course work. The University further reserves all rights regarding dismissals, suspensions, withdrawals, denials of requests or applications, cancellations or revocations of admissions, impositions of holds on records of students, and other administrative decisions, at all times.

Academic calendars are subject to change without notice.

Western Michigan University retains the right to rescind any WMU degree which was obtained improperly, including but not limited to, as a result of misrepresentations, incomplete or false information, and/or in violation of University requirements. Before making any final decision to rescind a degree, however, the University will afford the student an opportunity to be heard in accordance with University requirements in effect at the time of the discovery of the alleged offense.

Becoming a student at Western Michigan University signifies the student's agreement to comply with all requirements of the University whenever approved.

ABOUT WESTERN MICHIGAN UNIVERSITY
Location
Western Michigan University is a state-assisted, co-educational institution located in Kalamazoo, midway between Chicago and Detroit. Three major highways, Amtrak, commercial airlines, and numerous bus routes connect the city with other midwestern cities. The population of Kalamazoo is 81,000. Kalamazoo County has a population of 283,000.

Founded
1903

President
Judith Bailey, Ed.D.

Academic Divisions
College of Arts and Sciences
College of Aviation
Haworth College of Business
College of Education
College of Engineering and Applied Sciences
College of Fine Arts
College of Health and Human Services
Extended University Programs
The Graduate College
The Honors College

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

Accreditation
Western Michigan University is accredited by the Higher Learning Commission of the North Central Association of Colleges and Schools, 30 North LaSalle Street, Suite 2400, Chicago, IL, 60602-2504; telephone 800-621-7440.
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MISSION OF THE UNIVERSITY

MISSION
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

GOALS
Western Michigan University's mission is characterized by its pursuit of the following institutional goals:

• To foster a safe, civil, and healthy University community
• To provide access to academic programs at reasonable cost and in multiple settings
• To strengthen interdisciplinary collaboration and international programs
• To increase diversity within the student body, faculty, and staff through institutional practices and programs
• To recognize excellence in the teaching, research, learning, creative work, scholarship, and service contributions of students, faculty, and staff
• To conduct ongoing assessment activities and engage in continuous improvement initiatives within the University
• To establish life-long relationships between alumni and the University
• To advance responsible environmental stewardship
• To support community and regional partnerships that elevate civic, cultural, social, and economic life

Approved by Western Michigan University’s Board of Trustees, December 7, 2001
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, and a person planning to elect the processing of an application, 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 should obtain information and application materials by mail from the Office of Admissions and Orientation, Western Michigan University, Kalamazoo, Michigan 49008-5120 or by EMAIL (ask-wmu@wmich.edu) or by completing the admission application available online on the Western Michigan University web page (http://www.wmich.edu/admi/gradapp/). Potential applicants on non-immigrant or temporary visas should request information and application materials by mail from the Office of International Student and Scholar Services, A411 Ellsworth Hall, Western Michigan University, Kalamazoo, Michigan 49008-5245 or by FAX (616) 387-5899 or may download the materials from the Office's web page (http://www.wmich.edu/oiss).

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

Applicants who are U.S. citizens and those who have an I-551 immigrant Visa wish to apply to a graduate degree program by following the applicant-managed process described below.

1. Request a Graduate Self-Managed Application from the Office of Admissions and Orientation. NOTE: Since most graduate programs require materials in addition to the Graduate Self-Managed Application, applicants are advised to contact the relevant department office or program advisor for such materials. [Alternatively, access the web pages (http://www.wmich.edu/oiss) of the Office of International Student Services to download the application form and instructions for its completion and submission.]

2. Follow exactly the instructions describing the application procedures and submit all supplemental materials, including the Statement of Finances form and documentation of proficiency in English.

Statement of Finances: F-1 and J-1 potential or current visa holders must submit a Statement of Finances form and provide proof that they have sufficient financial resources to cover the educational and living expenses incurred by a typical non-resident graduate student.

Documentation of English Proficiency: When English is not the official language of the country in which the applicant was educated, the applicant is required to demonstrate proficiency in English. The following tests and scores are accepted at Western Michigan University as measures of English language proficiency. Some graduate programs require a higher score:

- Test of English as a Foreign Language (TOEFL). A score of 500 (173 CBT) is required for restricted enrollment (part-time English study and part-time academics during the first semester) or 550 (213) for unrestricted enrollment.
- Michigan English Language Assessment Battery (MELAB). A score of 75 is required for restricted enrollment or 85 for unrestricted enrollment.
- 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, is required for unrestricted enrollment.
- International English Language Testing System (IELTS) using Modules A, B, or C (not the General Training Module). A score of 6.5 is required for restricted enrollment or 7.0 for unrestricted enrollment.
- International Baccalaureate. A grade of 5 in English at the Higher Level is required for unrestricted enrollment.
- The College Board's English Language Proficiency Test (ELPT). A score of 950 is required for restricted enrollment or 965 for unrestricted enrollment.
- Successful completion of the advanced level and instructor recommendations from CELGIS, WMU's Career Language Center for International Students.

Degree Program Applicant, Non-immigrant or Temporary Visa

Applicants on non-immigrant or temporary visas who seek admission to a graduate program will follow the steps described below.

1. Request an International Student Application Form from the Office of International Student Services. NOTE: Since most graduate programs require materials in addition to the International Student Application Form, applicants are advised to contact the relevant department office or program advisor for such materials. [Alternatively, access the web pages (http://www.wmich.edu/oiss) of the Office of International Student Services to download the application form and instructions for its completion and submission.]

2. Follow exactly the instructions describing the application procedures and submit all supplemental materials, including the Statement of Finances form and documentation of proficiency in English.

- Test of English as a Foreign Language (TOEFL). A score of 500 (173 CBT) is required for restricted enrollment (part-time English study and part-time academics during the first semester) or 550 (213) for unrestricted enrollment.
- Michigan English Language Assessment Battery (MELAB). A score of 75 is required for restricted enrollment or 85 for unrestricted enrollment.
- 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, is required for unrestricted enrollment.
- International English Language Testing System (IELTS) using Modules A, B, or C (not the General Training Module). A score of 6.5 is required for restricted enrollment or 7.0 for unrestricted enrollment.
- International Baccalaureate. A grade of 5 in English at the Higher Level is required for unrestricted enrollment.
- The College Board's English Language Proficiency Test (ELPT). A score of 950 is required for restricted enrollment or 965 for unrestricted enrollment.
- Successful completion of the advanced level and instructor recommendations from CELGIS, WMU's Career Language Center for International Students.
Materials to be submitted to the Office of International Student Services: The International Student Application Form; a $100 non-refundable document and application fee payable to Western Michigan University; the Statement of Finances form and proof of sufficient financial resources; complete and official transcripts of post-secondary studies listing course titles and grades (marks) received for each, as well as certificates, diplomas, or degrees earned, translated into English; proof of English language proficiency (see acceptable proofs listed above). If also required for admission, have official entrance test scores (such as the GRE or GMAT) sent to WMU by the testing agency.

Materials to be submitted directly to the graduate department: If additional, supplemental materials are required by a department, these may also need to be submitted directly to that department. Request the department to provide these materials, and then complete and submit the materials exactly as their instructions require.

Applications for admission from non-U.S. citizens who do not have an Alien Registration Card or I-551 Immigrant Visa should be submitted no later than March 1 for the Fall Semester, August 1 for the Spring Semester, and January 1 for the Summer I or II Sessions. Many programs, however, have earlier deadline dates, and not all programs admit students for all semesters or sessions. Applicants are advised to read the program's admission requirements section in this catalog or contact the relevant program office to learn the application deadline date and other information for a specific program. It is advisable to apply well before the application deadline, because admission to some programs may close early as openings are filled or because a program's complement of available assistantships and fellowships may be assigned as the earlier application deadlines for these awards pass. Also, some programs require the results of entrance examinations which are scheduled in advance of the application deadlines, and some require interviews or other means of correspondence that necessitate a good bit of time between the receipt of the application and the admission decision.

WMU Faculty Applicant

All Western Michigan University faculty and staff are eligible for admission to masters 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.

Nondegree Applicant, Graduate Certificate Program

An applicant with a bachelor's degree who wishes to gain admission to a graduate certificate program should submit an application to the Office of Admissions and Orientation, along with a non-refundable application fee of $55, payable to Western Michigan University, and two official transcripts from each institution attended since high school. Additional, supplemental admissions materials required by the certificate program may also need to be submitted directly to the certificate program office. Request the certificate program office to provide these materials, and then complete and submit the materials exactly as the instructions require.

Guest Applicant (GST), Permission to Take Graduate Classes

An applicant with a bachelor's degree who wishes to enroll in graduate courses, but does not plan to pursue a degree program or is not eligible for admission to a degree program, may enroll in certain classes with Guest (GST) status, permission to Take Graduate Classes. This status also is granted to a guest or visiting student from another university. Guest 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 application for admission to the Office of Admissions and Orientation, along with a non-refundable application fee of $25. Applicants who did not receive a degree from WMU must send proof of their undergraduate degree when submitting the application. The following credentials (photocopies are permissible) indicate an official transcript, diploma, teaching certificate, or letter from the registrar of the undergraduate institution. Applications will not be processed without the accompanying credential.

ADMISSION REQUIREMENTS

All applicants are expected to meet the same academic standards considered 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.

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 certificates or credentials (such as a teaching certificate). For more specific information on each program, read the admission requirements sections 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. Two official transcripts from each institution attended since high school.
3. Evidence of having met any additional admission requirements stipulated by the individual degree program.
4. Acceptance by the academic unit offering the master's program and endorsement of the acceptance by the graduate dean.

Additionally, a student's academic performance, professional development, research progress, and, where applicable, professional or official 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 assess the student's measurable progress toward completion of the program of study and in providing documentation for awards or assistantships or, if deficiencies are apparent, will suggest 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 sections 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. Two official transcripts from each institution attended since high school.
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.
NONDEGREE ADMISSION TYPES, GRADUATE LEVEL

Guest (GST)

Permission to take graduate classes is granted to a Guest student (GST) with a bachelor's degree who wishes to enroll in certain courses, but does not plan to pursue a program leading to a graduate degree, or is not eligible for degree admission. This guest status also is granted to a visiting student from another university. GST 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. For the student seeking admission, a maximum of nine credits taken under GST status may be considered in a degree program if the student should later decide to apply for admission to a degree program and if an advisor and the graduate dean approve the credit.

Senior Citizen (SCOPE Program)
The Senior Citizens' Opportunity Program in Education (SCOPE) Program offers persons age 62 or older the opportunity to register for one regularly scheduled class each semester/session tuition free. Participants will be assessed all special class fees, Special contract courses, such as Distance Learning, are not available tuition free. Enrollment in courses is on a seat available basis and participants may not register for credit.

Anyone interested in participating in the SCOPE program should contact the Office of Admission and Orientation and request an application form. Regular, degree-seeking admission is not extended to participants of SCOPE. Questions regarding SCOPE participation should be directed to the Registrar's Office (387-4310). For additional information regarding dates and deadlines for registration for SCOPE participants, consult the Schedule of Course Offerings.

Michigan Intercollégiate Graduate Studies (MIGS)
The MIGS admissions category is a guest scholar program which enables graduate students of Michigan institutions to participate in doctorate or federal certification programs to take advantage of unique educational opportunities on the campuses of the other institutions. Any graduate student who has met the requirements for admission to a master's or specialist degree 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 faculty 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.

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.

All credit earned under the 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's GPA 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.
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."

ACTIVE ADMISSION STATUS

An applicant admitted to a graduate degree or graduate certificate program or to Guest (GST) status retains Active Admission Status for two years from the time of admission, as well as for one year from the date of the last enrollment as a graduate student at Western Michigan University.

If a student never enrolls during the two years following the effective admission date, the student's admission status is canceled and thereafter the student must submit an entirely new application and be formally admitted again before registration may occur. An enrolled student who has not registered for more than one year must complete and have approved a Readmission Application before registration may occur.
TUITION AND FEES

FEES and costs identified in this catalog pertain to the 2004-2005 academic year, except as noted, and are subject to change without notice by action of the Board of Trustees. Questions concerning current fee schedules should be directed to the Office of the Director of Accounting Services.

TUITION

Student tuition fees are assessed on a credit hour basis. Fees per credit hour for 2004–2005 are listed below; these fees are subject to change without notice by action of the Board of Trustees.

Resident Graduate, $265.80
Non-Resident Graduate, $599.00
Extended University Programs, All Graduates, $345.80

Resident: See the Residency Policy section directly below for definition.
Non-Resident: See the Residency Policy section directly below for definition.

Residency Policy of Western Michigan University

The governing board at each university in Michigan has the authority to establish a residency policy/guidelines for admissions and/or fee purposes. Therefore, residency policies (guidelines) may vary from school to school and are independent of those used by other state authorities to determine residency for purposes such as income and property tax liability, driving and voting.

The policy which follows was approved by the Western Michigan University Board of Trustees effective with the Fall Semester, 2001. This policy applies to all students (undergraduate and graduate) at WMU. The Office of the Assistant Vice President for Business administers this policy. Information on this policy is available through the University's web site. Additionally you may contact the Office of the Assistant Vice President for Business directly at 3060 Seidel Administration Building, Western Michigan University, Kalamazoo, MI 49088, or call (616) 387-2386 for additional information or to request an application form.

Residency Policy for University Admissions and/or Fee Purposes

Any student may apply for in-state resident classification for any semester/session in which they are enrolled by completing the application for Residency Classification for University Admissions and/or Fee Purposes as submitted to the Office of the Assistant Vice President for Business.

Application can be filed as early as one month prior to the start of each semester/session but not later than 20 calendar days following the first day of classes for the fall and winter semesters (10 calendar days for the spring and summer sessions). The deadline dates are the same for all students (undergraduate and graduate).

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

2. “Domicile” is defined as the place where an individual's true, fixed and permanent home and principal establishment is and to which the individual returns whenever he/she is absent from the University. A student shall not be considered domiciled in Michigan unless 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 classification is sought and intends to make Michigan his/her permanent home, not only while in attendance at the University but thereafter as well, and has no domicile elsewhere.

3. Dependent Student: For tuition classification purposes, a student is presumed to be a dependent of the student's natural parents and/or legal guardian if the student is 24 years of age or younger and (a) has been involved primarily in educational pursuits, or (b) has been entirely financially self-supporting through employment.

a. Dependent Student-Parent(s) in Michigan

The domicile of a dependent student is presumed to be the same as that of the student's natural parents. A dependent student whose parents are, according to University Residency Policy, domiciled in Michigan is presumed to be eligible for resident classification for University purposes 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.

A dependent student with one parent domiciled in Michigan regardless of whether that parent is the student's custodial parent, is presumed to be eligible for resident classification for tuition-paying purposes if the dependent student is, according to University Residency Policy, domiciled in Michigan.

The domicile of a dependent student's legal guardian(s) will be presumed to have the same evidentiary effect as that of a dependent student's natural 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 shall not qualify as complete incapacity.

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

b. Dependent Student-Parent(s) Not in Michigan

A dependent student whose parents are domiciled outside the State of Michigan is presumed to be a non-resident for tuition-paying purposes at Western Michigan University.

4. Independent Student: A student may be granted in-state residency for tuition-paying purposes, once the student provides evidence of 12 consecutive months (one year) of physical presence in the State of Michigan immediately preceding the first day of classes of the term in which the student is applying for a change in status. The year of continuous presence is never the only criterion used for determining in-state classification and, in itself, will not qualify a student for in-state status for tuition-paying purposes at WMU.

5. Residence of Spouses: 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 student for tuition-paying purposes.

6. Immigrants and Aliens: Only persons who are entitled to reside permanently in the United States may be eligible for resident classification at Western Michigan University. These individuals, like U.S. citizens, must still prove that they have established a Michigan domicile as defined in these regulations. In other words, having the privilege of remaining permanently in the United States, in itself, does not entitle a person to resident classification for University fee purposes. At the present time, non-citizens who are entitled to reside permanently in the United States include:

a. Permanent Resident Alien must be fully processed and possess Permanent Resident Alien card or stamp in passport verifying final approval by filing deadline for applicable term.

b. Refugees must have I-94 card with "Refugee" designation.

c. A, E, G, O, and I visa holders: Based upon current law, these non-immigrant visa classifications are the only ones that permit the visa holder to establish a domicile in the United States. As changes occur in applicable law, this list shall be updated.

7. 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 the
three (3) of the five (5) years prior to the date of the proposed in-state classification or for
any semester/session in which they are enrolled. The deadline dates for filing the Application for
Residency appeal shall be the final recourse within the University.

The Student's Responsibility and the Residency Application Process
While circumstances for each applicant are unique, the following information is designed to be a
reference for students who are interested in applying for resident classification for tuition-pay-
ing purposes at Western Michigan University (WMU). The fact that a student may qualify for
resident status at another college or university in the State of Michigan or that the student may be
considered a resident by other laws or regulations within the State of Michigan is not used in deter-
mining resident status for tuition-paying purposes at WMU.

Required Documentation
When filing an Application for Resident Classification for University Admissions and/or Fee Pur-
poses, the following documentation must be included with the application:
• Applicants must provide a copy of a valid driver's license for their self and of the person
  or persons upon whom the applicant is basing the claim to resident eligibility
• All applicants must provide copies of the front and signature pages of the most recent year's
  federal and state income tax returns and accompanying W2s for the applicant and the
  person or persons upon whom the applicant is basing the claim to resident eligibility
• All applicants who are born outside of the United States must provide verification of
  United States citizenship or provide a written notice of appeal to the University. The
  admissions office performs the initial screening for in-state/out-of-state residency clas-
sification. If a student indicates Michigan resident on the admissions application and the admissions
  office questions the status, the student will be classified as a non-resident student. The fact
  that the student's claim to resident status for tuition-paying purposes is questioned does not necessarily
  mean that the student will be ineligible. It simply means that the student's circumstances must be
documented by submitting an Application for Resident Classification for University Admission and/or Fee
  Purposes. A student who has an out-of-state classification at the time of admission but claims eligibility
  for resident classification, must file an Application for Resident Classification for University Admission and/or Fee
  Purposes for an official determination of status if any of the following circumstances apply:
• The student is living out of the State of Michi-
  gan for the first time
• Either parent is living out of the state of Michi-
  gan (applies if the student is 24 years of age or
  younger and is a dependent student)
• The student has attended or graduated from
  a Michigan high school and has been involved in educational pursuits for the majority
  of time since graduation from high school
• The student has had out-of-state employment or
  domicile within the last 3 years

Please Note: The above list is not exhaustive.
Before a student is granted residency status for University Admissions and/or Fee Purposes, the
University will require the student to have continuously resided in Michigan for one year immediately
preceding the first day of classes of the term in which the student is applying for in-state classification. If the student presents clear and
convincing evidence which demonstrates the establishment of a Michigan domicile, the student
will be eligible for in-state classification.

Establishing a Michigan Domicile
The following circumstances and activities which may demonstrate Michigan domicile, though not
conclusive or conclusive in themselves, may be considered in support of a claim to eligibility for in-state classification. This is not an exhaustive list:
• In the case of a dependent student, at least one
  parent domiciled in Michigan, as demon-
  strated by the parent's permanent employ-
  ment, establishment of a household and
  seke
  rence of out-of-state ties.

• Student employed or enrolled in a full-time,
  permanent job, provided that the student's
  employment is the primary purpose for the
  student's presence in Michigan.

• Student's spouse employed in Michigan in a
  full-time, permanent job, provided that the
  spouse's employment is the primary purpose
  for the student's presence in Michigan.

The following circumstances and activities listed below are temporary or indefinite and, in and
of themselves, do not demonstrate domicile in Michigan:
• Enrollment in a Michigan high school, com-
munity college or university
• Employment in Michigan that is temporary or
  short-term
• Employment in Michigan in a position normally
  held by a student
• Military assignment in Michigan
• Payment of Michigan income or property taxes
• Ownership of property in Michigan
• Presence of relative in Michigan (other than
  parent(s) for dependent student)
• Possession of a Michigan driver's license or
  voter's registration
• A student's statement of intent to be domiciled
  in Michigan.

In cases where it is determined that a student has not demonstrated establishment of a domicile in
Michigan as defined by this policy, the University will require the student to document one year of
continuous physical presence in the state. The student's presence will be based on the student's
residency classification. If the student presents clear and convincing evidence which demonstrates the
student's presence in Michigan. Absence from Michigan that exceed the time mentioned above or failure to document 12 consecutive months of physical presence will be considered as noncompliance

Filing Dates/Deadline
Students may apply for resident classification for any semester/session in which they are enrolled. Applications must be filed not later than 20
calendar days following the first day of classes for the Fall and Spring semesters (10 calendar days for the Summer I and Summer II sessions). The
deadline dates for filing the Application for Resi-
dent Classification for University Admission and/or Fee Purposes are subject to the student's
eligibility classification. If the deadline falls on a weekend, holiday or closure day, it will be extended to the next business day.

(Note: Applications must be received in the Office of the Assistant Vice President for Business
by the filing deadline. Applicants who do not file by the deadline will be responsible for paying tuition at the non-resident rate. Exceptions will not be granted.)

Incomplete information (supporting documen-
tion) and/or absence of dates (month/day/year)
in the application or the "Application for Resi-
dent Classification for University Admission and/or Fee Purposes" or any other document rel-
ant to residency eligibility may be subject to
disciplinary and/or legal measures.

Misrepresentation and Falsification of Information:
Students who provide false or misleading informa-
tion or who intentionally or unintentionally omit relevant information on their admissions
application or the "Application for Resident Classification for University Admission and/or Fee Pur-
poses" or any other document relevant to residency eligibility may be subject to
disciplinary and/or legal measures.
Auditing Courses, Tuition for Students who audit courses (who register for classes but do not desire credit) are governed by classes prior to the late fee assessment date and wish to process drops/adds, should add classes before processing drops to avoid being assessed the fee.

Liability Insurance Fee Students enrolled in courses requiring participation off-campus for field experience or practicums will be charged a liability insurance fee. This fee will be assessed one time per year, fall semester through summer II 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 registered for four or more credit hours. 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.

Student Activity Fee A student assessment fee (SAF) of $12.00 per semester (Fall and Spring) and $6.00 per session (Summer I and Summer II) will be collected from all graduate and undergraduate 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.

Transcript Fee One unofficial transcript per semester or session may be obtained in the Registrar's Office without cost. An unofficial or official transcript sent via regular mail is $5.00; an unofficial transcript fixed and then followed by an official transcript sent via regular mail is $10.00. The transcript will be released only upon written authorization of the student and only after payment is made.

TUITION AND FEE PAYMENT FOR GRADUATE APPOINTEES Graduate appointees (i.e., those holding assistantships, associations, 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.
REGISTRATION

Registration is conducted by telephone (616-333-1500) and over the web (www.wmich.edu/registrar) at Western Michigan University according to the schedule and procedures given in the Schedule of Course Offerings which is published prior to each semester and session and is available in the Registrar’s Office, in advising offices, and on the WMU web site. The Schedule of Course Offerings should be consulted for details regarding the time and place of graduate classes, credit types and levels for courses, course prerequisites, procedures and regulations regarding the adding or dropping of courses, tuition and fee schedules and their methods of payment, final examination week schedules, names and telephone numbers of departments and advisors, and all the University regulations that affect the registration process. Registration by students signifies an agreement to comply with all regulations of the University whenever approved by the University.

Course Numbers and Graduate Credit

To receive graduate credit, graduate students will register for courses offered at the 500-, 600-, or 700-level. Courses numbered 600 and above are open only to graduate students; courses numbered 500 through 599 are open to both graduate students and advanced undergraduate students who meet the course prerequisites. Graduate students enrolling in courses at the 500-level or higher will receive graduate credit.

All 700-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, nor for Self-Instructional Courses offered by the Department of Distance Education, regardless of course number.

Adding or 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 in the Schedule of Course Offerings. 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. See the Schedule of Course Offerings for details of this procedure.

Students may withdraw (drop) classes during the five-day Drop/Add period (see the Schedule of Course Offerings) 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).

Dropping Classes and Withdrawing from All Classes

Students may drop a course or withdraw from all courses without academic penalty through the Monday of the tenth week of classes in the fall and spring semesters and through the Monday of the fifth week of the summer I and summer II sessions. A non-punitive "W" will be reflected on the student’s academic record for any classes dropped after the drop/add period and before the withdrawal deadline. The final date for withdrawing is published in the Schedule of Course Offerings. Students may not withdraw from any class after this date without academic penalty.

Each student is encouraged to confer with the instructor before withdrawing from a class as the student may not re-register for the class.

Students who wish to drop a course or withdraw from all classes typically after the Monday of the tenth week of classes in the fall and spring semesters and through the Monday of the fifth week of the summer I and summer II sessions because of genuine hardship (i.e., illness, death in the immediate family), must be passing the course and must file a written appeal on forms which may be obtained from the Registrar’s Office.

If a student wishes to withdraw from some but not all classes, s/he must obtain the approval of the instructor of record for each course to be dropped. If the student wishes to withdraw from all classes, s/he must obtain the approval of the academic advisor and a financial aid advisor.

An Appeals Committee to review late withdrawals will be appointed by the Provost and Vice President for Academic Affairs. The Appeals Committee may request information from the instructors involved and from other appropriate sources.

The Registrar’s Office will record the drop or withdrawal if it has approvals as listed above. If the semester has ended, the student must request a grade change to "W" through the Grade Appeal Process.

Graduate Leave of Absence

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. Extensions of a leave of absence may be possible with a new application. Reasons for requesting 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.

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 Student and Scholar 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, associationhip, 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.

Registration in Master's Thesis, Specialist Project, Doctoral Dissertation

A student who intends to register for the Master's Thesis (700), Specialist Project (720), or Doctoral Dissertation (730) 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.
Registration for Continuous Enrollment in Master’s Thesis, Specialist Project, Doctoral Dissertation

Following a student’s first enrollment in the Master’s Thesis (700), Specialist Project (720), or Dissertation (730), the student must have completed 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 entering in the summer I or 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 as 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 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 assuming compliance with the regulations for the protection of such subjects or for the use of such materials. There are no exceptions to this requirement. Registration for courses in which research is conducted that requires such prior approval cannot be attempted until the approval is granted by the appropriate University board. 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 as an appendix to the thesis, project, or dissertation. 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 as an addendum to the report, paper, or project. For more information, call the Office of the Vice President for Research, 387-8266.

RECORDS

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.” 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 which 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 Records Office, and used to audit the student’s eligibility for the degree.

Identification Card

Each student on campus is required to have an identification card, which includes photo, name, and student signature. Dates, times, and locations of card production are determined and announced by the Department of Public Safety. Each new student is eligible for an identification card free of charge, although if the card is not obtained during the first semester of attendance after admission, a $20.00 fee will be charged for its production in any subsequent semester. A $20.00 fee is also charged for replacing a lost or damaged card. The card is valid throughout the student’s entire enrollment at Western Michigan University. Lending the card to another or failure to present it when requested by University officials is a violation of University regulations and subjects the holder to disciplinary action. Students are personally liable for all obligations incurred by the use of their identification cards.

Name Change

Students may maintain academic records under the name used at the time of admission. However, students with active admission status desiring to make an official name change may go to the Registrar’s Office to request the change. Legal proof must be required and the student will be required to sign a notarized affidavit swearing to the fact the name change is not requested for any fraudulent purpose.

Transcript

A student’s permanent academic record or transcript is a document listing, at minimum, all courses taken and credit hours and grades earned in the courses. All students desiring a transcript of academic records at Western Michigan University should write, fax, or visit the Office of the Registrar, giving dates of attendance and, if a graduate, the date of graduation. All names under which the student may have been enrolled and a student identification number should be provided. An official or unofficial transcript sent via regular mail is $5.00; an unofficial transcript faxed and then followed by an official transcript sent via regular mail is $10.00. The transcript will be released only upon written authorization of the student and only after payment is made.

ACADEMIC REGULATIONS

Academic Standards

All graduate students, PTG and degree candidates, must earn a degree program grade point average of at least 3.0 to satisfy University requirements. An overall grade point average (GPA) will be included as part of the student transcript. The academic standards policy is intended to encourage satisfactory progress toward that end. 1. Good Standing: A graduate student is in good standing whenever that student’s degree 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 for one semester. 4. Continued on Probation: If the degree program grade point average increases .01 or better during the semester of Probation, the student will be Continued on Probation status for the next enrollment period. During the semester of Probation status, the student will continue to satisfy the academic department housing the student’s program.

Grade Definition Per Credit Hour

<table>
<thead>
<tr>
<th>Grade</th>
<th>Definition</th>
<th>Honor Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Outstanding</td>
<td>4.0</td>
</tr>
<tr>
<td>B</td>
<td>Exceptional</td>
<td>3.5</td>
</tr>
<tr>
<td>C</td>
<td>Very good</td>
<td>3.0</td>
</tr>
<tr>
<td>D</td>
<td>2.0</td>
<td></td>
</tr>
<tr>
<td>DC</td>
<td>1.5</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>1.0</td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>Failing</td>
<td>0.0</td>
</tr>
<tr>
<td>X</td>
<td>(Failure)</td>
<td></td>
</tr>
<tr>
<td>W</td>
<td>Official Withdrawal</td>
<td>0.0</td>
</tr>
<tr>
<td>I</td>
<td>Incomplete</td>
<td></td>
</tr>
<tr>
<td>W</td>
<td>Official Withdrawal</td>
<td>0.0</td>
</tr>
<tr>
<td>CR</td>
<td>Credit</td>
<td></td>
</tr>
<tr>
<td>NC</td>
<td>No-Credit</td>
<td></td>
</tr>
<tr>
<td>AUD</td>
<td>Audit</td>
<td></td>
</tr>
</tbody>
</table>

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 circumstances 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 before the student may withdraw from the course or from the University before the final withdrawal date in the semester or session specified in the Schedule of Course Offerings.

OR or NC—Credit or No Credit: The Credit/No Credit grading system is used in all 700-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, B, or C; "NC" when incomplete and "NC" when the grade received is a D, E, or X.

AUD—Audit: The symbol "AUD" 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 the examination, earn credit hours for the registration, and pay 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 course has begun.

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 the dean, establish a procedure for granting credit by examination for any course numbered 500 through 699. All credit by examination is subject to the following regulations:

1. The academic unit which offers a graduate program is responsible if an examination is given. Examinations may be used to obtain credit for a particular 500- or 600-level course in that academic unit.
2. All written examinations will be administered and graded by 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 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 may 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, $95.00; 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 latter 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.

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 Student Status
For all graduate students taking courses for a stated degree or certificate program, six hours constitutes full-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.

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 credit in any semester, alternating between 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. Additional 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 or honor points.

Academic Regulations
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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 more deeply than is possible in a regular course, to obtain an educational experience outside that normally offered by a regular course.

Since independent 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 accepted consistently throughout the University.

The following policy guidelines are intended to serve that function.

Proposals for Independent Study
Independent Study projects require 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 contact, 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 to 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 departmental 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.

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 repeated and no course may be repeated more than once during the student's academic career (inclusive of both master's and doctoral programs) at WMU. This number may be further limited by...
Role and Composition of Thesis Committee, Project Committee, and Dissertation Committee

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 duties: a) advise the student on the 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, Projects, and Dissertations.

Each thesis committee shall consist of a minimum of three members or associate members of the graduate faculty of Western Michigan University. 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 member, 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 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.

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 dissertation. 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

For each doctoral student a doctoral dissertation committee shall be appointed to review the dissertation proposal, procedures, and results; to make suggestions relative to these concerns 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 another academic 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 dissertation committee shall be appointed 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.

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.

Each unit offering a doctoral degree program must 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.

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 dissertation committee if the case merits it.

Electronic Thesis and Dissertation (ETD) Program

The Electronic Thesis and Dissertation (ETD) program, managed by The Graduate College, has been adopted as a permanent program at WMU. ETDs are optional for all on-campus and branch campus graduate students.
Benefits

The ETD program benefits the University by showcasing the contributions of our students. It benefits the disciplines by making the most current research readily available on the Internet. It benefits the students by preparing them for future electronic submission to journals and conferences as well as providing them a vehicle for sharing their research with potential employers. The ETD process also enables students to add multimedia files and other features to the manuscript, allowing for a more creative and advanced expression of the material in the thesis, project, or dissertation.

Proprietary Rights

Students retain all proprietary rights, such as copyright and patent rights, to the thesis, project, or dissertation. Students also retain the right to use all or part of the thesis, project, or dissertation in future publications.

Accessibility Options

There are several accessibility options. Students may choose to make the manuscript immediately available worldwide on the Internet, allow restricted access to only the WMU campus network for a period of one year, or withhold all access for patent and/or proprietary purposes for a period of one year. Students may also choose to make some files accessible while restricting access to others. The student should consult with faculty to determine the appropriate accessibility option, and to determine which journals consider posting of a thesis or dissertation to a website as a prior publication. The default accessibility option is "restricted access" for all submissions unless the student chooses another option. Restricted access is removed after one year unless the graduate or his/her advisor request its continuation. The graduate or his/her advisor may restrict access indefinitely on a yearly basis.

ETD Creation

After a thesis, project, or dissertation is formatted according to the standards in the Guidelines for the Preparation of Theses, Specialist Projects, and Dissertations, it is converted from the original document into a Portable Document Format (PDF) file. The Graduate College offers periodic workshops on the process, including conversion of electronic files to PDF. Multimedia files and special features may also be added to the document. Where appropriate, departments will assist students with embedding various media files into their ETDs.

ETD Submission and Storage

The ETD submission process is very similar to the paper thesis, project, or dissertation submission process. Instead of submitting a paper copy of the committee-approved manuscript to The Graduate College for final review and approval, the PDF file will be submitted directly to the ETD server. Approval forms, research protocol approval letters, and any other signed documents will be submitted separately to The Graduate College to be filed for additional security. ETDs will be electronically cataloged and available through a link from the ETD site and accessible from the University Libraries online catalog at the access level chosen by the student. Long-term preservation of dissertations will be maintained by continued submission of the manuscripts to Bell and Howell (University Microfilms, Inc.). Students also have the option to submit a paper copy of the final thesis, project, or dissertation for deposit with the University Libraries.

Transfer Credit

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.

Master's Program

A student enrolled in a master's program must complete a minimum of 24 semester hours at Western Michigan University. 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 schools provided:

1. The credits were earned in 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 a six-year period prior to graduation from Western Michigan University, is represented on an official transcript of the other university, 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.

Second Master's Program

A student enrolled for a second master's degree from Western Michigan University must complete a minimum of 24 additional semester hours at Western Michigan University. Any credits transferred internally into the second master's program may not exceed sixteen semester credit hours.

Specialist Program

A student with a master's degree from another university 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.

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 the 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 the doctoral program, however, may be approved by the doctoral program advisor and included in the student's Graduate Student Permanent Program of Study.

Undergraduate Credit in a Graduate Program

In certain instances, an advisor may permit a student to include up to six semester hours of 300- or 400-level courses in a graduate program, provided the student receives written permission from the advisor, the department chair, and the graduate dean 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. Undergraduate tuition is charged for these courses.
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 apply for graduation by submitting the form Application for Graduation Audit and an application fee ($45.00). The application form may be obtained from the Registrar's Office on the third floor of the Seibert Administration Building or on the Internet at www.wmich.edu/registrar/auditform.htm.

Doctoral students should apply at least two semesters prior to intended graduation date.

Graduation Fee and Application Deadline

Fall Semester Graduation (December) $45.00 Application Deadline: August 1
Spring Semester Graduation (April) $45.00 Application Deadline: December 1
Summer I Session Graduation (June) $45.00 Application Deadline: February 1
Summer II Session Graduation** (August) $45.00 Application Deadline: February 1

* Doctoral students should apply at least two semesters prior to intended graduation date.
**No Commencement Exercises in August

1. Apply for graduation by submitting the form Application for Graduation Audit and an application fee ($45.00). The application form may be obtained from the Registrar's Office on the third floor of the Seibert Administration Building or on the Internet at www.wmich.edu/registrar/auditform.htm.

2. Fulfill all program and degree and University requirements and obligations.

3. The student must 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 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 Audit, is a process by which a student's academic record is examined to make sure all the requirements for the degree have been met. The audit is conducted by a graduation auditor in the Registrar's Office, 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.

2. 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.

3. Master's degree students will file their Permanent Program of Study prior to completion of 12 credit hours of study.

4. 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.

5. 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.

6. All transfer credit, if applicable, is approved and the Graduate Transfer Credit form is appropriately signed by the advisor and the graduation auditor.

7. All completed course work (and other program requirements, where applicable) coincide with the Graduate Student Permanent Program of Study.

8. 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 project dissertation, fulfillment of any residency requirement, and compliance with the continuous enrollment requirement within the time limit allowed for the completion of degree requirements.

9. 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. No fee is charged for submitting a change of graduation date form. 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.

Nondegree 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 degree requirement 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.

GRADUATION REQUIREMENTS

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 to the degree program (for example, the completion of specified course or experiential prerequisites). For more specific information about the graduation requirements for each department's listing in this catalog or contact the department's listing in the catalog or contact the degree program's graduate 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 degree program, 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.

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 the thirty hours 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 600 or above.
• A master's level Graduate Student Fellowship program is open to full-time graduate students and offers stipends in the range of $5,600 per year, subject to departmental availability. For more information contact the Graduate Admissions Office. Upon request, entrance exams will be made available to qualified candidates.

2. Grade Point Average: A degree program grade point average of at least 3.0 is required for admission to the master's degree at Western Michigan University.

3. 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.

4. Transfer Credit: A student enrolled in a master's degree program may, with written permission, complete a maximum of 12 credit hours at Western Michigan University. 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 schools 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.
• The student must be enrolled within a six year period prior to graduation from Western Michigan University, is represented on an official transcript of the other university, and is identified on that transcript as a graduate student.

5. 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 awarded. 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 date of degree conferral.

6. Research Subject Protection: Students conducting research that involves human or animal subjects, biohazards, genotoxic 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 protection of such subjects or for the use of such materials. There are no exemptions to this requirement. For more information, call the Office of the Vice President for Research and Technology at 269-327-8066.

7. Enrollment in Master's Thesis (701): A student who intends to register for the Master's Thesis (701) for the first time is required to file a completed Permission to Elect form 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. A Continuous Enrollment Agreement must be signed by the student and the department head. The course 700, 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 700, the student must continue to enroll in 700 until at least six credit hours are completed. The student may register for Master's Degree 700 for continuous enrollment for a maximum of four hours of credit in 700 (Research). A Continuous Enrollment Agreement must be signed by the student and the department head. The course 700, 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 700, the student must continue to enroll in 700 until at least six credit hours are completed. The student may register for Master's Degree 700 for continuous enrollment for a maximum of four hours of credit in 700 (Research).

9. Submission of Master's Thesis (700) Manuscript: The manuscript, when submitted, must conform to the style and format requirements explained in the University's Guidelines for the Preparation of Theses, Projects, and Dissertations, available for purchase in Western's Campus Bookstore or for free downloading at http://www.wmich.edu/grad/. Also, the manuscript may be submitted for review only after it has been approved by the student's thesis advisor and only with the signed committee approval forms certifying departmental approval of the manuscript and of the student's successful defense of it. Students who submit their thesis electronically through the ETD site must submit these approval forms as well as any other documents containing signatures, such as research protocol approval letters, separately to The Graduate College.

If the student wishes to have the master's thesis published by Bell & Howell (formerly University Microfilms, Inc.), a certified check or money order for $55.00 (payable to Bell & Howell) must accompany the manuscript when it is submitted to The Graduate College.

See the Graduate Studies section of this catalog, under GRAD 700, 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 must complete a minimum of 24 additional semester hours at Western Michigan University. Any credits transferred into the second master's program may not exceed sixteen semester hours. 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 are given recommenda- tion of their department, acquire the master's degree by the following means:
• The student requests the departmental graduate advisor to review the student's program of study to ensure that it meets the requirements for the master's degree.
• The graduate advisor or chair submits a pro- gram 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 achieves a master's degree en route to the doctoral degree must complete the minimum number of sem- ester hours of graduate work course work beyond the master's degree specified by the doctoral program in which the student is enrolled and must meet the additional requirements as specified by 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 recommen- dation of their department, acquire a second master's degree en route to the doctoral degree by the following means:
• Six hours from the first master's program may be applied to the second master's degree as evaluated and approved by the advisor and the graduation auditor as meeting the general and program requirements for transfer credit to a graduate program.

6. 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.

7. 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 the master's degree.

8. The student files an application for graduation with a master's degree, initiating the graduation audit which determines the student's eligibility for graduation.

9. 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.

10. A separate application for graduation with a doctoral degree must be filed.

Specialist Degree

In addition to the minimum University require- ments for graduation, a specialist degree program requires students to complete specific courses, examinations, research, and/or experiences. For more complete information about the requirements for each specialist degree 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 30 credit hours in approved courses of study. Courses in addition to those required may be required by the student's academic unit.

2. Residency Requirement: A residency require- ment is established by each specialist pro- gram and approved by the University's cur-
riculum 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. The thirty-hour requirement for research involving regulated subjects and hazardous materials.

3. Grade Point Average: A degree program grade point average of at least 3.0 is required for all work taken for the 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 grade averages will not count toward graduation.

4. Transfer Credit: A student with a master's degree from another university 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 university 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 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.
   - 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 university, 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.
   - Honor points and grades earned at another university 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.

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. A work must be completed satisfactorily by the due date of graduation. Otherwise, grades taken primarily through part-time study have the option of requesting an extension from the graduate dean. Extensions beyond the six years may 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 update the content knowledge from courses taken more than six years before the projected date of graduation.

6. Research Subject Protection: 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 ensuring compliance with the regulations for the protection of such subjects for the use of such materials. There are no exceptions to this requirement. For more information, contact the Office of the Vice President for Research, 387-8928.

7. Enrollment in Specialist Project (720): A student who intends to register for the Specialist Project (720) for the first time is required to file a completed Program Requirement form before registering to ensure that the student is informed about the regulations pertaining to the preparation and submission of the manuscript and to the defenses and research involving regulated subjects and hazardous materials.

8. Continuous Enrollment in 720: The course 720, Specialist Project, may be registered for in increments as few as six hours. Following a student's first enrollment in 720, the student must have continuous enrollment in 720 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 720; however, only six hours of 720 will count toward 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 required 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 term in which the student graduates. If the student will graduate in summer I or summer II, 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 use fee for each session in which computer and remote library services are desired.

9. Submission of Specialist Project (720) Manuscript: The manuscript, when submitted, must conform to the style and format requirements explained in the University's Guidelines for the Preparation of Theses, Projects, and Dissertations, available for purchase in Western's Campus Bookstore or for free downloading at the program requirements form. Also, the manuscript may be submitted for review only after it has been approved by the student's thesis committee. Copies of the signed comprehensive examination form certifying full departmental approval of the manuscript and all of the student's successful defense of it. Students who submit a thesis electronically through the ETD site must submit these approval forms as well as any other documents containing signatures, such as research process protocol approval letters, separately to The Graduate College.

If the student wishes to have the specialist project published by Bell & Howell (formerly University Microfilms, Inc.), a certified check or money order for $50.00 (payable to Bell & Howell) must accompany the manuscript when it is submitted to The Graduate College.

See The Graduate Studies section of this catalog, under GRAD 720, for additional information regarding the Specialist Project.

Doctoral Degree

In addition to the minimum University requirements for graduation listed below, each doctoral degree program has requirements 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 Western Michigan University in 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 student to another.
   - A doctoral level Graduate Student Perman-ent Program of Study may include a maximum of four hours of credit in 598 (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: The general residency requirement for doctoral students is one academic year (two consecutive semesters) of full-time study on campus. Each doctoral program may, however, with approval of the University through the curriculum review process establish its own residency requirement. Students must meet the 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 Examination(s) (if required): Comprehensive Examination(s) may be required comprehensive examination(s) that cover the principal subject matter areas included in the student's program of study.

   - Grade Point Average: A degree program grade point average of at least 3.0 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 grade averages will not count toward graduation.

5. Transfer Credit: Doctoral students attend Western Michigan University after earning a master's or other graduate degree elsewhere, and their subsequent course work is then usually transferred from Michigan University. However, graduate credit earned at another university 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.
   - 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 university, 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.

- Honor points and grades earned in courses at another university 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.

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 six years before the projected date of completion of the degree's courses, grades, and honor points from courses taken more than six years before the projected date of graduation.

8. Research Subject Protection: 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. There are no exceptions to this requirement. For more information, call the Office of the Vice President for Research, 387-8298.

9. Enrollment in Doctoral Dissertation (730): A student who registers for the Doctoral Dissertation (730) for the first time is required to file a completed Permission to Elect form 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.

- Doctoral Dissertation (730) varies in credit from a minimum of twelve hours to a maximum of twenty-four hours. The minimum and maximum number of hours of 730 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 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 730, for additional information regarding the Doctoral Dissertation.

10. Continuous Enrollment in 730: The course 730, Doctoral Dissertation, may be registered for in increments of one or more hours. Following a student's first enrollment in 730, the student must have continuous enrollment in 730 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 730; however, only the program-stipulated hours for 730 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. 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.

11. Submission of Doctoral Dissertation (730): Manuscript: The manuscript, when submitted, must conform to the style and format requirements explained in the University's Guidelines for the Preparation of Theses, Projects, and Dissertations, available for purchase in Western's Campus Bookstore or for free downloading at http://www.wmich.edu/grad/. 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 who submit a thesis electronically through the ETD site must submit these approval forms as well as any other documents containing signatures, such as research protocol approval letters, separately to The Graduate College.

12. Publication of the Dissertation Manuscript: All doctoral dissertations will be published (microfilmed) by Bell & Howell (formerly University Microfilms, Inc.) and an abstract of the dissertation will be prepared by the student for publication in Dissertation Abstracts. A certified check or money order for $60.00 (payable to Bell & Howell) must accompany the manuscript when it is submitted to The Graduate College.

Nondegree Graduate Certificate Program

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. The student must complete the fifteen (15) to twenty-one (21) hours of course requirements of the graduate certificate program with a "B" (3.0) or better grade point average, with no course grade lower than a "C," within a six-year period after admission to the certificate program. Students whose certificate programs are taken exclusively 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.
FELLOWSHIPS, ASSISTANTSHIPS, ASSOCIATESHIPS, GRANTS

Western Michigan University provides fellowships and assistantships for students planning to pursue graduate study. Applications are due by February 15, and appointments are usually made by April 1 for students planning to enroll in the fall semester. Applications are often renewable, except for Graduate College Dissertation Fellowships. For more information, and to obtain application forms, visit or call The Graduate College (269) 387-8212, or visit the Graduate College’s financial assistance website: www.wmich.edu/grad/funding

The following appointments are available.

**Graduate College Fellowship**
Graduate College Fellowships for two semesters and one session are awarded to students admitted to a doctoral program. The associateship requires twenty hours of service per week from the student in the department or in a related area. Enrollment of at least six hours per semester and three hours per session is required. The associateship will pay $18 per hour of full tuition. Application deadline: February 15.

**Graduate College Doctoral Associateship**
Graduate College Doctoral Associateships for two semesters and one session are available to students admitted to a doctoral program. The associateship requires twenty hours of service per week from the student in the department or academic unit. Recipients of the associateship award are eligible for partial in-state tuition scholarships which will be applied to the in-state portion of the tuition bill. The associateship will pay up to 18 hours of the out-of-state portion of the tuition. Although applications may be submitted at any time, priority will be given to those who apply by February 15.

**Historically Underrepresented Groups Program**
The Historically Underrepresented Groups Program awards financial assistance to qualifying entering graduate students who are U.S. citizens from historically underrepresented groups. The program is intended to furnish a base of financial support to assist these students to pursue graduate degrees at WMU. Priority is given to students enrolling in programs leading to a Ph.D. (or M.D.). The awards are tailored to each individual and can be made in conjunction with other awards, sometimes including partial in-state tuition and up to 18 hours of the out-of-state portion of the tuition. Priority will be given to those who apply by February 15.

**Martin Luther King/Cesar Chavez/Rosa Parks Future Faculty Fellowship**
Martin Luther King/Cesar Chavez/Rosa Parks Future Faculty Fellowships are available to U.S. citizens from historically underrepresented groups with regular admission to a doctoral program and who wish to pursue a full-time teaching career in post-secondary education in Michigan or Illinois. The fellowship does not require departmental service; however, students must meet other requirements as stated in the guidelines for KCP fellowships. KCP fellowships can be awarded in conjunction with other appointments. Applications should be sent to The Graduate College. Although applications may be submitted at any time, priority will be given to those who apply by February 15.

**Thurgood Marshall Assistantship**
Thurgood Marshall Assistantships for the academic year plus the summer I and summer II sessions are available to U.S. citizens from historically underrepresented groups who are beginning their master’s degree programs and who have regular admission to the program. Enrollment is required in at least nine hours per semester and five hours per session, and service of ten hours per week is required in the student’s department or academic unit. Priority will be given to those who apply by February 15.

**Future Faculty Fellowships**
Future Faculty Fellowships are available to U.S. citizens from historically underrepresented groups with regular admission to a doctoral program and who wish to pursue a full-time teaching career in post-secondary education in Michigan or Illinois. The fellowship does not require departmental service; however, students must meet other requirements as stated in the guidelines for KCP fellowships. KCP fellowships can be awarded in conjunction with other appointments. Applications should be sent to The Graduate College. Although applications may be submitted at any time, priority will be given to those who apply by February 15.

**University Teaching or Research Assistantship**
Graduate Teaching or Research Assistantships for two semesters of full-time appointment are available in many departments of the University. Inquiries should be sent to the chairperson of the department.

**Graduate Student Research Fund**
The Graduate Student Research Fund was established to support graduate students engaged in independent scholarly research, scientific inquiry, inventive technology, and original artistic activity. The fund is intended to help students pay 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, are not considered to be unusual expenses.

To be eligible for a grant from the Graduate Student Research Fund, an applicant must be a regular graduate student with good academic standing, and enrolled for at least six hours in the fall or for at least three hours in the winter. Priority will be given to those who apply by February 15.

**Graduate Student Travel Fund**
The Graduate Student Travel Fund was established to support graduate students engaged in independent scholarly research, scientific inquiry, inventive technology, and original artistic activity. The fund supports graduate student travel to meetings or events sponsored by professional organizations for the purpose of reporting the results of research, exhibiting or performing creative works, or otherwise disseminating results of their scholarly activity. This fund does not cover conference attendance for other purposes (e.g., as a non-presenting attendee or workshop participant), nor to present the findings of another's scholarly work.

**Departmental Teaching or Research Assistantship**
Teaching and Research Assistantships for two semesters of full-time appointment are available in many departments of the University. Inquiries should be sent to the chairperson of the department.

**Graduate Student Travel Fund**
The Graduate Student Travel Fund was established to support graduate students engaged in independent scholarly research, scientific inquiry, inventive technology, and original artistic activity. The fund supports graduate student travel to meetings or events sponsored by professional organizations for the purpose of reporting the results of research, exhibiting or performing creative works, or otherwise disseminating results of their scholarly activity. This fund does not cover conference attendance for other purposes (e.g., as a non-presenting attendee or workshop participant), nor to present the findings of another's scholarly work.
To be eligible for a grant from the Graduate Student Travel Fund, 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 summer program or travel takes place (students on "continuous enrollment" status are exempt from this requirement), and the sole or principal investigator and the invited presenter.

Applications involve the research topics, subjects, animals, and/or bio-safety requirements must provide documentation of prior approval of the research proposal by the appropriate University committee. Grants will range up to $600.00 for those applicants selected for funding. The amount will depend, in part, on the number of applications received and the budget available and, in part, on the priority given the application by the selection committee. Preference is given to applications submitted before the travel has been completed. Applicants should be aware that not all applications may be selected for funding and that not all applicants may receive the amount of funding requested. Applications are available at The Graduate College. Application deadline: September 15, November 15, and March 15.

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 seven or more credit hours of graduate work, and who are in good academic standing. Preference is given to female candidates. The award amount is credited to the student’s University account and applied toward tuition, fees, and books. Nominations from department chairs or graduate advisors must include the nominee’s vita and a letter of support from either the department chair or graduate advisor. The scholarships are awarded on an annual basis each spring. Applications must be received by March 31.

George and Beatrice Fisher Gerontology Dissertation Prize
The annual award recognizes the doctoral dissertation that best advances the study and understanding of the process of aging. The prize may be awarded in any discipline or field related to gerontology. Candidates must be enrolled in the University during the session the research or travel takes place and be in good academic standing. Nominations from department chairs or graduate advisors must include a summary of the nominee’s gerontology research, a vita, and a letter of support from the department chair or graduate advisor. The award is made during the month of June. Applications must be received by May 15.

POLICIES GOVERNING GRADUATE APPOINTEES

Definitions and Classifications
1. A graduate appointee is a student enrolled in a degree program and in good academic standing, and enrolled in a program leading to a graduate degree or to a graduate certificate who receives a University-administered salary and stipend which is not less than one-half of the prevailing full amount set by the University for that particular type of appointment.
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. 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 within 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 or a fellowship. The critical difference between an assistantship and a fellowship lies in the primary intent of the award. An assistantship is a regular part of the educational goal. Although there may be some aspect of service connected with a Fellowship as part of particular departmental activity, this activity is part of the training designated for all participants in the Fellow’s academic program, and the service rendered is secondary to the educational goal. Although all, or nearly all, of an Assistant’s service to the department should also be part of the learning experience in the discipline, the primary intent is in doing part of the work of the department.
4. More than one fractional appointment may be held simultaneously. However, in no case shall one person receive more than the equivalent of one full appointment.

Types of Appointments
1. Assistantship
   a. Assistantships are awarded to graduate students in exchange for a professional service. Graduate assistants are apprentices in the professional enterprise. The significant aspect is emphasized in the definition in order to make a distinction. Graduate Assistantships, first and foremost, are students and valued members of the academic community of scholars. They are chosen for their scholarship and manifest professional interest in the discipline as well as for their ability to perform the needed service.
   b. The term of a Graduate Teaching Assistant (T.A.) consists of activities directly related to teaching, while the service of a Graduate Research Assistant (R.A.) consists of research activity under the supervision of a faculty member, and the service of a Graduate Non-Teaching Assistant (N.T.A.) includes all other professional work in the unit accepted as appropriate and germane to the student’s educational goal.
2. Associateship
   Associateships are assistantships awarded to outstanding students in doctoral programs. Service may involve teaching, research, or other appropriate activity.
3. 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 and the Academic Department. A fellowship (stipend) is a gift to help the Fellow achieve an educational goal, rather than a payment for services.

Service Requirement
The kinds of service required of Graduate Assistants and Associates may vary among departments, each of which determines its own range of appropriate possibilities subject to administrative review. Whatever kind of service is expected, however, a full assistantship in this 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; the fellowship grant (stipend) is a gift to help the Fellow achieve an educational goal, rather than a payment for services.

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 and stipend 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 and fellowship awards may have tax implications. Detailed records of educational expenses and check stubs from any payment received by the Fellow must be kept for tax purposes.

Affirmative Action
The University’s Affirmative Action 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 fellow shall state the amount of the award, whether a remission of tuition is involved, the probable assigned activities, the length of the appointment, conditions of service, and the criteria for renewal. Any other conditions peculiar to an individual appointment shall be, in the letter of appointment.
2. Each applicant 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 appointment requires a minimum enrollment of six credits per semester or three credits per session. Individual departments may require an enrollment greater than the minimum number of credit hours. A Graduate College Fellowship requires enrollment in at least 9 credit hours per semester. Some circumstances may allow for decreased enrollment, however; departments will advise appointees.
2. It should be noted that students registered for seven or more credits a semester (four or more credits a session) are assessed, as part of the enrollment fee, prepaid student health center and recreation center fees that allow access to health center services and recreation center facilities. Students enrolled for six or fewer credits a semester (three or fewer credits a session) are assessed a lesser enrollment fee which allows for limited services at the health center and provides ten visits to the recreation center. Students in the latter example can choose to pay the difference between the two enrollment fees enabling them to have full access to the health center services and/or have unlimited recreation center privileges.

Evidence of Status
1. For formal identification as a graduate appointee, the student should carry a special validation sticker affixed to the student identification card. This validation sticker may
be obtained in The Graduate College at the beginning of each term.

2. Validation may be authorized during the spring and summer sessions for graduate appointees on academic year appointments even if the appointee is no longer receiving a stipend or salary.

Benefits

1. Tuition fees: Graduate appointees may, at the discretion of the University, be granted partial or full tuition remission. Any such remission will be identified in the appointment letter and on the appointment form. Tuition remission is awarded only during the semester(s) a gradu-

ate appointment is held. Students who are granted such partial or full tuition remission and subsequently withdraw from a class or from classes after the refund period will be required to repay the portion of the tuition that was granted as a benefit of the appointment.

2. University housing: Graduate appointees will be accorded priority in securing University housing in residence halls or family housing apartments (if deadlines are observed and as facilities permit).

3. 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).

4. 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 appointment validation sticker.

5. Campus Bookstore: Graduate appointees are entitled to purchase textbooks and supplies at the bookstore. Discount will be accorded the student on a basis that they are authorized for faculty and staff members. Discount will be given for current semester only by showing the ID and validation sticker at the service desk.

6. 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.

7. Health insurance: Appointees may elect to enroll in a University-sponsored Health Insurance Program. All students enrolled at Western Michigan University are eligible to participate in the Student Health Insurance Program (dependent coverage available) where each participant pays the full cost of coverage. This is a requirement for University health insurance.

FINANCIAL AID AND SCHOLARSHIPS

Students Admitted on Permission to Take Graduate Classes (PGT) Status

Students who have been admitted to The Graduate College on PGT status are not considered admitted to a graduate program and may not be eligible for financial aid. Students admitted on PGT status to complete teacher education certification requirements may be eligible for loans at the undergraduate level. Students who have applied for admission to a graduate program and are classified as PGT to take prerequisite courses to be admitted into the graduate program may be eligible for loans at the undergraduate level for a twelve-month period. Students who are in these PGT categories and are eligible for federal aid may need to have parental information listed on their FAFSA if they have over 24 years of age at the time of application.

Maintenance Requirements

In accordance with Federal and State regulations, the financial aid office must monitor academic progress towards graduation on an annual basis (at the end of spring semester). We monitor the following: 1) minimum credit hours passed per semester, 2) maximum total semesters attempted, 3) maximum total hours attempted, and 4) minimum cumulative grade point average. Full-time master's students must maintain a cumulative grade point average of 3.0 and pass at least 12 credit hours per academic year (or 6 hours per fall and/or spring semester); attempt no more than 72 hours total and attend no more than 8 fall and/or spring semesters. Full-time doctoral students must maintain a cumulative grade point average of 3.0 and pass at least 12 credit hours per academic year (or 6 hours per fall and/or spring semester); attempt no more than 110 hours total and attend no more than 14 fall and/or spring semesters. If the student is consistently enrolled less than full-time (less than 6 hours each fall and spring semester), the student should visit the financial aid website (www.wmich.edu/finaid) for details. Students who have not met the minimum criteria are not eligible for federal loans or for federal or state work study. Students who have experienced unusual circumstances may submit a written appeal with documentation to the Student Financial Aid Office to be considered by an appeal committee.

Withdrawal from All Courses, Effect on Financial Aid

If you are a financial aid recipient contemplating a partial or complete withdrawal, it is highly recommended that you discuss your situation with a Financial Services Specialist in Student Financial Aid before you withdraw.

If you are a financial aid recipient and you drop some of your classes during the drop/add period (or indicate you never attended some of your classes), you may not receive all or any of your financial aid eligibility. If you drop all of your classes prior to the start of the semester (or indicate you never attended), you are no longer eligible for financial aid for that semester. All scholarships, grants, assistantships, and loan payments (and refunds of financial aid) must be returned to Western Michigan University.

If you are a Federal financial aid recipient, and you completely withdraw from all classes after the beginning of the semester, the law requires that the amount of Federal aid earned up to that point is determined by a specific formula. If you receive more Federal aid than you have earned, the excess Federal aid must be returned. The amount of Federal aid you have earned is determined on a pro-rata basis. That is, if you completed 30 percent of the semester, you earn 30 percent of the Federal aid you received. Once you have completed more than 60 percent of the semester, you earn all of your Federal aid.

Receipt of Assistantships/Fellowships

If you are a financial aid recipient who has been offered an assistantship of fellowship by a department of the Graduate College, it will not be indicated on your Award Letter until the financial aid office has been notified by the Graduate College. If you have accepted the full amount of Federal loans awarded to you, your loans may be reduced when the assistantship or fellowship (or any other awards) are added to your award file. Even if your loans have been disbursed, they may be reduced at the time we receive notification of the receipt of additional assistance.
STUDENT RIGHTS AND RESPONSIBILITIES

GENERAL UNIVERSITY POLICIES

In addition to the several policy statements included below, the University's general academic policies may be found on Western Michigan University's website: www.wmich.edu/sub/u-policies.html/

Student Rights

BASIC RIGHTS

1. Students have the right to free inquiry, expression, and association.
2. Students should be free from discrimination and harassment based on race, sex, sexual orientation, age, color, national origin, religion, disability, marital status, or family 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

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 fully informed by the faculty about course requirements, evaluation procedures, and the academic criteria to be used in each class. This information will be provided at the beginning of the semester or sufficiently in advance of actual evaluation.
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 spring plus summer 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

Definition

Plagiarism is intentionally, knowingly, or carelessly presenting the work of another as one's own (i.e., without proper acknowledgment of the source). The sole exception to the requirement of acknowledging sources is when the ideas, information, etc., are common knowledge.

Instructors should provide clarification about the nature of plagiarism.

Clarification

1. Direct Quotation: Every direct quotation must be identified by quotation marks or appropriate indentation and must be properly acknowledged, in the text by citation or in a footnote or endnote.
2. Paraphrase: Prompt acknowledgment is required when material from another source is paraphrased or summarized, in whole or in part, in one's own words. To acknowledge a paraphrase properly, one might state: "To paraphrase Locke's comment,..." and then conclude with a footnote or endnote identifying the exact reference.
3. Borrowed facts: Information gained in reading or research which is not common knowledge must be acknowledged.
4. Common knowledge: Common knowledge includes generally known facts such as the names of leaders of prominent nations, basic scientific laws, etc. Materials which add only to a general understanding of the subject may be acknowledged in the bibliography and need not be footnoted or endnoted.
5. Footnotes, endnotes, and in-text citations: One footnote, endnote, or in-text citation is usually enough to acknowledge indebtedness when a number of connected sentences are drawn from one source. When direct quotations are used, however, quotation marks must be inserted and acknowledgment made. Similarly, when a passage is paraphrased, acknowledgment is required.

Faculty members are responsible for identifying any specific style/format requirement for the course. Examples include but are not limited to American Psychological Association (APA) style and Modern Languages Association (MLA) style.
26 STUDENT ACADEMIC CONDUCT

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 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 labs, 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 the results of research and creative activities including appropriate representations of originality, authorship and collaborative crediting.

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 correction 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 work as one’s own, even if the purpose is to avoid plagiarism.
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 organization or authorship, and omission, alteration, or misrepresentation of 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, human tissue, 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 Board Requirements
Misconduct in research includes 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 University’s Institutional Review Board, the Institutional Animal Care and Use Committee, and the Institutional Biosafety Committee.

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 trained by the Office of Student Conduct and the Office of Student Academic Conduct.

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 enrolling, adding, or registering in classes.
2. If the student admits the charge: If the student admits responsibility, the OSC will contact the instructor and arrange a meeting between the instructor and the student to communicate the instructor’s penalty for the behavior, unless the instructor chooses not to meet with the student. 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 also from reprimand to dismissal from the University.
3. If the student denies responsibility: If the student denies responsibility, the charge will still be considered and 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 Committee. An Academic Integrity Committee will consist of three faculty members and two students, selected from and established by the Professional Concerns Committee of the Faculty Senate. The choice of hearing type is the instructor’s. The OSC will assist the instructor in setting the hearing and will notify the student of the 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 Committee within five University business days. The student cannot appeal after that time has elapsed.

5. The authority of the academic integrity committee will conduct hearings to determine whether the student is responsible for academic dishonesty. An Academic Integrity Committee makes no decisions regarding the penalties 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 Committee so decides by majority vote. 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 the 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 classes 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 penalties 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. The student 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 admits responsibility or (2) the hearing process is completed. While a case is pending, the student has the right to attend and participate in class. If the case is pending at the end of the semester, the instructor must assign and 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 or the student’s academic advisor may 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.
In each instance of an academic dishonesty charge which requires AIC review (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 sanctions are warranted. 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 and each academic unit is asked to recommend one undergraduate and one graduate student to the AIC panel. Students recommended to the AIC panel will be screened by the OCS to ensure that no AIC student member has incurred any 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 for the program to have a pool of those who can serve in the spring and summer.

Each five-member AIC shall be composed of three faculty members and two student members. Each academic unit shall recommend an appropriate number of undergraduate students, both student members of the AIC shall be undergraduates. For a charge against a graduate student, both members shall be graduate students. Each academic unit may select a faculty member to chair the committee, and each AIC must have three faculty and two student members present to have a quorum. 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. The student may appeal a final course grade in accordance with the procedures outlined 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 sanctions are warranted. 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 and each academic unit is asked to recommend one undergraduate and one graduate student to the AIC panel. Students recommended to the AIC panel will be screened by the OCS to ensure that no AIC student member has incurred any 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 for the program to have a pool of those who can serve in the spring and summer.

Each five-member AIC shall be composed of three faculty members and two student members. Each academic unit shall recommend an appropriate number of undergraduate students, both student members of the AIC shall be undergraduates. For a charge against a graduate student, both members shall be graduate students. Each academic unit may select a faculty member to chair the committee, and each AIC must have three faculty and two student members present to have a quorum. 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.

The accepted bases of course grade appeal are:

- **A.** Grades were calculated in a manner inconsistent with University policy, the syllabus, or contract with the syllabus.
- **B.** The grades were erroneously calculated.
- **C.** Grading/performance standards were arbitrarily or unreasonably applied.
- **D.** The instructor failed to assign or remove an incomplete or to initiate a grade change as agreed upon with the student.
- **E.** The course class (classes), after grades have been assigned, due to genuine hardship. Students appealing on this basis should proceed by contacting the University Ombudsmen.

and following the procedures for a late withdrawal appeal.

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 violations. So a finding has been made through the procedures provided in the academic integrity policy.

The steps to be taken in appealing a grade appeal are:

1. **Informal meeting with instructor:** A student is encouraged to begin the appeal process by meeting with the instructor who assigned the grade(s) to be appealed. The student can often help instructors 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 student must submit a letter requesting an appeal to the academic unit chair/director. This letter must be received by the academic unit chair/director within sixty 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 in extreme circumstances in which the 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 is incorrect. 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 GAPDAC within twenty business days. In this letter, the chair/director should confirm the meeting with the student, recap their discussion, and state whether the student’s appeal was accepted or rejected. Such meetings often help students understand the grading practices of instructors and often lead to resolution of differences over grades.

3. **Appeal to committee:** After the chair/director has completed the response to the student’s appeal, the student may appeal to a Grade and Program Dismissal Appeals Committee (GAPDAC). This appeal must be initiated within twenty business days of the notification of the appeal decision. The student may then initiate an appeal to the GAPDAC.

   The student will initiate an appeal through the Office of the University Ombudsmen. When the Ombudsmen receives the appeal, the Provost or designate will schedule a meeting of GAPDAC using procedures determined by the Professional Concerns Committee of the Faculty Senate. The GAPDAC consists of three members drawn from a panel of faculty established for this purpose. In a program appeal, the student’s appealant should attend the meeting of the appeal panel and must provide a written statement describing the grounds for appeal. A University representative from the program or the appealant should attend the meeting and 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.

**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 changes to the academic integrity policy. Appeal panels are assembled from the faculty under the authority of and by the designee of the Provost and Vice President for Academic Affairs. Through the process, the Academic Unit Ombuds is available to students and instructors for assistance on procedures and clarification 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 unreasonably applied.

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 violations. Such a finding has been made through the procedures provided in the academic integrity policy.

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 other University policies and procedures.

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 violations. Such a finding has been made through the procedures provided in the academic integrity policy.

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 unreasonably applied.

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 violations. Such a finding has been made through the procedures provided in the academic integrity policy.

The steps to be taken in appealing a grade appeal are:

1. **Informal meeting with instructor:** A student is encouraged to begin the appeal process by meeting with the instructor who assigned the grade(s) to be appealed. The student can often help instructors 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 student must submit a letter requesting an appeal to the academic unit chair/director. This letter must be received by the academic unit chair/director within sixty 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 in extreme circumstances in which the 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 is incorrect. 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 GAPDAC within twenty business days. In this letter, the chair/director should confirm the meeting with the student, recap their discussion, and state whether the student’s appeal was accepted or rejected. Such meetings often help students understand the grading practices of instructors and often lead to resolution of differences over grades.

3. **Appeal to committee:** After the chair/director has completed the response to the student’s appeal, the student may appeal to a Grade and Program Dismissal Appeals Committee (GAPDAC). This appeal must be initiated within twenty business days of the completion of step 2. If the student has requested a review of the appeal panel and must provide a written statement describing the grounds for appeal. A University representative from the program or the appealant should attend the meeting and 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**

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. The GAPDAC consists of three members drawn from a panel of faculty established for this purpose. In a program appeal, the student’s appealant should attend the meeting of the appeal panel and must provide a written statement describing the grounds for appeal. A University representative from the program or the appealant should attend the meeting and provide a written statement describing the grounds for and circumstances of dismissal.

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

**Grade and Program Dismissal Appeals Committee**

A Grade and Program Dismissal Appeal Commit-
Each GAPDAC shall be composed of three faculty members, at least one of whom is from the college where the course or program of study is offered. Each GAPDAC must have all three members present to hear a query. 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 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.

**Dissertation/Thesis/Project Appeals Procedure**

If there are differences among the members of a thesis/project/dissertation committee over the appropriateness of the thesis, project, dissertation, or 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 thesis/project/dissertation committee, the student shall first take the appeal to the 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 academic dean, and the chairperson or director of the thesis/project/dissertation. The Review Committee shall seek to resolve the controversy without passing on the thesis/project/dissertation or 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.

2. The right to request the amendment of the student's educational records that the student believes to be inaccurate, misleading, or otherwise in violation of the student's privacy rights.

Students may ask the University to amend a record they believe to be inaccurate or misleading. The University official responsible for the records, clearly identifying the part of the record they want amended, and specifying the precise way the records should be amended. The student's request for amendment shall be made in writing to the University official responsible for the records. The student's request for amendment shall be made in writing to the appropriate University official, and the student must specify the part of the record the student wants amended.

2. The right to request the amendment of the student's educational records that the student believes to be inaccurate, misleading, or otherwise in violation of the student's privacy rights.

Students may ask the University to amend a record they believe to be inaccurate or misleading. The University official responsible for the records, clearly identifying the part of the record they want changed, and specifying 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 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 the consent of the student.

One exception, which permits disclosure without consent, is disclosure to University officials with legitimate educational interests in and/or necessary to perform an educationally related function or service for the student. Additional information regarding the hearing procedures will be provided to the student when notified of the right to hearing.

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 Family 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.

The Family Educational Rights and Privacy Act

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, the 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 honors
- 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 student.

The Review Committee shall seek to resolve the controversy without passing on the thesis/project/dissertation or 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.

Residency Policy of Western Michigan University

The governing board at each university in Michigan has the authority to establish a residency policy/guidelines for admissions and/or fee purposes. Therefore, residency policies (guidelines) may vary from school to school and are independent of those used by other state authorities to determine residency for purposes such as income and property tax liability, driving and voting.

The policy which was approved by the Western Michigan University Board of Trustees effective with the Fall Semester, 2001, is in effect for the Fall Semester, 2001. This policy applies to all students (undergraduate and graduate) at WMU. The Office of the Assistant Vice President for Business administers this policy. Information on this policy is available through the University's web site. Additionally you may contact the Office of the Assistant Vice President for Business directly at 3080 Seebest Administration Building, Western Michigan University, Kalamazoo, MI 49008, or call (269) 387-2366 for additional information or to request an application form.

**RESIDENCY POLICY FOR UNIVERSITY ADMISSIONS AND/OR FEE PURPOSES**

Any student may apply for in-state resident classification for any semester/session in which they are enrolled by completing the "Application for Resident Classification for University Admissions and/or Fee Purposes" and submitting it to the Office of the Assistant Vice President for Business. Applications can be filed as early as one month prior to the start of each semester/session but not later than 20 calendar days following the first day of classes for the fall and winter semesters (10 calendar days for the spring and summer sessions). The deadline dates are the same for all students (undergraduate and graduate).

1. Students normally a student to Western Michigan University for the primary or sole purpose of attending the University rather than to establish a domicile in Michigan, one
POLICY ON SEXUAL HARASSMENT AND SEXISM

who enrolls in the University as a non-resident shall be classified through his/her attendance as a student, unless and until he/she demonstrates that his/her previous domicile has been abandoned and a Michigan domicile established. The burden of proving this on the student shall be on the University.

2. "Domicile" is defined as the place where an individual's true, fixed and permanent home and principal establishment is and to which the individual returns whenever he/she is absent from the University. A student shall not be considered domiciled in Michigan unless the student is in continuous physical presence in the State for one year (12 consecutive months) immediately preceding the first day of classes of the term for which classification is sought and intends to make Michigan his/her permanent home, not only while in attendance at the University but thereafter as well, and has no domicile elsewhere.

3. Dependent Student: For tuition classification purposes, a student is presumed to be a dependent of the student's natural parents and/or legal guardian if the student is 24 years of age or younger and (a) has been involved primarily in educational pursuits, or (b) has not been entirely financially self-supporting through employment.

a. Dependent Student - Parent(s) in Michigan

The domicile of the dependent student's parent(s) is presumed to be the same as that of the student's natural parents. A dependent student whose parents are, according to University Residency Policy, domiciled in Michigan is presumed to be eligible for resident classification for University purposes as long as the student has not moved to another state or for a minimum of two (2) months each year for a period of 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 a resident. Proof and verification of employment is required. A migrant worker in Michigan is defined as an individual who has been domiciled in Michigan for a period of at least one year prior to the date of the proposed in-state classification for University purposes. 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 the 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 a resident. Proof and verification of employment is required. A migrant worker in Michigan who has been employed as a migrant worker in Michigan for less than two (2) months each year for the three (3) of the five (5) years prior to the date of the proposed in-state classification, the student shall not be classified as a resident.

b. Refugee

Refugees must have I-94 card with "Refugee" designation.

4. Independent Student: A student may be granted resident status for tuition-paying purposes, once the student provides evidence of 12 consecutive months (one year) of physical presence in the State of Michigan immediately preceding the first day of classes of the term for which classification is applied for a change in status. The year of continuous presence is never the only criterion used for determining in-state classification and, by itself, will not qualify a student for in-state status for tuition-paying purposes at WMU.

5. Residence of Spouse: The residence of a student who otherwise would be classified as a non-resident and whose spouse qualifies as a resident student for tuition-paying purposes.

6. Immigrants and Aliens: Only persons who are entitled to reside permanently in the United States may be eligible for resident classification at Western Michigan University. These individuals, like U.S. citizens, must still prove that they have established a Michigan domicile as defined in these regulations.

In other words, having the privilege of remaining permanently in the United States, in itself, does not entitle a person to resident classification for University fee purposes.

At the present time, non-citizens who are entitled to reside permanently in the United States are entitled to resident status for tuition-paying purposes at WMU.

Required Documentation

When filing an Application for Resident Classification for University Admissions and/or Fee Purposes, the following documentation must be submitted with the application:

• All applicants must provide a copy of a valid driver's license for their self and of the person or persons upon whom the applicant is basing their claim to resident eligibility.

• All applicants must provide copies of the front and signature pages of the most recent federal and state income tax returns and accompanying W2s for the persons upon whom the applicant is basing their claim to resident eligibility.

• All applicants who are born outside of the United States must provide proof of U.S. citizenship or visa status.

• All applicants who are dependents (refer to Stipulation 3 of our policy) must provide copies of the front and signature pages of their parent's most recent year's federal and state income tax returns and accompanying W2s.

• All applicants whose claim to eligibility for resident classification is based on permanent, full-time employment for themselves, a parent or spouse must provide a letter from the employer, written on company letterhead (including the employer's name and address), stating the position, status and dates of employment. A copy of the most recent pay stub showing Michigan taxes being withheld must also be included.

• All applicants whose claim to eligibility for resident classification is based on the spouse's status as a resident, must provide a copy of their marriage certificate with the application.

All applicants are also responsible for providing any other documentation necessary to support their claim to residency eligibility that may be required by the Office of the Assistant Vice President for Business.

Policy on Sexual Harassment and Sexism

Western Michigan University is committed to an environment which encourages fair, humane, and beneficial treatment of all faculty, staff, and students. In accordance with that fundamental objective, the University has a continuing commitment to assure equal opportunity and to provide a discriminated, covert, sex, sexual orientation, age, religion, national origin, handicap, height, weight, or marital status. Therefore, in that same perspective, every experience of sexual harassment nor any related actions will be tolerated at Western Michigan University. It is expected that each member of the University community will consider himself/herself responsible for the proper observance of this policy.
Definitions
Sexual Harassment
Sexual harassment is defined as unwelcome sexual conduct which relates to any condition of employment or evaluation of student performance. This definition is intended to include more conduct toward actual sexual relations. It applies as well to repeated or unwarranted sex-related statements, unwelcome touching, sexually explicit comments, and/or graphical. All persons should be sensitive to situations that may affect or cause the recipient discomfort or humiliation or may display a condescending sexual-based attitude toward a person. Sexual harassment is illegal under both state and federal law. In some cases, it may be subject as well to prosecution under the criminal sexual conduct law. The complaint will be decided as sexual harassment in any or all of the following conditions exist:
1. The sex-related situations are unwelcome by the recipient.
2. A specific or implied connection with employment or student status is involved.
3. The sexual harassment continues after the recipient has made it clear that the conduct is unwelcome.
*Note: In some cases of overt physical sexual conduct, a blatant threat to such sexual favors are not given, or promised reward in exchange for such sexual favor, notice that the conduct is unwelcome, or a finding of sexual harassment may be based on a single occurrence.

Sexism
Sexism is defined as the perception and treatment of any person, not as an individual, but as a member of a category based on sex. Whether expressed in overt or subtle form such as sex-related jokes or materials, sexism in the classroom or workplace is unacceptable at the University; and its elimination shall be the responsibility of the entire University community. Depending upon the seriousness of the misconduct, informal corrective action may be adequate.

Complaint Procedure
Sexual harassment and sexism constitute acts of misconduct. Therefore, whenever such acts are reported and confirmed, prompt, disciplinary action will be taken, up to and including dismissal or termination. The University and students are encouraged to report such incidents. Employees should report such conduct to the Director of Compensation and Employee Relations, 1275 Seibert Administration Building (387-3620). Students should report such conduct to the Affirmative Action Director and Assistant General Counsel shall jointly establish appropriate procedures to implement this policy. They shall also investigate thoroughly any complaints of alleged sexual harassment or sexism, and then report the results of such investigation to the President of the University.

If you hesitate to file a sexual harassment complaint for fear of retaliation, you need to know that:
Federal and state law, as well as University policies, protect any person who has filed a complaint on sexual harassment, or on any other form of retaliation.
Likewise, protection is afforded any person who testifies, assists or participates, in any manner, in an investigation resulting from a sexual harassment complaint.
Therefore, any individual so harassed, intimidated, threatened, coerced, discriminated against or any other form of retaliation.
The Office of Institutional Equity, 1015 Trimpe Building, (387-6316). The grievance must be filed with the Office of Institutional Equity no later than thirty (30) calendar days after the event or events being grieved took place. The Affirmative Action Director or any other person designated by the appropriate Vice President to respond to the grievance. The Step 1 representative must provide a written answer within fourteen (14) calendar days after receiving the formal grievance.

The Grievance Procedure
Step 1: Departmental Level
If the grievance is not resolved at Step 1, the student may appeal to the appropriate Vice President within seven (7) calendar days after receiving the departmental representative's written answer. The student must file the appeal with the Office of Institutional Equity, using an official University appeal form. The Office will, in turn, notify the departmental representative and the appropriate Vice President of the student's appeal. The appropriate Vice President or his/her designee representative will then arrange a meeting with the grievant, his/her representative (if requested), and any other individuals who may help resolve the grievance. This meeting must be held within fourteen (14) calendar days after the appropriate Vice President or his/her designee hearing the appeal receives the grievance. The appropriate Vice President or his/her designee hearing the appeal will communicate an answer in writing to the involved parties.

Step 2: Appeal to the Vice Presidential Level
If the grievance has not been resolved within seven (7) calendar days after the appeal is received, the University, in its discretion, may proceed to this step after the appeals to the appropriate Vice President, at his/her discretion, will handle the grievance personally or will designate a representative to conduct a hearing or investigation of the grievance, report findings, and recommend a decision. The President will make the final decision and communicate it to the appropriate parties.
In addition to filing a grievance with Office of Institutional Equity, the student may file a complaint directly with the Office of Civil Rights, U.S. Department of Education, or any other avenue of complaint resolution.

Western Michigan University
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 accept-
able boundaries of student behavior as contained in the Student Code is not a basis for excusing inappropriate behavior.

Western Michigan University is an educational community that aspires to be purposeful, open, just, disciplined, caring, and celebrative. The Student Code and the Office of Student Conduct are tangible examples that illustrate commitment in the University to the values of justice and it shall not be bound by legal jargon, and as such, its focus shall be educational. The discipline of students in the educational community is a part of the teaching process and as such, its focus shall be educational. The discipline of students in the educational community is the province of the criminal courts. Any question about the processes, rules, or concern relating specifically covered by the Student Code shall be decided solely by the Dean of Students or her designee. Additionally, the Student Code provides methods to may be extended or amended to apply to new and unanticipated situations which may arise.

Enrollment in the University does not insulate students from the possibility of behavior inconsistent with local, state, and federal law. Violation of local, state, and federal law while on University premises is a violation of the Student Code. 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. Many of the items mentioned in these activities are considered to be of an especially serious nature. These violations include acts of academic dishonesty, any acts that disrupt the functions of the University, and any acts that disrupt the health or safety of any member of the University community or any other person. Student involvement in these activities is considered to be of the University, and their behavior is considered detrimental to the educational mission.

The complete text of the Western Michigan University Student Code is published by the Office of Student Conduct of the Division of Student Affairs and may be obtained from that Office.

Western Michigan University

Expectations for Good Practice in Graduate Education

THE MISSION OF WESTERN MICHIGAN UNIVERSITY

Western Michigan University is a student-centered research university, building intellectual inquiry, investigation, and discovery into all under-graduate, graduate, and professional programs.

EXCEPTIONS FOR GOOD PRACTICE IN GRADUATE EDUCATION 31

• Take primary responsibility to inform them of these goals and strives to provide students an environment that fosters scholarship, independent judgment, academic rigor, and intellectual honesty.

Professional Rights of Student Appointees

A portion of students at Western Michigan University have been granted graduate appointments. These graduate appointees serve an academic or service unit within the University. In return, they are given a stipend, a salary, and partial tuition remission. Graduate appointees, in addition to having the basic and academic rights mentioned below, also have professional rights. These include meaningful teaching, research, service responsibilities; clear and reasonable departmental expectations; work activities that average twenty hours per week for a full appointee, and due process in regard to service disputes.

Students' Rights and Responsibilities

Basic and academic rights and responsibilities are set forth in the Graduate Catalog, the Research Misconduct Policy, the Student Code of Conduct, 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, 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. When 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 adviser, who provides the intellectual and instructional environment in which that student plans a program of study, may be the person for whom the student provides assistance, and that the University, through the faculty adviser'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 professional papers, submitted for publication, and accepted for presentation at conferences. This may mean co-authorship when that is appropriate.
• Recognize that the faculty adviser is responsible for monitoring the accuracy, creativity, validity, and integrity of the student's research. Careful, well-conceived research reflects favorably on the faculty adviser, 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 faculty adviser and other members of the research team to the student's work in all publications and conference presentations; acknowledge may mean co-authorship when that is appropriate.
• 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 Advisory Committee 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 relationships with colleagues from interfering with their duties as graduate advisers, committee members, directors of graduate studies, or colleagues.
  • Avoid dual relationships that could impair their
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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 that 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 enjoyed by graduate students, there are rights and responsibilities that pertain specifically to graduate students who are serving on appointments. These appointments include doctoral associationships, 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(s) served, there are additional requirements.

3.0 Professional Rights and Responsibilities of Graduate Appointees

Graduate appointees serve the university through appointments that are awarded by the departments/schools under the auspices of Academic Affairs and The Graduate College. To resolve certain disputes resides first with the department/school and next with The Graduate College.

3.1 Department/School Level

Resolution of issues at the department/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 and/or the Ombudsman should be notified. If still aggrieved, a student may then submit a formal, written request for consideration by the Department/School Hearing Board. In the event of further unresolved disputes, the Ombudsman should be consulted. If still unresolved, the Ombudsman should refer the matter to the Graduate Student Office. The Ombudsman should consider the position of the student by the department or school.

3.2 Graduate College Level

If the student is dissatisfied with the decision of the department or school, the student may then appeal to the Graduate College. The student may then submit a formal, written request for consideration by the Graduate Committee of the Graduate College. In the event of unresolved disputes, the Ombudsman should be consulted. If still unresolved, the Ombudsman should refer the matter to the appropriate committee of the Graduate College. The Ombudsman should consider the position of the student by the Graduate College.

In some cases, appeals must be made to the Graduate College's Adjudication Committee and the Graduate Student Ombudsman. In other cases, appeals may be made to the Graduate College's Adjudication Committee, the Graduate Student Ombudsman, or the appropriate committee of the Graduate College. The Graduate College should consider the position of the student by the Graduate College.

The Research Misconduct Policy governs the adjudication of alleged violations of ethical research behavior.

In addition, the research and responsibilities that pertain specifically to graduate students who are serving on appointments.
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 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 body shall review each request and shall forward copies to the parties involved. If a copy of the grievance is not initiated within ten (10) class days to the Hearing Board members and to the person or persons party to the matter. 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.

3.7 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.

3.8 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 Office of the Ombudsman 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 or persons party to the matter. 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.

3.10 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.

3.11 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 individuals. Accept the request, in full or in part, and proceed to schedule a hearing. If the request is denied, provide an appropriate explanation. Involve all parties to meet with the board for an informal discussion of the issues.

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:

- 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.
- The time and place of the hearing.
- The body adjudicating the case.
- The names of the respondent and complainant.
- 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 or judiciary 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 Board or judiciary shall deem 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), to the Ombudsman, 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. 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) 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.
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.

ARCHIVES
The University Archives and Regional History Collections is located in East Hall, Room 111. 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 State Archives.

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, golf, gymnastics, softball, tennis, indoor and outdoor track, soccer, and volleyball.

Athletics are governed by the Athletic Board, which adheres to the policies and principles established by the National Collegiate Athletic Association and Mid-American Conference. Western Michigan University is a member of the Mid-American Conference. Other members of the conference are Akron, Ball State, Bowling Green, Buffalo, Central Michigan, Eastern Michigan, Kent State, Marshall, Miami (Ohio), Northern Illinois, Ohio, and Toledo.

CAREER AND STUDENT EMPLOYMENT SERVICES
The Office of Career and Student Employment Services offers a full range of services to help develop skills, explore the world of work and obtain full-time employment upon graduation. Services include a career learning lab, on-campus interviewing, part-time off-campus employment, internship opportunities, weekly job opportunity bulletins, Web-based employment listings, maintenance and distribution of education credentials, a computerized career guidance system, career fairs, and workshops.

For more information or to schedule an appointment, call (269) 387-2755. The Office is located on first floor of Ellsworth Hall.

CHILDREN'S PLACE LEARNING CENTER
The Children's Place Learning Center, located in the middle of campus at 2210 Wilbur, is open from 7:30 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 2-1/2 to 11 years old and toilet trained may be enrolled full-time, part-time, or hourly (maximum 10 hours per week). Breakfast, lunch, and snacks are included in the tuition and are provided by WMU's Dining Services Department. 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 developmentally appropriate activities which address each child's need for fun, creativity, active play, communication skills, problem solving, social interaction, rest and nutrition. The program is licensed by the State of Michigan. For more information and an application call (269) 387-2277.

DISABLED STUDENT RESOURCES AND SERVICES
Disabled Student Resources and Services assists Western Michigan University students with disabilities as they seek to find effective accommodations, maximize their abilities and gain independence. DSRS offers advocacy, registration assistance, readers/scribes and other test accommodations, textbook taping, accessible information, handi-van transportation, adaptive equipment, and referral to other campus and community agencies.

The office can be reached by calling (269) 387-2116.

HOUSING
Western Michigan University students may live on or off campus. Two alternatives exist on-campus, Residence Halls and WMU Apartments, and both deliver tremendous value to their residents. The success rate in meeting the diverse needs of their residents is very high and improvements are constantly being made. For these reasons, students should carefully consider the benefits of on-campus housing when choosing where to live. The listed rental fees are complete. They include all utilities, cable TV, and in most cases, many extra benefits not available off-campus.

Your residence hall application will be sent upon admission to Western Michigan University. An apartment application may be submitted before you are officially admitted to the University. The application date is the basis for assignment and the probability of an assignment increases with early application. Admission to the University or submitting a contract for a housing assignment does not guarantee a space will be available. Requests received after capacity are placed on a waiting list.

WMU Residence Halls
For information contact the Residence Life Office, 3510 Faunce Student Services Building, 269-387-4735 or 800-545-6005. Website: www.reslife.wmich.edu

WMU Apartments
Make inquiries directly to the WMU Apartment Office, 3506 Faunce Student Services Building, Western Michigan University, Kalamazoo, MI 49006-5079 or telephone: 800-882-9619 or 269-387-2175 or fax 269-387-4786. Website: www.wmich.edu/apartments

Off-Campus Housing
For information regarding off-campus housing, contact the Residence Life Office, Community Living, 3510 Faunce Student Services Building. Telephone: 269-387-2336; FAX: 269-387-2325. Website: www.ccl.wmich.edu

OFFICE OF INFORMATION TECHNOLOGY
The Office of Information Technology (OIT) encompasses a wide spectrum of computing and information technologies. In addition to supporting administrative computing functions on campus, OIT also services academic and educational computing needs at the University. This includes providing students with computer accounts with access to the Internet (for e-mail and World Wide Web), supporting open access computing facilities for student use, providing a wide variety of computing workshops, and supporting a computing Help Desk.

The Office of Information Technology is located on the third floor of the University Computing Center. Telephone 387-5430. The website is www.wmich.edu/oit

INTERNATIONAL PROGRAMS AND SERVICES
Western Michigan University annually hosts some two thousand international students and has a long tradition of international involvement across all colleges. Commitment to continued expansion of our international dimension is included in the university mission statement. The "international" key on the university's World Wide Web home page will take you to a comprehensive directory of international programs and services. Offices that administer international programs and services are conveniently located together in Ellsworth Hall.

Office of International Student and Scholar Services
Ms. Barbara Shouse, Intern Director
A411 Ellsworth Hall
Western Michigan University
Kalamazoo MI 49008-5176
Telephone: (269) 387-5865; FAX (269) 387-5899
http://www.wmich.edu/iss

The Office of International Student and Scholar Services 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
Career English Language Center for International Students (CELCIS)
Mr. Nick LaLupa, Director
2001 Ellsworth Hall
Western Michigan University
Kalamazoo MI 49008-5245
Telephone: (269) 387-5300. FAX: (269) 387-0630.
http://www.wmich.edu/osa/celcis

The Career English Language Center for International Students provides intensive English language instruction for prospective students who need further training in order to qualify for admission to Western Michigan University. Holders of F-1 visas in the CELCIS program must be enrolled full-time; resident aliens and holders of F-2 visas may attend CELCIS programs on a part-time basis.

CELCIS classes at various levels include: speaking and listening comprehension, grammar, academic reading and vocabulary building, academic writing, and research paper writing. Extra-curricular activities include monthly social hours, camping trips, home visits, and various social, sport, and cultural programs.

CELCIS operates four terms per year: two fifteen-week terms (fall and winter), and two seven-week terms (spring and summer). University Testing and Evaluation Services offers the institutional TOEFL at the conclusion of each term. CELCIS issues the Certificate of Eligibility for a visa (Form I-20 or IAP-66) specifically for admission to CELCIS programs. Admission to CELCIS does not imply admission to the Graduate College or to a degree program.

Contact the CELCIS office for application materials. (Materials are also available online.)

Office of Study Abroad (OSA)
Mr. Brett Berquist, Director
2002 Ellsworth Hall
Western Michigan University
Kalamazoo MI 49008-5245
Telephone: (269) 387-4800; FAX (269) 387-4806
http://www.wmich.edu/osa/celcis

The Office of Study Abroad operates a large number of programs varying in length from a few weeks to a full academic year. These programs include a growing number of graduate internship and field study programs. OSA offers financial assistance to support students at advanced levels in foreign languages offered at WMU, and for beginning study of languages not available at WMU as part of programs of study at institutions outside the United States.

Graduate 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 the Office of Study Abroad.

In addition to competitive financial aid programs, OSA provides a number of important services to WMU students preparing to study, intern, or do research outside the United States. Services include orientation programs, International Student Identity Card (ISIC), Youth Hostel Pass, insurance programs, and current information about conditions in countries of destination. OSA maintains an extensive research and information base on programs offered by other colleges and universities. The office also serves as a contact point between WMU students overseas and the university.

OFFICE OF MULTICULTURAL AFFAIRS, THE DIVISION OF

The Division of Multicultural Affairs, formerly known as the Division of Minority Affairs, promotes a supportive environment for racial/ethnic minority students by providing a range of services and programs that have a positive impact on their academic success and quality of life.

To enhance diversity in the community, the Division innovates and coordinates cultural programming and facilitates opportunities for learning and personal development for students at Western Michigan University. The Division's activities are designed to define and positively react to minority students' needs and impact their environment. By doing so, the Division has pursued the greatest opportunity for a successful and relevant educational experience.

For information, call 269-387-4420 or visit the office in Beal Hall, Room A-228, or visit the website www multicultural.wmich.edu.

The Hasenclever Institute collaborates with colleges, departments, and interdisciplinary programs to promote global, international, and area studies throughout Western Michigan University.

OFF-CAMPUS LIFE

The Office of Off-Campus Life responds to the diverse needs of the 72 percent or WMU students who reside off campus. Specifically, graduate students are provided assistance in locating a place to live. To aid students searching for rental housing or roommates, a computerized data base system has been developed. Students can access rental and roommate information through the World Wide Web. Listings of apartments, houses, sleeping rooms, students in need of roommates and those available as roommates are also maintained and printed for distribution.

Recognizing the significance of an adequate housing environment for all students, the University's housing program is supplemented with conflict resolution and educational programs as well as tenant/landlord services. For additional information regarding conflict housing, contact the Office of Off-Campus Life, Room 3510, Faunce Student Services Building. Telephone: 269-387-2336; Fax: 269-387-2325; World Wide Web site: http://www.ocl.wmich.edu

OFFICE OF OMBUDS

The University Ombuds office is an intervention agent and impartial person who helps students, faculty and staff resolve academic and non-academic concerns. The Ombudsman listens to you and discusses your question or concern. Provides you with information and advice on your question or helps you locate someone who can assist you; explains the University's policies and procedures and how they may affect you; follows up with you and others at the University to make sure your concern is resolved; and recommends changes in the institution that will make it more responsive to every member of the community. The basic principles of the University Ombuds are independence, impartiality, and confidentiality. The Ombudsman is authorized to make thorough investigations and has access to most University offices and records, reports and other documents in the University. No person shall suffer any penalty for seeking assistance from the Ombudsman. The office is located in 218 shadow center. Telephone: 387-5300.
SINDECUSE HEALTH CENTER

The Sindecuse Health Center is a student-orientated medical facility that exists to assist the University community members to achieve and maintain their overall health status. As a student attending Western Michigan University, you have access to high-quality, convenient health care through our many professional services. Our entire staff works as a team to assist you with your health care and health education needs. For a complete explanation of services, visit the Center’s website at www.wmich.edu/~shc.

Important Phone Numbers

Appointments: 387-3290
Information: 387-3287
Insurance Information: 387-3286
Pharmacy: 387-3201
Health Promotion/Health Info: 387-3263
Sports Medicine Clinic: 387-3248
HIV Antibody Testing: 387-4HIV

SPEECH, LANGUAGE, AND HEARING SERVICES

The Van Riper Language, Speech, and Hearing Clinic is a service program provided by the Department of Speech Pathology and Audiology for persons with communication disorders. It is located in the Sindecuse Health Sciences Center, 1000 Oakland Drive. Students may take advantage of diagnostic and therapeutic services by contacting the Clinic for an appointment. Telephone: 387-8047.

STUDENT ACTIVITIES AND LEADERSHIP PROGRAMS

The mission of the Student Activities and Leadership Programs is to enhance student learning and personal development by engaging students in intentionally purposeful academic and social activities. Student Activities and Leadership Programs has registered over 300 student organizations at WMU representing a diverse range of interests. We welcome you as a valued member of our community and are excited to be a part of your learning and personal development.

For detailed information, visit the website at www.saal.wmich.edu or visit the office, 2420 Faunce Student Services Building.

STUDENT DIRECTORY

The WMU Faculty/Staff/Student Telephone Directory is published and annually by the Office of Information Technology of the University. It is distributed during early November, without charge, to all students in residence halls and family housing units, and is available at the Information Center in the Seibert Administration Building. Individual listings in the WMU Student Directory contain the following information:

1. Name
2. Curriculum
3. Local address and telephone number
4. Home address

Students wishing to exclude any or all of the above information from the WMU Student Directory (printed and electronic) must fill out a Directory Exclusion Form in Room 3210, Seibert Administration Building, during the first five days of classes fall semester. During spring, summer, and summer I terms, students may restrict this information to academic use by filing out the Directory Exclusion Form during the first five days of classes.

SUBSTANCE ABUSE SERVICES

University Substance Abuse Services, located in the Sindecuse Health Center, provides an outreach and prevention program for Western Michigan University students concerned with their use, misuse, or abuse of alcohol and other mood-altering substances. Under the auspices of the University Counseling and Testing Center, Division of Student Affairs, the program offers information, education, training, counseling, and supportive therapy, referral and follow-up services to individuals and groups. Also offered are didactic groups to those students seriously interested in exploring their relationship with mood altering drugs (alcohol, marijuana, stimulants, narcotics, depressants and barbiturates) as well as groups for adult children of alcoholics.

University Substance Abuse Services, licensed by the State of Michigan Department of Consumer Resources and licensed by a nationally certified substance abuse therapist and professor of counseling. All services are free, unless they are court ordered, and completely confidential as required by state and federal law. Students are encouraged to make an appointment through the Sindecuse Health Center reception area or by calling 387-3257.

UNIVERSITY COUNSELING AND TESTING CENTER

Many important decisions and situations will confront students while they are at Western Michigan University. Students may need to make decisions regarding courses, curricula, and career exploration. They may become involved in social and personal situations that leave them feeling confused and undecided about their lives. It may be likely that the inherent stresses of university life will, at some time, interfere with academic achievement and personal growth. The University Counseling and Testing Center, located on the main floor of the Faunce Student Services Building, exists to help students decide effectively with such 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:

Personal Counseling to assist individuals in better understanding themselves and the emotional conflicts that may interfere with their everyday lives as students, to help them become more aware of alternative means of coping with conflicts, and to aid them in developing more satisfying and fulfilling lifestyles.

Educational Counseling to help students deal with conflicts concerning vocational planning and educational goals.

Career Counseling and Testing to provide students with the tools necessary to explore career possibilities 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 values, interests, 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.

The Career Exploration/Media Center contains a wide and varied selection of printed materials with an emphasis on self-understanding, career exploration and preparation, occupational information, and job trends. Included is a section of career and university catalogs, educational guides, and computer-aided guidance and information pertinent to career awareness. An extensive collection of professional test materials is also available for student/faculty review.

Training and Information Programs for graduate students and interns from the Department of Counselor Education and Counseling Psychology, School of Social Work, and Department of Psychology are available. Included in the training experience are case consultations, supervision of treatment sessions, didactic presentations and professional growth opportunities. The Counseling and Testing Center has accredited the Center's predoctoral internship program in professional psychology.

National Standardized Testing is conducted by the University Counseling and Testing Center. The following tests are offered: ACT, LSAT, GRE (subject exam), MCAT, IAAT, CPCU, CLEP, TOEFL, and academic skills exams are offered as needed. Standardized testing information is available at the Center; call 387-1872.

Test Scanning Services (optical scanning) for classroom exams and research data analysis is provided to the University community and guest Kalamaans. Information about scanning services is available; call 387-3910.

The Counseling and Testing Center is committed to the need for confidentiality in client/counselor communications. The Center is one of the few academic centers 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 (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. Students unable to make appointments during regular hours may request appointments by telephone (387-1850) or in person.

Website: www.ucct.wmich.edu

The Center attempts to service as many students as possible within staffing limitations.

UNIVERSITY LIBRARIES

Waldo Library, the main library at Western Michigan University, was built in 1958, expanded in 1967, and then extensively renovated and expanded in 1991. The Library is named after Dwight B. Waldo, the University's first president. In addition to Waldo Library, the University Libraries includes four branch libraries. The Education Library, in Sangen Hall, has over 586,000 items, and receives more than 60,000 periodicals. The Music and Dance Library, in the Dalton Center, houses over 38,000 books, musical scores, and periodicals, as well as over 19,400 audio and video recordings. The Archives and Regional History Collections Library, in East Hall on the East Campus, collects unique materials about the history of Southwest Michigan and the official records of the University. The Visual Resources Library, located in Sangen Hall, houses a collection of over 100,000 slides, most of which relate to the fine arts.

Each of these libraries supports teaching and research in disciplines related to the materials collected. Thus Waldo Library has resources and services supporting the University's undergraduate and graduate programs in arts, business, health and human services, social sciences, science, and engineering. University Libraries as a whole holds more than 3,920,000 volumes.

The major purpose of the University Libraries is to take an active role in the educational process at the University, and to provide facilities, materials, and an environment which will not only support the students' educational progress but also will encourage them to develop the habit of study.

Visit the Libraries' web page (http://www.wmich.edu/library) for more information about services and a listing of available databases and electronic resources.

UNIVERSITY RECREATION PROGRAMS AND FACILITIES

Student Recreation Center (269) 387-3760

The Student Recreation Center (SRC) is a student-oriented, multi-use facility programmed, designed, and constructed by Western Michigan University Students. Recreation 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 with over 100 pieces of state-of-the-art equipment; a recreational pool with attached swim pool, basketball court, indoor jogging track, basketball courts, volleyball and badminton courts, indoor tennis courts, 10 racquetball courts, aerobics room, multipurpose gyms, fitness testing laboratory, and much more. The SRC is equipped with a state-of-the-art electronic security system to help protect our student-funded facility from vandalism and to ensure that all users are properly authorized. Only ID cards belonging to individuals who have paid the facility fee may gain access and take advantage of programs and services.

In the facility:

**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 wallball. Equipment for various activities may be checked out with a valid ID card from Equipment Issue located in the SRC.

**Outdoor Recreation**
University Recreation also provides a lighted, 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 ID card from the SRC Equipment Issue.

**Intramural Sports**
Intramural Sports are available for students, faculty, staff, 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 which will help them to develop team building and leadership skills. These experiences permit participants to set goals, relate to others, participate in physical activity, and enrich their lives. Opportunities for leadership are available for students who wish to officiate contests.

**Fitness Programs**
Fitness classes are available for individuals interested in improving their health and physical development through safe and effective exercise programs. A variety of instructor-led classes are offered, including water exercise, high/low aerobics, step aerobics, stretch and tone classes, kickboxing, jump rope classes, and yoga. PhyStylist is a fitness-testing program designed exclusively for WMU students. The program offers free-of-charge fitness assessments and individual exercise program development for students who wish to develop and maintain healthy levels of physical fitness. The testing package includes health screening, blood pressure analysis, body composition, and physical assessments for flexibility, muscular strength and endurance, and cardiovascular endurance. A consultation is available to obtain personal exercise recommendations and guidelines based on current levels of physical fitness and personal goals.

**Fitness Weight Room**
Located in the SRC, the 8,000 square foot fitness/weight room contains a full line of variable resistance weight machines and free weights, computerized exercise bicycles, stair climbers, rowers, and elliptical machines. Student Exercise Specialists are available to instruct on proper use of the equipment and to provide exercise training guidelines to meet personal goals.

**Climbing Wall**
The WMU Climbing Wall is designed to challenge and teach participants about the unique sport of indoor climbing. The wall is a top-rope system where climbers are harnessed in for safety. SRC members can come feel the excitement of scaling a 45-foot wall. Participants may also complete a climbing clinic to learn proper harnessing and belaying techniques.

**Special Events**
The SRC conducts one or two special events each semester. These events may coincide with other University events or reflect a seasonal holiday theme. Games, activities, and contests are offered in an informal, celebrative atmosphere designed to provide interaction and tradition among the participants.

For more information on services and specific days and times of programs, pick up a SRC brochure or call 387-4REC. Current information may also be found on the web at <www.src.wmich.edu>.

**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 VA 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.

The Veterans' Certification Officer may be reached in the Office of the Registrar at (269) 387-4115.

**WRITING CENTER**
The Writing Center is part of the Center for Academic Support Programs. It provides writing assistance for students, faculty, staff, and other members of the WMU community.

The Writing Center exists for all WMU students (graduate and undergraduate) who choose to work on their writing. Because writing is such a complex act, students often concentrate on particular aspects of writing with each visit. They may work with a tutor on organization or focus; they may want to hone their style or find new ways to come up with topics or ideas for development; they may also work on the conventions of English.

To accommodate the needs of many students, the Writing Center offers three different types of appointments. Most popular is the drop-in appointment, which allows students to see a tutor immediately. Students may also choose to schedule appointments in advance or set up a regular weekly appointment with the same tutor. Students may choose to have a report sent to their instructors detailing their visit. The Writing Center tutors are glad to work with students on their papers; however, they will not copyedit or proofread papers for educational purposes.

The Writing Center also provides workshops on writing with sources and on proofreading techniques, and offers writing-related computer software. For questions about writing, call the Writers' Hotline at 387-4615 or send e-mail to (writing-center@wmich.edu).

The Writing Center is located in Room 1039 Moore Hall: telephone 387-4615.
COLLEGE OF ARTS AND SCIENCES

Thomas Kent, Dean
Wendy Ford, Associate Dean
James Gilchrist, Associate Dean

Academic Units:
Africana Studies
American Studies
Anthropology
Arts and Sciences
Biological Sciences
Chemistry
Communication
Comparative Religion
Economics
English
Environmental Studies, Environmental Institute
Foreign Languages
Geography
Geosciences
History
Mathematics
Medieval Institute
Philosophy
Physics
Political Science
Psychology
Public Affairs and Administration
Science Education, Mallinson Institute for Sociology
Spanish
Statistics
Women’s Studies

Vision
The College of Arts and Sciences seeks to create a challenging and intellectually vital learning community. Such a community engages students and faculty alike in a continuing discourse, providing focus for being active, informed, productive, creative, open-minded, and ethically responsible citizens in a complex, multicultural, and rapidly changing world.

The College of Arts and Sciences is committed to the support and enhancement of graduate education, undergraduate education, research, and public/professional service; informed in all dimensions by commitment to diversity, to collaboration, to social responsibility and to civility; and sustained by continuous development and recognition of the efforts of faculty, advising personnel, support staff, emeriti and alumni.

Mission
The College of Arts and Sciences, as a key component in a student-centered research university, integrates research, teaching, and service in a manner that supports the College’s vision by fostering the discovery, extension, dissemination, preservation, and application of knowledge. The College:

• Supports the personal and professional growth of students and faculty.
• Provides high quality teaching for the full range of the College’s educational responsibilities.
• Pursues basic and applied research in and across disciplines.
• Develops critical thinking, communication, research, aesthetic and creative abilities, problem solving, and multiple learning skills.
• Fosters the development of disciplinary, core knowledge.
• Provides students with the skills to communicate effectively across disciplines and cultures.
• Raises awareness about the social, cultural, environmental, and international contexts of knowledge to help students develop the skills to address the most pressing social, scientific, and moral problems of our society.
• Promotes high levels of professional integrity and general civility among faculty, staff, and students.
• Commits to diversity in the recruitment and retention of students and faculty.
• Serves as a resource to the university and local, state, national and global communities.
• Generates enthusiasm for lifelong learning.

Programs
Doctor of Philosophy in Evaluation

The Doctor of Philosophy in Evaluation is a collaborative effort of four colleges—Arts and Sciences, Education, 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 to identify and assign priorities to unmet needs; assess progress and identity areas requiring improvement; assess costs and seek ways to make services more efficient and cost-effective; document and assess outcomes; provide credible reports to accrediting/oversight bodies, and, in general, maintain accountability. Graduating students will receive their degree from one of the participating colleges, usually the one where their major advisor resides. Each student will have an advisory committee that will tailor that student’s 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 improvement.

Admission Requirements

1. Go to the WMU Admissions Office website and request an admission packet for the program. Alternatively, you can call the office (269-387-2000) or e-mail them, tell them you want to apply for the new interdisciplinary Ph.D. in Evaluation, and ask them to send you the self-managed application package.

2. On the application admission form, under “program of study desired,” write “IEV” (this is the code for Interdisciplinary Evaluation). Otherwise, just follow all instructions. If you have questions, please direct them to the Admissions Office.

3. The admissions application packet includes instructions for sending materials to TWO locations: The Admissions Office and the department. The application going to the Admissions Office should be completed as stated in the instructions. (Students who are currently at WMU do NOT need to send in transcripts, or GRE scores—if they are already on file.)

4. The application form coming to the department should be addressed to: Ph.D. in Evaluation (Interdisciplinary), The Evaluation Center, Western Michigan University, Kalamazoo, MI 49008-5237 (be sure to include this 4-digit zip code extension to ensure timely delivery).

5. The departmental application form should contain:
   - A completed WMU application form (included in the self-managed application packet)
   - A completed program application form (available in Word or in PDF)
   - Photocopies or unofficial copies of graduate and undergraduate transcripts—these must indicate any degrees completed (official transcripts should go in the packet to the Admissions Office)
   - A current curriculum vitae
   - GRE general scores (if you have taken the GRE in the past and still have an official copy of your scores, you may submit that; scores are not required to be less than 5 years old). Please note that there is no waiver of this requirement even if you already have a graduate degree from a U.S. university. There is no minimum GRE score required; however, entry into the program will be competitive and will be based partially on GRE scores. If you feel that one or more of your scores is not an adequate gauge of your ability, please submit additional supporting evidence (e.g., a writing sample or technical report).
   - Please see the ETS Website for information about scheduling and taking the GRE.
   - A 1000-word essay outlining your career goals and reasons for interest in the program, including any preferences for advisors you would particularly like to work with.
   - A recent writing sample on which you are the sole or first author (e.g., a technical report, a publishable paper, or a class project). It is helpful if this provides additional evidence of the abilities we use to judge applications (see the list of selection criteria above)
   - Four letters of recommendation from academic or professional sources (preferably in sealed envelopes with the recommendation writer’s signature across the envelope seal; please ask your referees to address the selection criteria)
   - If you are seeking financial support, include a completed doctoral associateship application form and/or a one-page application letter for a research assistantship (please indicate your areas of interest, skills, and knowledge; and availability for work)

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 coursework on which the student earned a grade of B or better; in exceptional cases an additional 12 units may be transferred 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:
     - 3-6 hours of program/evaluation courses
     - 3-6 hours of program/intervention evaluation
     - 3-6 hours covering the social, political, and cultural contexts of evaluation
     - 12-18 hours of specialized evaluation courses
     - 9 hours of practical evaluation experience
   - Passed both written and oral comprehensive exams (covering the competencies listed later on this page)
   - Completed successfully 12 hours of doctoral dissertation study, plus an optional 3 hours of independent study in preparation for oral qualifying exams.
   - Written and successfully defended a dissertation that advances the theory, methodology, and/or practice of evaluation.
   - 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 their advisory committee. This requirement will usually be fulfilled as part of the practical experience; however, other options are possible in exceptional cases.)
   - Completed with the program’s residency enrollment requirements (i.e., 2 semesters of enrollment in at least 6 units of course work per semester within one 12-month period)
   - 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 laying out, oral presentation skills, linking evaluation to decision making, maximizing evaluation utility)
- **Metaevaluation and Evaluation Standards** (use of professional standards and checklists for evaluation and metaevaluation)
- **History and Nature of the Evaluation Profession** (the roots of the evaluation profession, its development to date, future directions)

Project Work
Students must complete 9 credit hours of practical evaluation experience (usually all EVAL 712; may include 3 units of EMR 652). 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 be "hit the ground running" as competent practitioners.

**Evaluation Courses (EVAL)**

Open to Graduate Students Only

**EVAL 600 Foundations of Evaluation**

3 hrs.

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 will 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.

**EVAL 601 Interdisciplinary Seminar in Evaluation**

1 hr.

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 will include: the history and nature of the evaluation profession, evaluation standards, meta-evaluation, 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. May be repeated for credit up to a maximum of 4 credits.

**EVAL 697 Advanced Evaluation: Variable Topics**

1-3 hrs.

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. May be repeated for credit with a different topic. **Prerequisite:** Permission of instructor. **Prerequisites:** SPED 537 or equivalent and consent of department.

**AFRICANA STUDIES**

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Open to Graduate Students Only

**AFS 600 Seminar in Black Studies**

4-6 hrs.

In-depth study of specific areas of Black American life and culture. Since Black Americans have been involved in the total life of the nation, special study is called for. There are at least two dimensions which send themselves to special study. The first and most obvious is that of unusual achievement by persons of known and identifiable African ancestry. A second and more elusive dimension is Black "influence" positively and negatively in American life and culture.

**AFRICANA STUDIES**

Dr. Lawrence T. Potter, Jr., Director
Main Office: 3061 Moore Hall
Telephone: 387-2665
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Deborah H. Barnes
Almos Beyan
Mustafa Miezaler
Lawrence T. Potter, Jr.
William F. Santiago-Valles
Benjamin C. Wilson

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ANTHROPOLOGY 41

M.A. IN ANTHROPOLOGY:

NON-THESIS TRACK
1. Complete at least thirty-six hours in anthropology. Cognate courses may be substituted with approval from the graduate advisor.
   Thirty-six hours: 10 classes and 6 hours of
   Internship.
2. ANTH 601, 602, 603, and 604 are required.
3. Six hours of Internship or Practicum (ANTH 699) is required.

Graduate 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, 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 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 Ethnichistory Seminar (HIST/ANTH 609) 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 500 Topics in Anthropology
ANTH 506 Social Archaeology
ANTH 506 Archaeology of Gender
ANTH 520 Anthropological Theory
ANTH 583 Anthropology and History
ANTH 602 Archaeology Seminar
ANTH 699 Archaeological Field School
HIST 600 Historical Method
HIST 601 Historiography
HIST 602 Historical Theory
HIST 625 Problems in Cultural Resource Management
HIST 642 Oral History
HIST 644 Material Culture and the Built Environment
HIST 646 Historical Archaeology
HIST 689 Seminar in Public History
Anthropology Courses (ANTH)

ANTH 510 Human Biology
3 hrs.
An advanced course in the method and theory involved in the study of the biology of Homo sapiens. Aspects of Human Biology that will be studied from a biocultural perspective include growth and development, infectious disease, nutrition, adaptation to stressful environments, genetics, and demography. Prerequisites: Junior/senior status and 12 hours of Anthropology, including ANTH 240 or consent of instructor.

ANTH 520 Anthropological Theory
3 hrs.
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 ethnographic research 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 from the early British, French, and American schools. Social attention will be given to current theoretical controversies that continue to define the political and ethical concerns of working with human subjects. Prerequisites: Junior/senior status and 12 hours of Anthropology, including ANTH 240 or social science equivalent.

ANTH 521 Nationalism, Invented Tradition, and Self-Identity
3 hrs.
This course introduces students to the theoretical debates concerning nationalism by evaluating the works of authors such as Anderson, Hobbswam, and Geiniger and by examining select case studies of nationalism in a number of world areas. Emphasis will be on nationalism as a cultural as well as political process so its relation to invented tradition and self-identity will be highlighted. Prerequisites: ANTH 240, graduate standing or consent of instructor.

ANTH 522 Poverty, Power, and Privilege
3 hrs.
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 stresses 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, post-colonial, 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.

ANTH 525 Spirits and Medicine
3 hrs.
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 its role in collusion and trance, and methods of divination. Prerequisite: ANTH 240.

ANTH 530 Research Methods
3 hrs.
An in depth consideration of the research methods 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. Prerequisites: Junior/senior status 12 hours of Anthropology.

ANTH 531 Medical Anthropology
3 hrs.
This course starts with the premise that illness is as much cultural as it is a biological phenomena and explores the ways in which different societies, including our own, perceive and manage illness and disease. The course seeks to understand the intersection of cultural, social, and political variables in the experience of illness and the practices associated with healing. Specific topics include ethnomedicine, spiritual healing, primary health care in the developing world, the symbolism of modern medicine, the political economy of health care and AIDS, and inequality. Prerequisites: Junior status, 12 hours of Anthropology, and ANTH 240 or consent of instructor.

ANTH 535 Ethnohistory and Archaeology of the Caribbean
3 hrs.
The Caribbean is a region of some 30 million people living in the islands stretching from the Bahamas to Trinidad, as well as the continental enclaves of Belize, Surinam, Guyana, and French Guiana. Despite its great cultural, racial, and linguistic diversity, the Caribbean exhibits certain broad social and economic similarities born of its history of slavery and colonialism. Using a wide range of archaeological, documentary, and ethnographic sources, this course seeks to identify common themes in the cultural history of the Caribbean. We will explore the way European, African, and Asian cultures merged in the Caribbean to create a new society. We will examine culture contact between Europeans and the native peoples of the Caribbean and look at the social and economic impact of sugar production on the region. Most importantly, we will investigate the rise and fall of Caribbean slavery. In the early session, students will be introduced to the Caribbean region. Students will also be given some rudimentary instruction in ethnographic methods. Prerequisites: Junior/senior status and 12 hours of Anthropology.

ANTH 540 Ethnographic Research Methods
3 hrs.
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. Prerequisites: Junior/senior status, 12 hours of Anthropology, and ANTH 240 or consent of instructor.

ANTH 542 Development Anthropology
3 hrs.
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. Prerequisites: Junior/senior status, 12 hours of Anthropology, and ANTH 240 or consent of instructor.

ANTH 545 Topics in Sociocultural Anthropology
3 hrs.
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. Prerequisites: Junior/senior status, 12 hours of Anthropology, and ANTH 240 or consent of instructor.
ANTH 550 Human Evolution
3 hrs.
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. Prerequisites: Junior/senior status, 12 hours of Anthropology, and ANTH 265.

ANTH 551 Evolution of Human Culture
3 hrs.
This course is designed to provide a platform for discussion of hominid and early modern human culture. Questions for discussion include: Do non-human primates have culture? Is reproductive behavior related to the development of human culture? How can early hominid behavior be modeled? What constitutes modern human behavior in the archaeological record? The course will focus on three problem areas in Old World Prehistory: 1) Chimpanzee material culture and early hominid Oldowan assemblages; 2) the Middle Paleolithic and the origin of modern humans; and 3) the Upper Paleolithic and the cultural revolution. Prerequisites: Junior/senior status and 12 hours of Anthropology, including ANTH 210 or ANTH 250 or permission of instructor.

ANTH 552 Forensic Anthropology
3 hrs.
The study of biological anthropology as it applies to the legal system. Primary emphasis will be on skeletal and dental identification, facial reconstruction and analysis of time since death. Courtroom procedures and responsibilities of the expert witness in the legal system will be covered. Prerequisites: Junior/senior status, 12 hours of Anthropology, and ANTH 250 or consent of instructor.

ANTH 555 Topics in Biological Anthropology
3 hrs.
A consideration of the biological relationships of specific population groups or general problems in human biology (e.g., human genetics, human growth and constitution, palaeopathology, dental anthropology). Topic will be announced each semester. May be repeated for credit with different topics. Prerequisites: Junior/senior status, 12 hours of Anthropology, and ANTH 250 or consent of instructor.

ANTH 583 Anthropology and History
3 hrs.
The course evaluates the relationship between anthropology and history through reading selected works in each discipline. Theoretical and methodological similarities and differences will be addressed as well as how each discipline writes about the "other." Special attention will be given to the rhetorical devices employed to make ethnohistorical arguments. The class explores how objects relate to people's understandings of themselves as individuals and participants in specific cultural communities. Students will read classic and contemporary anthropological writings about material culture and will spend time discussing the differences between cultural and archaeological approaches to understanding objects. Prerequisite: Previous course work in anthropology or history.

ANTH 609 Ethnohistory Seminar
3 hrs.
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 that the ethnohistorian can 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. Course is cross-listed with HIST 609.

ANTH 610 Topics in Archaeology
3 hrs.
An intensive study of a selected topic or emerging field in archaeology. Topics will vary and will be announced in the Schedule of Course Offerings. May be repeated for credit with different topics. Prerequisite: Consent of instructor.

ANTH 640 Topics in Sociocultural Anthropology
3 hrs.
An intensive study of a selected topic or emerging field in sociocultural anthropology. Topics will vary and will be announced in the Schedule of Course Offerings. May be repeated for credit with different topics. Prerequisite: Consent of instructor.

ANTH 650 Topics in Biological Anthropology
3 hrs.
An intensive study of a selected topic or emerging field in biological anthropology. Topics will vary and will be announced in the Schedule of Course Offerings. May be repeated for credit with different topics. Prerequisite: Consent of instructor.

ANTH 660 Archaeological Field School
3 hrs.
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 permission of instructor, but does not count toward M.A. program requirements twice. Prerequisite: ANTH 210 or consent of instructor.

ANTH 688 Independent Readings in Anthropology
1-3 hrs.
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. Prerequisite: Graduate standing.

ANTH 699 Independent Research in Anthropology
1-3 hrs.
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. Prerequisite: Graduate standing.

Open to Graduate Students Only Please refer to The Graduate College section for course descriptions.

ANTH 700 Master's Thesis
6 hrs.

ANTH 710 Independent Research
2-6 hrs.

ANTH 712 Professional Field Experience
3-6 hrs.
Prerequisites: Completion of master's degree course work, including one methods class
The Master of Science in Biological Sciences enables 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 career goals. The degree may serve as preparation for career goals.

Admission Requirements
To be admitted in 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 (616) 387-6265 and the Office of Admissions and Orientation at (616) 387-2000. 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 earned a Bachelor's degree from an accredited institution with an overall grade point average of at least 3.0, and taken appropriate courses in biology, chemistry, physics, and mathematics.
3. Official scores for the verbal, quantitative, and analytical sections of the Graduate Record Exam (these must be submitted to the Office of Admissions and Orientation).
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.

Admission Requirements
1. Official transcripts from previous colleges and universities indicating applicant has earned a Bachelor's degree or higher from an accredited institution with an overall grade point average of at least 3.0 (or vita outlining related industry experience).
2. Applicants will need to show that they have a sufficient background in biology, chemistry, and mathematics to handle graduate level courses in these areas. This can be accomplished either through proof of completion of undergraduate courses or extensive work experience. Students from areas outside biology or chemistry may apply, but are likely to be asked to enroll in undergraduate prerequisite course work.
3. Three letters of recommendation and cover letter expressing applicant's career goals.

Program Requirements
The Master of Science in Biological Sciences (Thesis Option) requires 33 hours of course work, including presentation of research results at a departmental seminar. The Master of Science in Biological Sciences (Non-Thesis Option) requires 33 hours of course work, including defense of research results at an oral examination, and preparation of a manuscript suitable for publication in a refereed journal (in consultation with the student's thesis committee).

Required Courses (11 hrs.)
There are 6 graduate core courses: BIOS 611, BIOS 612, BIOS 613, BIOS 614, BIOS 615 and BIOS 616. Master's students are required to take 3 of these 6, 1 from each of three pairs: BIOS 611 Eukaryotic Cell Biology or BIOS 612 Prokaryotic Cell Biology; BIOS 613 Animal Physiology or BIOS 614 Plant Physiology; and BIOS 615 Ecology or BIOS 616 Evolution. In addition, each student is required to take 2 hours of BIOS 605 Biological Sciences Colloquium.

Elective Courses (16 hrs.)
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.

Research Requirement (6 hrs.)
Thesis Option: BIOS 700 Master's Thesis (6 hrs.)
Non-Thesis Option: BIOS 710 Independent Research (6 hrs.)

Master of Science in Molecular Biotechnology

Advisors:

John Spitsbergen, Graduate Advisor Room 3052, Haenicke Hall
Brian Tripp, Program Coordinator Room 3435 Wood Hall

The Master of Science in Molecular Biotechnology is designed to provide students with training and experience in areas of biology and health sciences that require cross-disciplinary skills due to the large volumes of information collected during research. The High Throughput Screening Option provides training and experience in concepts and methods from molecular and cellular biology, chemistry, instrumentation, and statistics to rapidly screen vast chemical libraries for biological activities. This process is an important component of pharmaceutical and biotechnology research and development.

Admission Requirements
Application materials may be obtained from the Office of Admissions and Orientation (Graduate Admissions) and from the graduate advisor, Department of Biological Sciences. International students should obtain admission materials from the Office of International Student Services and the graduate advisor, Department of Biological Sciences.

Conditions stated under 1 or 2 below must be met for regular admission to the Biological Sciences Ph.D. program.

1. For persons possessing a bachelor's degree from an accredited college or university:
   a. Grade point average of 3.0 or higher.
   b. Scores on the verbal, analytical, quantitative, and biology sections of the Graduate Record Examination.
2. Courses as follows:
   a. Appropriate courses in the biological sciences as determined by the Graduate Advisor.
   b. Organic chemistry
   c. Two courses in physics with laboratory
   d. Two mathematics courses, including calculus.
   e. Three letters of recommendation.
1. Doctoral Research composed of at least 15 hours of 695, 700-level courses (Graduate Research) and at least 15 hours of BIOS 730 (Doctoral Dissertation).
2. Satisfactory performance on the research tools requirement.
3. Successful completion of defense and of the research proposal.
4. Successful completion of Comprehensive Examination.
5. Successful verbal defense of dissertation and approval of the dissertation by the Dissertation Committee.
6. Any other requirements as specified by the Graduate College.

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.

Biological Sciences Courses (BIOS)
Open to Undergraduate and Graduate Students
All 500-level courses have the following prerequisites: Junior/senior standing and at least 12 credits in biology, including the specific prerequisite for each course.

BIOS 518 Endocrinology 3 hrs.
A survey of the hormonal integration of organ-system function, including the chemical nature of these secretions, the cellular and biochemical mechanisms of hormone actions, and the endocrine feedback control mechanisms. The regulatory nature of hormones in developmental processes, in adaptation, and in disease processes will be stressed. Prerequisite: BIOS 350; biochemistry is recommended.

BIOS 524 Molecular Genetics 3 hrs. Fall (alternate even years)
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. Prerequisites: BIOS 312 Microbiology and BIOS 250 Genetics, or consent of instructor.

BIOS 525 Microbial Ecology 3 hrs.
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 includes computer usage with the web. Prerequisites: BIOS 252 or BIOS 312 (or equivalent) and junior, senior, or graduate student standing; or consent of instructor.

BIOS 526 Molecular Biology Laboratory 3 hrs.
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. Prerequisites: BIOS 250 Genetics, BIOS 312 Microbiology, CHEM 375 Organic Chemistry I, CHEM 376 Organic Chemistry Lab I, and junior, senior, or graduate student standing.

BIOS 531 Biology of Aging 3 hrs.
This course is designed to provide students with an understanding of the aging process. The lectures will emphasize the nature of 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. Prerequisite: An introductory physiology course.

BIOS 534 Virology 3 hrs.
A study of the classification, structure and chemistry of viruses. Emphasis will be placed on the cell-virus interaction leading to the disease process or cellular alterations in mammalian systems. Prerequisite: BIOS 312; biochemistry is recommended.

BIOS 536 Immunology 3 hrs.
A study of the biological and biochemical mechanisms of the immune response and the chemical nature of antibodies, antigens, and their interaction. Emphasis will be placed on in vitro and in vivo humoral and hypersensitivity reactions. Prerequisite: BIOS 312; Biochemistry is recommended.

BIOS 547 Ornithology 3 hrs.
An introductory course that explores both scientific and popular aspects of bird study. Life history, behavior, ecology, and identification are emphasized.

BIOS 549 Field Ecology 3 hrs.
Field studies of forest, native grassland, wetlands, and other local ecosystems. Plant and animal composition, geological history, human effects, succession, and other aspects of the structure and functioning of ecosystems are introduced. Field ecological methods are emphasized. Prerequisite: BIOS 301 or equivalent.

BIOS 553 Limnology 3 hrs.
Biological, chemical, and physical aspects of lakes, ponds, and streams. Ecological relationships of invertebrate animals and lower plants are emphasized. Prerequisite: BIOS 151.

BIOS 557 Water Pollution Biology 3 hrs.
A comparison of organisms which live in clean waters as contrasted with those in polluted waters. Streams, lakes and ponds will be studied. Water conditions will be analyzed, and the use of biological indicators will be studied. The course will include field trips, laboratory work and lecture presentations. Prerequisite: BIOS 202.

BIOS 559 Neurobiology 4 hrs. Fall
The substrate of behavior will be examined in this interdisciplinary survey of neural structure and function across molecular, cellular and systems levels. There will be a strong emphasis on understanding mechanisms in different animal models. Lectures 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. Prerequisite: BIOS 350 and college-level...
courses in Physics and Biochemistry, or consent of instructor.

BIOS 560 Toxicology
3 hrs. Fall
Through a lecture/discussion format, the means by which toxicants exert their effects on mammalian, aquatic and ecological systems will be explored. Topics will include bioaccumulation, distribution and excretion of chemicals in the body, the role of metabolism in enhancing or reducing toxicity, mechanisms of toxicity and the effects of toxicants on the major organ systems. Chemodynamic processes which control exposure of organisms will be presented in the context of risk assessment, and the problems inherent in predicting and quantifying risks will be discussed. This course is cross-listed with CHEM 556.
Prerequisites: BIOS 250, and chemistry through biochemistry, or permission of instructor.

BIOS 561 Pharmacology
3 hrs. Winter (alternate years)
The study of the mode of action of drugs in the body. Topics may include 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. Prerequisites: BIOS 350 and a course in organic chemistry.

BIOS 570 General Pathology
4 hrs.
An introduction to pathology which describes the structural and biochemical changes occurring in cells and tissues following injury or disease. Prerequisites: BIOS core curriculum and organic chemistry.

BIOS 574 Developmental Biology
4 hrs. Spring
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 manipulation of embryos. Prerequisite: BIOS 250.

BIOS 597 Topics in Biological Sciences
3-4 hrs.
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 Graduate Students Only

BIOS 601 Special Investigations (various areas)
2-6 hrs.
An independent study in one of the various specialities represented by members of the department. The field in which work is offered will be indicated on the student's record. May be repeated for credit up to a maximum of six hours. Prerequisite: Consent of instructor.

BIOS 602 Seminar: Variable Topics
2-6 hrs.
Several seminars in various areas of Biological Sciences will be offered. The student's record will indicate the seminars in which he/she has participated. May be repeated for credit. Prerequisite: Consent of instructor.

BIOS 605 Biological Sciences Colloquium
1 hr.
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 2 hours. Graded on a "Credit/No Credit" basis. Prerequisite: Admission to a department degree program.

BIOS 610 Teaching of Biological Sciences
1-4 hrs.
This course will provide instructional techniques for the teaching of Biological Sciences at the college or secondary level. May be repeated for credit. Prerequisite: Consent of instructor.

BIOS 611 Eukaryotic Cell Biology
3 hrs.
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 workings of eukaryotic cells. Prerequisite: A course in biochemistry.

BIOS 612 Prokaryotic Cell Biology
3 hrs.
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. Prerequisites: A course in biochemistry and a course in microbiology or consent of instructor.

BIOS 613 Animal Physiology
3 hrs.
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. Prerequisite: A course in physiology or consent of instructor.

BIOS 614 Plant Physiology
3 hrs.
An advanced topics course covering the current research emphasis on the physiology, molecular biology, environmental biology, biochemistry, and cell biology of plants. Prerequisite: Biochemistry.

BIOS 615 Ecology
3 hrs.
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. Prerequisite: A course in Ecology or consent of instructor.

BIOS 616 Evolution
3 hrs.
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. Prerequisites: A course in genetics and a course in ecology or consent of instructor.

BIOS 620 Mutagenesis/Carcinogenesis
3 hrs.
Through lectures, presentations by students, and reading of the current literature, the mechanism of action, impact on human health as well as practical aspects of detection of mutations and carcinogens are examined. Prerequisites: A course in genetics and a course in biochemistry or consent of instructor.

BIOS 630 Biological Imaging
3 hrs.
A technique-oriented course stressing preparatory procedures and use of various biological imaging methods. These will include both transmission and scanning electron microscopy, fluorescence microscopy, laser-scanning confocal microscopy, and image analysis. Prerequisite: Consent of instructor.

BIOS 632 Advanced Techniques in Electron Microscopy
4 hrs.
A laboratory course emphasizing currently developing technology. This course is designed for graduate students who have a working knowledge of electron microscopy and its application to biologic problems. The course will be personalized in instruction in techniques of autoradiography; protein tracer, such as peroxidase, ferritin, lanthana, etc.; special tissue preparations, such as in vivo perfusion, varied fixatives, varied embedding material, etc.; and particulate materials preparation. The student will conduct detailed examinations of his/her preparations and prepare critical critiques. Prerequisite: Consent of instructor.

BIOS 633 Topics in Biological Sciences
3 hrs.
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. Students may take one or all topics offered for credit. Prerequisite: Consent of instructor.

BIOS 699 Laboratory Rotations
1-4 hrs.
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.

Open to Graduate Students Only Please refer to The Graduate College section for course descriptions.

BIOS 700 Master's Thesis
6 hrs.

BIOS 710 Independent Research
2-6 hrs.

BIOS 712 Professional Field Experience
2-12 hrs.

BIOS 730 Doctoral Dissertation
15 hrs.

BIOS 735 Graduate Research
2-10 hrs.

BIOS 737 Advanced Techniques in Electron Microscopy
4 hrs.

BIOS 832 Advanced Techniques in Electron Microscopy
4 hrs.
Advisors:
The Master of Science in Chemistry is a research degree designed for persons intending to take a leadership role in teaching and/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 or 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 Admissions and Orientation Graduate Admissions and to the department. 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 be used in the determination of admission and financial support.

Program Requirements

The student is required to elect twenty hours in the field of Chemistry, including the Master's Thesis. The Chemistry hours may be 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 elected):

1. CHEM 505, Chemical Literature.
2. CHEM 506, Chemical Laboratory Safety.
3. CHEM 520, Instrumental Methods in Chemistry.
4. CHEM 515, Inorganic Chemistry or CHEM 550, Biochemistry I.
5. CHEM 601, Graduate Seminar. (Attendance required every semester.)
6. Three 600-level courses from three different divisions (Analytical, Biochemistry, Inorganic, Organic, and Physical), including one course in the division of the Master's Thesis.
7. CHEM 700, Master's Thesis (6 hrs.).

The requirement for any of the above 500-level courses is 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 department 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 and/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 or 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 Admissions and Orientation Graduate Admissions and to the department. 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 be used in the determination of admission and financial support.

Program Requirements

1. After admission, the student will be required to take standardized placement examinations. Identified deficiencies, if any, will be remedied with appropriate course work determined by an academic advisor.
2. 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 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.
3. 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) graduate level courses must be completed satisfactorily.

Fifteen (15) hours of doctoral dissertation research is required. The remaining hours will be completed through a combination of coop/internship experiences and/or special research projects 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 3.0/4.0 to meet graduation requirements. The following describes the distribution of credit hours for the degree.

a. Chemistry courses
   • Three (3) courses with environmental application (9 hrs.)
   • Four (4) chemistry courses that emphasize a major field (12 hrs.)

b. Cognate courses
   • Two (2) courses from outside the department (6 hrs.)

c. Other
   • Seminar credit (1 hr.)
   • Chemical literature (2 hrs.)

d. Special research projects or coop/ internships (1.5 hrs.)

e. Doctoral dissertation (15 hrs.)

4. 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.

a. Eight (8) cumulative examinations (CUMEs) will be given in each academic year.

b. On each examination, there will be offered a question from three of the five major areas of study: analytical chemistry, biochemistry, inorganic chemistry, organic chemistry, and physical chemistry. The student will choose any two (2) questions to answer.

c. The student must pass twelve (12) CUME questions by the time the student has completed the chemistry courses (generally within the first three years of the program). At least three (3) of the twelve (12) questions must be from an area outside the student's concentration.

d. The student must pass at least two (2) CUME questions by the end of the first year.

e. The student must pass at least four (4) CUME questions before standing for the research proposal defense.

5. Within the first two years, the student will be required to present a critique seminar on a paper or papers from the current literature. Upon successful completion of the seminar, a passing grade will be received for seminar credit.

6. The student, after successful completion of no less than four (4) CUME questions, 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.

7. 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:

a. Any deficiencies identified by the entrance examinations.

b. At least five (5) of the seven (7) required chemistry courses with a minimum course grade point average of 3.0.
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:

a. 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.

b. 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.

c. 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.

d. Masters the design, repair, and development of chemical instrumentation used as part of an upper-level course or in a research project.

e. 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 401 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 satisfactorily defend a dissertation on a research topic approved by the dissertation committee.

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.

Chemistry Courses (CHEM)

Open to Undergraduate and Graduate Students

CHEM 505 Chemical Literature

2 hrs.

An introduction to the use of the various types of chemical literature such as journals, abstracts, monographs, government and institutional publications, and patents. Both manual and computer search techniques are employed in the course of completing assigned problems involving literature searches in analytical, biological, inorganic, organic, and physical chemistry fields. Prerequisite: Twenty-three hours of chemistry.

CHEM 506 Chemical Laboratory Safety

1 hr.

A study of toxic, corrosive, flammable, explosive, electrical, mechanical, thermal, and radiant energy hazards frequently encountered in chemical laboratory work. Emphasis is placed on precautionary methods to avoid damaging accidents and on emergency procedures to apply when accidents occur. Prerequisite: Twenty-four hours of chemistry.

CHEM 550 Topics in Chemistry

3 hrs.

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. Prerequisite: Sixteen hours of chemistry or consent of instructor.

CHEM 515 Inorganic Chemistry

3 hrs.

This course, along with CHEM 570 and CHEM 575, 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 570 and to be registered simultaneously in CHEM 575. Prerequisite: CHEM 431 or permission of instructor.

CHEM 520 Instrumental Methods in Chemistry

3 hrs.

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. Four hours of laboratory per week. Prerequisites or concurrent enrollment: CHEM 431, 436.

CHEM 525 Techniques in Water Analysis

2 hrs.

Analytical techniques and methodology commonly used to determine water quality are presented. Modern instrumental methods are stressed with particular emphasis on spectroscopic and chromatographic measurements. Laboratory provides practical experience in application of principles discussed in lecture. Not available to Chemistry majors. Prerequisite: CHEM 377.

CHEM 526 Chemical Separations

3 hrs.

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. Prerequisite: CHEM 377.

CHEM 540 Biogeochemistry

3 hrs.

An advanced survey of major current research topics in biogeochemistry. Examines chemical interactions among waters, minerals, and life in the aquatic and geologic environment. Prerequisites: CHEM 112 and CHEM 113 or CHEM 525, or permission of the instructor.

CHEM 550 Biochemistry I

3 hrs.

The chemistry, properties, and molecular biology of proteins and nucleic acids. Includes discussions of amino acids, enzymes, and biochemical energetics. Prerequisites: CHEM 377, 378, and 430.

CHEM 551 Biochemistry I Laboratory

4 hrs.

This course consists of 550 plus lab. Experiments involve more advanced techniques and experimentation than in 356 laboratory. Emphasis will be on purification and properties of proteins and nucleic acids. Prerequisites: CHEM 377, 378, and 430.

CHEM 554 Biochemistry II

3 hrs.


CHEM 558 Toxicology

3 hrs. Fall

Through a lecture/discussion format, the means by which toxicants exert their effects on mammalian, aquatic and ecological systems will be explored. Topics will include bioaccumulation, distribution and excretion of chemicals in the body, the role of metabolism in enhancing or reducing toxicity, mechanisms of toxicity and the effects of toxicants on the human systems. Chemodynamic processes which control exposure of organisms will be presented in the context of risk assessment, and the problems inherent in predicting and quantifying risks will be discussed. This course is cross-listed with BIOS 560.

Prerequisites: BIOS 350, and chemistry through biochemistry, or permission of instructor.

CHEM 570 Advanced Organic Chemistry and Spectroscopy

3 hrs.

This course, along with CHEM 515 and CHEM 575, provides a capstone chemistry experience for undergraduates. The course expands on fundamentals of organic reactions and mechanisms through investigation of molecular structure and reactivity. Students will gain experience in modern spectral interpretation and will learn to use the organic chemical literature and databases. Prerequisites: CHEM 377, 378, 431 and 24 hours of Chemistry.

CHEM 575 Advanced Chemical Synthesis

2 hrs.

This course provides a synthetic laboratory experience for undergraduates in conjunction with CHEM 570 and CHEM 575 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 570 be taken before CHEM 575 to prepare students for spectral interpretation. Prerequisites: CHEM 377, 378, 431, 520 or permission of the instructor.

CHEM 578 History of Chemistry

3 hrs.

This course is taught from the point of view of the history of chemical theory in which the evidence for the theories is critically presented. Prerequisites: Sixteen hours of chemistry, including CHEM 570, 371 and CHEM 375, 376.

CHEM 590 Special Problems in Chemistry

2 hrs.

Research work on a problem in chemistry in association with a faculty member. May be repeated for credit. Graded on a Credit/No Credit basis. Prerequisites: Twelve-four hours of chemistry, which includes CHEM 436, and approval of the department chairperson and a faculty director.

CHEM 601 Graduate Seminar

1 hr.

Graduate seminar in chemistry. Required of all candidates for advanced degrees in chemistry. Graded on a Credit/No Credit basis. (Two semesters; 1 hr. credit.);

CHEM 609 Advanced Topics in Chemistry

1 hr.

Topics are presented at a more advanced level than that used for undergraduate courses. Repre-
sentative topics would be Organometallic Chemistry, Theories of Liquids and Solutions, Organic Quantum Chemistry, etc., the offering of which would depend on student interest. Repeatable for credit. Prerequisite: Consent of instructor.

CHEM 610 Advanced Inorganic Chemistry 3 hrs.
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. Prerequisite: CHEM 515.

CHEM 611 Advanced Inorganic Chemistry 3 hrs.
The chemistry of the transition elements. Consideration of the electronic and magnetic states of the transition metals and their compounds; the symmetry, stability, and reaction mechanisms of coordination compounds; application of bonding theories; systematic chemistry of the transition and inner transition elements. Prerequisite: CHEM 515.

CHEM 622 Theory of Analytical Chemistry 3 hrs.
A course in the fundamental principles underlying chemical methods of analysis. Special emphasis is placed on equilibria, kinetics, and mechanisms of the important types of chemical reactions (acid-base, precipitation, complex formation, and redox) involved in chemical analysis; on methods of separation (precipitation, electrodialysis, and distillation techniques); and on the application of statistical methods of sampling, experiment design, and interpretation of results. Prerequisite: CHEM 431.

CHEM 624 Analytical Spectroscopy 3 hrs.
A comprehensive treatment of those instrumental techniques which are based upon either the emission or absorption of energy by matter. Emission spectroscopy; Raman spectroscopy; mass spectrometry; ultraviolet, visible, and infrared absorption spectroscopy; fluorimetry, and other selected topics. Prerequisite: CHEM 520.

CHEM 625 Electroanalytical Chemistry 3 hrs.
The theory and application of electrochemical measurements are discussed with particular emphasis on the theoretical aspects of polarography, potentiometry, amperometry, conductometric titrations, and other selected topics. Course may be repeated for credit. Graded on a Credit/No Credit basis. Prerequisite: CHEM 520.

CHEM 626 Chemical Instrumentation 3 hrs.
Principles and characteristics of construction and design for chemical and optical instruments. Prerequisite: CHEM 520.

CHEM 627 Spectrochemical Instrumentation and Techniques in Environmental Analysis 3 hrs.
This course will cover how optical and mass spectrometric methods can be applied to the analysis of environmental samples. The scope will include both theory and applications involving instrumental techniques used for elemental and molecular spectrometric analysis. The course will be arranged in such a manner as to point out the choice of analytical technique will depend on the type of information being sought, the characteristics of the analyte, and the sample form. Prerequisite: CHEM 520.

CHEM 630 Advanced Physical Chemistry 3 hrs.
A study of the fundamentals of quantum mechanics and some of its applications to chemistry. Included are the exactly solvable systems, some approximation methods used for chemical bonds and in more complicated molecules, and introduction to group theory representations and character tables. Some prepared computer programs will be used. Prerequisite: CHEM 431.

CHEM 631 Computational Chemistry 3 hrs.
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. Prerequisite: CHEM 431.

CHEM 633 Chemical Thermodynamics 3 hrs.
Includes a review of the three laws of thermodynamics, state functions, activities, partial molar qualities, thermodynamics of solutions, equilibrium, and statistical thermodynamics. Prerequisite: CHEM 431.

CHEM 635 Chemical Kinetics 3 hrs.
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. Prerequisite: CHEM 431.

CHEM 637 Aquatic Chemistry 3 hrs.
This course will examine the physical and chemical processes that control the chemical composition of natural water systems, including lakes, rivers, estuaries, oceans, and groundwater. It will examine what effects pertinent factors like pH, Eh, temperature, and salinity have on these processes, and how these processes control the fate of a pollutant when it enters a natural water system. This course requires a knowledge of basic physical chemistry. Prerequisite: CHEM 430 or equivalent.

CHEM 638 Surfaces in the Environment 3 hrs.
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. Prerequisites: MATH 123, CHEM 430, 431, or equivalent. (MATH 230 recommended.)

CHEM 650 Proteins and Nucleic Acids 3 hrs.

CHEM 654 Environmental Influences on Biomolecules 3 hrs.
An examination of how environmental factors influence biomolecule expression, stability, and function. Prerequisites: CHEM 550 and 554.

CHEM 655 Environmental Carcinogenesis 3 hrs.
The effect of environmental agents such as ultraviolet light, ozone, components of cigarette smoke, and auto emissions on human health will be discussed with an emphasis on the biochemical interaction of these agents with DNA and how DNA repair enzymes act to protect organisms from the harmful effects of these agents. Prerequisite: Consent of instructor.

CHEM 663 Mechanisms in Organic Chemistry 3 hrs.
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. Prerequisites: CHEM 377, 378.

CHEM 665 Environmental Organic Chemistry 3 hrs.
An examination of how the environmental fate of organic compounds is influenced by both the physical and chemical properties of those compounds and by the phases occurring in environmental compartments. Focuses on aquatic systems. Prerequisites: CHEM 577, 431.

CHEM 666 Environmental Influences on the Environment 3 hrs.
Research or independent study in one of the specialties of a member of the Chemistry Department. Graded on a credit/no credit basis. May be repeated for credit. This course cannot be used to partially satisfy the 600-level distributional degree program requirement of the Chemistry Department. Prerequisite: Consent of Instructor.

CHEM 680 Graduate Coop/Internship 1-4 hrs.
Research or practical training experience outside the department or university. This work is to be summarized in a written report. Consent of the instructor is required so that students can be assigned to an employer in order to best serve both student and employer. Course is repeatable up to 6 credit hours. Graded on a Credit/No Credit basis. Prerequisite: Consent of instructor.

Open to Graduate Students Only Please refer to The Graduate College section for course descriptions.

CHEM 700 Master's Thesis 6 hrs.

CHEM 730 Doctoral Dissertation 15 hrs.
COMMUNICATION

Dr. Steven Rhodes, Director
Main Office: Third Floor, Sprau Tower
Telephone: 387-3130
Fax: 387-3900
URL: http://www.wmich.edu/communication

Heather Addison
Julie Acker
Sandra Borden
Sue Ellen Christian
Rebekah Farrugia
Leigh Ford
Wendy Ford
Richard Gershon
James Gilchrist
Keith Heart
Richard Jung
Joseph Kayany
Maria Lapinski
Steven Lipkin
Jennifer Machiorlatti
Peter Northouse
Paul Nwulu
Mark Orbe
Katherine Propp
Steven Rhodes
Jocelyn Steink
Paul Ylstma

Master of Arts in Communication

Advisor and Director, Graduate Program:
Dr. Leigh Ford
Room 318, Sprau Tower

The Master of Arts in Communication provides a foundation in communication theory and research and emphasizes intra/interdisciplinary connections in applied contexts. Thirty semester hours of graduate credit and completion of a capstone experience are required for graduation.

Admission Requirements

Students 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 coursework. Additional coursework 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, Graduate Record Examination (GRE) scores, three letters of recommendation (on WMU Graduate Reference Forms), and evidence of academic interest and ability are required.

Program Requirements

Communication Foundations (6 hrs.)
Select two of the following:
COM 545 Media Communication
COM 674 Interpersonal Communication
COM 682 Organizational Communication

Research Foundations (8 hrs.)
COM 601 Introduction to Communication Inquiry

Select one of the following:
COM 602 Quantitative Communication Research
COM 605 Qualitative Communication Research

Communication Electives (18 hrs.)

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 director.

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 completion of a Master's thesis or completion of comprehensive examinations.

Thesis Option

The thesis project consists of completion of 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 Option

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.

Communication Courses (COM)

Open to Underclass and Graduate Students. Undergraduates with junior or senior status and 15 hours of COM or related courses may enroll in 500-level courses with prior approval of advisor and/or instructor.

COM 505 Special Topics in Communication (3 hrs.)

Group study of special topics in communication education, interpersonal and organizational communication, mass communication, and film. Many of these special courses are organized in response to special needs or interests of students on campus, in the community and in the region. Some topics are announced in the Schedule of Course Offerings; some are added during the semester. Further information and a full listing of topics may be obtained from the school offices, 301 Sprau Tower. Six (6) hours of COM 505 approved by an advisor may be accumulated as credit toward a Master of Arts in Communication.

COM 506 Special Topics in Telecommunications (3 hrs.)

Study of special topics in telecommunications management, law and policy, and technology. Prerequisites: COM 240 and junior or senior standing; or graduate standing.

COM 541 Telecommunications Law and Policy (3 hrs.)

Provides an overview of the essential regulatory and policy issues governing the field of telecommunications. Special attention is given to such topics as libel, privacy, access and right to reply, and copyright. A case study approach is used for the purpose of understanding legal precedent. Prerequisite: COM 240 or graduate standing.

COM 551 Methods of Media Analysis (3 hrs.)

This course provides an introduction to social scientific methods, techniques, and instruments for conducting communication research. The course examines methodologies in experimental and survey research designs and statistical analysis including descriptive and inferential statistics.

COM 604 Seminar in Communication Ethics (3 hrs.)

An in-depth examination of a central issue in communication ethics as it manifests itself in different contexts, including mass communication, organizational communication, and interpersonal communication. Issues may vary from term to term. Examples include deception, confidentiality, autonomy, and privacy.

COM 605 Qualitative Communication Research (3 hrs.)

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 commun-
Theories of conflict are examined, and explanations of others. May be repeated for credit under different topics. The course surveys the current literature on the impact of technology mediation on communication processes in a variety of interpersonal, domestic, organizational, social, and public communication contexts. Ethical and philosophical issues pertaining to technological persuasion and control, invasion of personal privacy, and knowledge management are also discussed.

COM 643 Telecommunications and Organizational Planning 3 hrs.
An overview of the basic principles involved in the management and implementation of telecommunications services within public and private organizations. Participants are introduced to three sectors of the telecommunications field, including broadcasting, cable, and telephone communications.

COM 645 Mass Communication 3 hrs.
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.

COM 647 Corporate and Organizational Video 3 hrs.
An extensive survey of the many ways television is used by organizations, including sales presentations, on-the-job training, customer information, and employee news. The role of the organization's television (CIV) department and the duties of an CIV producer are discussed. Teleconferencing, interactive video, and conventional delivery methods will be compared.

COM 670 Seminar in Interpersonal Communication 3 hrs.
Exploration of selected topics in interpersonal communication. Possible topics may include female/male interaction, multicultural communication, health communication, family communication or others. May be repeated for credit under different topics.

COM 673 Conflict Management 3 hrs.
Based on the assumption that conflict pervades human life, the course explores the strategies of productive and nonproductive interpersonal and social conflict within the organizational setting. Theories of conflict are examined, and explanations of the sources that attenuate conflict in humans are reviewed.

COM 674 Interpersonal Communication 3 hrs.
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.

COM 680 Seminar in Organizational Communication 3 hrs.
Exploration of selected topics in organizational communication. Possible topics may include corporate advocacy, communication and customer service, training and development, climate and culture in organization or others. May be repeated for credit under different topics.

COM 681 Group Communication Processes 3 hrs.
A study of 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.

COM 682 Organizational Communication 3 hrs.
Examination of traditional and contemporary theoretical perspectives and research in organizational communication. Demonstrates the contributions of intradisciplinary and interdisciplinary perspectives to the study of organizational communication.

COM 683 Power and Leadership in Organizational Communication 3 hrs.
This course is designed to study power and leadership within the organization from a communication perspective of sender and receiver of messages. Students will examine research in power, leadership traits, styles, contingency theories, and group leadership approaches and make application to individual career development.

COM 690 Topics in Communication Research Methods 3 hrs.
Focused training in specialized methods of communication research. Possible methods may include survey research, specific advanced statistical analysis techniques, ethnomethodology or others. May be repeated for credit under different topics. Prerequisite: COM 602 or 605 or equivalent graduate level research methods course.

Open to Graduate Students Only—Please refer to The Graduate College section for course descriptions.

COM 700 Master's Thesis 6 hrs.

COM 710 Independent Research 2-6 hrs.

COM 712 Professional Field Experience 2-6 hrs.
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.

REL 510 Morphological and Phenomenological Studies in Religion
2-4 hrs.
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 Revolutions; Femininity as a Religious Form; Great Islamic Thinkers; the Hindu Yogas; the Occult Tradition.

REL 511 Women in Religion
3 hrs.
Drawing together materials from many religious traditions, this course explores religion's effect on women, and women's effect on religion. It attends especially to women's roles in traditions studied both roles allotted to women and roles women shape for themselves. It also traces repeating patterns in women's religious experience and evaluates common explanations for such patterns.

REL 520 Methodological Studies in Religion
2-4 hrs.
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: Scientific Issues in the Study of Religion; the Critical Theory; Myth and Symbol in Religion and Literature.

REL 521 The Teaching of Religion in the Public School
2 hrs.
This course focuses on methods and issues involved in the teaching of religion in the public school. Particular attention given to the problems of its constitutionality, the distinction between the academic study of religion and religious instruction, and the question of meaning. Various approaches to the teaching of religion are critically evaluated. Teaching methods appropriate to the level of instruction, availability, organization, selection, and use of materials will be discussed. Required of all students following a Secondary Education Curriculum which includes the academic study of religions as a minor.

REL 530 Constructive Studies in Religion
2-4 hrs.
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: Religious Images of Man; Christian Humanism; the Structure of Religion; the Future of Religion; Religion, Language, and Structuralism.

REL 598 Readings in Religion
1-4 hrs.
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.

Open to Graduate Students Only

REL 600 Classics in Comparative Religion
3 hrs.
A systematic study of the most important scholarly works in Comparative Religion. Special attention will be paid to the historical context in which these classics were produced, their role in intellectual history, and their contributions to the humanities and the social sciences.

REL 601 Classics II
3 hrs.
A continuation of REL 600 with an emphasis upon more recent works in the humanities and the sciences that have precipitated new forms of inquiry about religious thought and practice. Special attention will be paid to the arguments about interpretive methods typical of the humanities versus explanatory theorizing typical of the sciences and their relevance for understanding religion in comparative perspective.

REL 610 Theory and Method I
3 hrs.
An examination of the major theoretical options for understanding and explaining religion in comparative perspective and the major methods employed by theoricians in their development of such theoretical options. Particular attention will be paid to intellectualist, symbolist, and structuralist, ideological, emotivist, and cognitive method and theory.

REL 611 Theory and Method II
3 hrs.
A continuation of REL 610 with an emphasis upon case studies for specific historical and cultural contexts. The course will focus specifically on the contributions that the cognitive sciences have made and continue to make to causal explanations of religion. Particular attention will be paid to the developmental literature having to do with the conditions for the acquisition and the transmission of cultural knowledge.

REL 615 Survey of Religions of the World
3 hrs.
A survey of ten major religious traditions; each tradition will be studied through its historical development, its unified system (symbols, beliefs, and rituals), and dynamics (actual practices such as annual celebrations, rites of passage). While learning the content of individual 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. This course will balance content of religious traditions and pedagogical techniques as a way of preparing students to teach basic courses in religion.

REL 616 Teaching Comparative Religion
3 hrs.
A course introducing the content and pedagogy of comparative religion, focusing on ten major religious traditions and the teaching methods appropriate for the undergraduate classroom. Particular attention will be paid to learning theory, teaching methods, course preparation, syllabus design, computer use (especially the PASS program), audiovisual materials, and text selection. Students will be introduced to the classroom situation under the mentorship of a faculty member by leading discussions, delivering lectures, and preparing and grading examinations.

REL 620 Advanced Seminar in Comparative Religion
3 hrs.
Advanced study in a major problem area of comparative research in the religions of humankind. May be repeated for credit when topics vary. Prerequisite: Consent of instructor.

REL 695 Dissertation Tutorial
3 hrs.
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 730, Doctoral Dissertation).
ECONOMICS

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Susan Pozzo
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Mark V. Wheeler
Huzhong Zhou

ECONOMICS

Room 5301, Friedmann Hall

The Master of Arts in Applied Economics is designed to provide students with a strong foundation in economic analysis combined with the ability to apply theory to contemporary problems. Graduates of the program are employed in industry, government, and teaching. Some graduates continue their formal training in economics, pursuing the Ph.D. degree at WMU or at another university.

Admission Requirements
1. Satisfactory completion of a minimum of twelve undergraduate hours in economics or in equivalents approved by the graduate advisor.
2. Satisfactory completion of intermediate level courses in microeconomic and macroeconomic theory. Students not meeting this requirement will be admitted with reservation and be required to complete satisfactorily ECON 403 and 406.
3. Satisfactory completion of at least one course in calculus.
4. 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 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 programs.
5. 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
1. The satisfactory completion of either twenty-four hours of courses plus a master's thesis or thirty hours, if additional courses are submitted, in the thesis program prepared in consultation with the graduate advisor.
2. At least an overall "B" average in the Economics courses that the student takes in an advisor-approved program of study.
3. ECON 503 Economic Computing, ECON 504 Mathematics for Economists, ECON 603

Advanced Price Theory, ECON 607 Uncertainty and Information, ECON 619 Introduction to Econometrics, ECON 622 Economic Statistics, and ECON 662 National Income Analysis.

Doctor of Philosophy in Applied Economics
Advisor: William Kern, Room 5301, Friedmann Hall

The Doctor of Philosophy in Applied Economics is designed to meet the needs of future high-level practicing economists, primarily in non-academic settings.

Recent studies have found that non-academic employers of Ph.D.-level economists are concerned about the training that existing programs provide their graduates. In an early 1990's report commissioned by the American Economic Association, Dr. Anne O. Krueger reported that the proportion of new economics doctorates taking their first job in academia has significantly declined and that universities are not adequately serving the non-academic portion of the market. She wrote that "...our major concern focuses on the extent to which graduate education in economics may have become too removed from real economic problems...and that the focus on developing skills required for applied research should be strengthened..." The Ph.D. program offered by the WMU Economics Department is designed to address this need.

The Applied Economics Ph.D. program retains a core curriculum as is required by traditional Ph.D. programs in economics, but requires that students participate in a series of applied economics workshops and 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. The 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.

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
1. Satisfactory completion of 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.

Program Requirements
1. A minimum of 75 credit hours at the 600-level or higher 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.

Required Core Courses:
- ECON 604 Mathematical Economics
- ECON 619 Introduction to Econometrics
- ECON 622 Economic Statistics
- ECON 665 Microeconomic Theory I
- ECON 666 Microeconomic Theory II
- ECON 675 Macroeconomic Theory I
- ECON 676 Macroeconomic Theory II
- ECON 670 Advanced Econometrics I
- ECON 671 Advanced Econometrics II

At or near the beginning of the fall semester of the second year, students are administered a qualifying examination in economic theory. Upon passing this examination, the student is considered a candidate for the Ph.D. degree.

Each student is required to specialize in econometrics and in two of the following fields: Economic Development, Environmental 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 econometrics and in the two fields they have selected.

In the third year, candidates may intern (ECON 712) 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. Internships 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, in addition 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 699) is offered each semester and during the summer session.

The fourth year is devoted to the writing of the doctoral dissertation and continued participation in economics workshops. The dissertation is the culmination of a student's career project. A satisfactory oral defense of the dissertation completes all the requirements 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.

Economics Courses (ECON)
Open to Underclass and Graduate Students
Undergraduate with junior or senior standing and no more credit in Economics or the consent of the Department Chairperson may enroll in 500-level courses.

ECON 501 Studies in Economic Problems: Variable Topics
3 hrs.
An examination of a selected area of concern not intensively covered in other courses. The focus of
the course will be substantive as well as analytical. Topics may include such areas as poverty, the war on poverty problems, misallocation of resources, welfare programs, unemployment, and others. May be repeated for credit with a different topic. Prerequisites: ECON 201 and 202, plus 6 additional credit hours of economics or consent of instructor.

ECON 503 Economic Computing 3 hrs.
This course provides students with basic skills needed for gaining access to economic databases and for using data management programs on personal and mainframe computers. It provides instruction and lab experience in transferring files and performing operations widely employed by economists. Prerequisites: ECON 403 and 406 or permission of instructor.

ECON 504 Mathematics for Economists 3 hrs.
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. Prerequisites: ECON 201 and 202, MATH 122 or consent of instructor.

ECON 505 History of Economic Thought 3 hrs.
This course surveys the origins and developments of economic analysis from the Ancient Greeks to the present. Prerequisites: ECON 201, 202.

ECON 507 Monetary Theory and Policy 3 hrs.
This course concentrates on the main elements of monetary theory and policy having to do with such problems as promoting economic growth, maintaining full employment and price stability, influencing the flow of capital into the various economic sectors with different possible social goals in mind, and stabilizing international trade and financial relationships. Prerequisites: ECON 201, 202, 320 or 406, plus three additional credit hours of intermediate level economics.

ECON 515 Economics of Human Resources 3 hrs.
The course will examine the development and utilization of manpower in the United States, including such topics as labor force components, economic activity such as education, training, health and mobility, and issues of manpower policy. Prerequisites: ECON 201 and 202.

ECON 525 State and Local Government Finance 3 hrs.
Practices, effects, and issues in state and local expenditure, taxation, and borrowing, with particular attention to property and sales taxation, to the financing of education and highways, and to intergovernmental fiscal relations. Prerequisites: ECON 201 and 202.

ECON 588 Economic Development 3 hrs.
An analysis of the economic factors such as population, resource, innovation, and capital formation which 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. Prerequisites: ECON 201 and 202.

ECON 591, ECON 592 Guest Economist Seminar 1 hr.
Seminar on a topic of current interest featuring visiting economists. Topics will vary and courses may be repeated. Prerequisites: ECON 201 and 202.

ECON 598 Readings in Economics 1–3 hrs.
An independent program of study for qualified students to be arranged in consultation with the instructor. Prerequisites: 12 credit hours of Economics and the consent of instructor and Department Chairperson. Open to Graduate Students Only

ECON 600 Applied Economics for Management 3 hrs.
The course examines the relationship between the theory of the firm and recent developments in the area of operations research. Among the concepts and tools discussed are game theory, linear programming, budgeting and forecasting, inventory theory, input-output analysis, price policy, and cost analysis. This course may not be taken for credit if a student has received credit for ECON 400.

ECON 601 Basic Economic Analysis 3 hrs.
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. This course is not available to economics majors.

ECON 602 Advanced Economics 3 hrs.
Emphasis will be placed on decision-making under conditions of uncertainty. Topics will include advanced material in linear programming, game theory, capital budgeting and forecasting. Prerequisite: ECON 600.

ECON 603 Advanced Price Theory 3 hrs.
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; aggregate theories and its application to 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. This course is not available to economics majors.

ECON 604 Introduction to Mathematical Economics 3 hrs.
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. Prerequisites: MATH 122 or equivalent.

ECON 605 Introduction to Mathematical Economics 3 hrs.
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. Prerequisites: MATH 122, MATH 123 or equivalents.

ECON 607 Uncertainty and Information 3 hrs.
Analysis of individual decision making and market equilibria under conditions where economic agents are unsure about their own situations and/or the opportunities offered by market dealings. Topics covered include expected utility, decisions to produce and acquire information, information and contract design, and the effect of information in situations of strategic economic interaction. Prerequisites: ECON 504 or ECON 505.

ECON 609 Seminar in Economics 3 hrs.
Offers the graduate an opportunity to investigate contemporary problems in economic theory and analysis. Prerequisite: Four hours of advanced economic theory or consent of instructor. Topics will vary, and course may be repeated.

ECON 610 Human Resources I 3 hrs.
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. Prerequisite: ECON 603 or equivalent.

ECON 611 Human Resources II 3 hrs.
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 topics 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. Prerequisite: ECON 610.

ECON 616 Collective Bargaining in Public Employment 3 hrs.
This course examines collective bargaining developments in local, state, and federal governments, including bargaining units, negotiations, grievance procedures, strikes, and dispute settlements. Prerequisites: ECON 201 and 202 or consent of instructor. Not open to Economics graduate students.

ECON 617 Economics of Health and Human Services 3 hrs.
Economic problems of health and human services will be considered. Alternative policy solutions are viewed from the economist's point of view. Prerequisites: ECON 201 and 202 or consent of instructor. Not open to Economics graduate students.

ECON 619 Introduction to Econometrics 3 hrs.
This course is an introduction to econometric models and their use in economic analysis. The course covers multiple regression models, the implications and treatment of serial correlation and heteroskedasticity. Prerequisite: ECON 622 or equivalent.

ECON 620 Economic Forecasting 3 hrs.
This course covers the construction, evaluation, and presentation of econometric forecasts. Students are taught to model and forecast economic data which contain trend, seasonal, and cyclical components. Both univariate and multivariate forecasting techniques are examined. A forecasting project is required of each student. Prerequisite: ECON 619 or equivalent.

ECON 622 Economic Statistics 3 hrs.
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 which arise in applying statistical models to economic data. Prerequisites: MATH 122 or equivalent, ECON 402 or equivalent.

ECON 624 Public Finance I 3 hrs.
This course is devoted to a study of welfare and public sector economics. The objective is to acquaint students with the framework used by economists to analyze and evaluate public policy. Prerequisite: ECON 603 or equivalent.
ECON 625 Public Finance II
3 hrs.
Selected topics from public sector economics will be presented. Foremost among these is benefit-cost analysis. Thus, consumers' surplus, the social discount rate, and decision-making under uncertainty are other topics that will be covered regularly. The main purpose of this course is to provide students with the background necessary to conduct research in public finance. Prerequisites: ECON 624, ECON 665.

ECON 650 Industrial Organization/Business Economics I
3 hrs.
This course will survey the major topics in industrial organization, antitrust economics, and the economics of regulation. Prerequisite: ECON 603 or equivalent.

ECON 651 Industrial Organization/Business Economics II
3 hrs.
This course will cover selected topics in industrial organization, antitrust economics, and the economics of regulation. Prerequisites: ECON 650, ECON 665.

ECON 662 National Income Analysis
3 hrs.
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. Prerequisites: ECON 403 and 406.

ECON 665 Microeconomic Theory I
3 hrs.
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. Prerequisites: MATH 122, MATH 123 or equivalents.

ECON 666 Microeconomic Theory II
3 hrs.
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. Prerequisites: ECON 604, ECON 665.

ECON 670 Advanced Econometrics I
3 hrs.
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. Prerequisite: ECON 619.

ECON 671 Advanced Econometrics II
3 hrs.
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. Prerequisite: ECON 670.

ECON 675 Macroeconomic Theory I
3 hrs.
This course develops a general equilibrium macroeconomic model reflecting the recent developments in the literature. Prerequisites: MATH 122, MATH 123 or equivalents.

ECON 676 Macroeconomic Theory II
3 hrs.
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. Prerequisites: ECON 604, ECON 675.

ECON 680 International Economics I
3 hrs.
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. Prerequisites: ECON 622, ECON 662 or equivalents.

ECON 681 International Economics II
3 hrs.
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 polices. Prerequisite: ECON 603 or equivalent.

ECON 686 Monetary Economics
3 hrs.
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 money policy. Prerequisites: ECON 619 and ECON 676 or equivalent.

ECON 687 Monetary Policy
3 hrs.
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. Prerequisites: ECON 675 and 619, or equivalents.

ECON 688 Economic Development I
3 hrs.
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. Prerequisites: ECON 201 and 202.

ECON 689 Economic Development II
3 hrs.
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. Prerequisites: ECON 665, ECON 675, ECON 698.

ECON 699 Econometrics Workshop
3 hrs.
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. Prerequisites: ECON 666, ECON 670, ECON 676. Topics will vary and course may be repeated.

Open to Graduate Students Only—Please refer to The Graduate College section for course description.

ECON 700 Master's Thesis
6 hrs.

ECON 710 Independent Research
2-6 hrs.

ECON 712 Professional Field Experience
2-12 hrs.

ECON 730 Doctoral Dissertation
12 hrs.
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.

For more detailed information and for an application form, write to the graduate director or see the department's pages on the World Wide Web at the following URL: http://www.wmich.edu/english.

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 for those who wish to teach English at the high school level or to pursue a writing career in the business world or as an editor and writer creating technical and scientific materials. The program is structured to allow a student to complete the degree in two years if they take full-time courses and maintain a B average.

Required courses in the program are (a) two courses chosen from ENGL 615 Literary Criticism, ENGL 630 Introduction to Graduate Studies, and ENGL 640 The Nature of Poetry; (b) two courses in English language, including the pedagogy of writing; (c) one course in the study of multicultural literature; (d) one course in the English language; and (e) ENGL 691 Research and Scholarship in English Education. In addition, a minimum of two graduate courses beyond the core requirements is needed to complete the thirty-three hours, at least nine hours must be in literature (exclusive of ENGL 582 and 583). On admission, students should consult with the advisor at the earliest opportunity concerning their program of study.

For more detailed information and for an application form, write to the department's graduate director or see the department's pages on the World Wide Web at the following URL: http://www.wmich.edu/english.

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, or drama. It is the minimum 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 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 and who are otherwise judged eligible may be granted permission 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, both the General Test and the Subject Test in Literature in English, and forward their scores to the Department of English.

On admission, students should consult with the advisor at the earliest opportunity concerning their program of study.

For more detailed information and for an application form, write to the department's graduate director or see the department's pages on the World Wide Web at the following URL: http://www.wmich.edu/english.

Program Requirements

Candidates entering with an MA or an MFA are credited with 30 hours (or more if their transcripts warrant it). Those entering directly from a baccalaureate program will be expected to complete the courses designated as "prerequisites" as early as possible in their studies.

1. Prerequisites (equivalent courses from other institutions are accepted) 12 hours
   a. For candidates in literature, language, or pedagogy: Literature Core; Introduction to Graduate Studies; The Nature of Poetry; and an approved English language course.
   b. For candidates in creative writing: Literary Criticism; an approved course in modern literary forms; a genre-specific course; an approved English language course.

2. Distribution requirement 18 hours

   Six graduate level courses from the following list of areas, selected so that no two contiguous periods are skipped. Candidates in creative writing must choose Contemporary Literature as one area.
   - American literature before 1800
   - American literature 1800-1945
   - British literature to 1500
   - Renaissance British literature (through Milton)
   - Restoration and 18th-century British literature
   - Nineteenth-century British literature
   - Modern British literature
   - Contemporary literature

3. Non-traditional literature 3 hours

   At least one course in English by an ethnic minority group, by post-colonial writers, or by other groups not traditionally included in the canon.

4. Teaching component 6 hours

   Six hours of credit elected from courses or practica in the teaching of composition, literature, English language, or creative writing.

5. Area of specialization 12 hours

   At least 12 credit hours in an area (or for creative writing students, a genre) chosen in preparation for the dissertation. The areas include the periods listed in the Distribution Requirement as well as English Language, and the Theory and Practice of Teaching English at the college level.

6. Cognate or support area 6-9 hours

   An optional area to complement the specialization. May include courses from other departments.

7. Candidacy Examination

   After satisfying the distribution requirement, students will take one three-hour written examination over their chosen areas, including an exercise in practical criticism. These examinations should be completed within three years of admission. May be repeated once.
8. Foreign Language Requirement
Students must demonstrate by examination or by completion of two 400-level courses basic reading competency in at least one foreign language.

9. Doctoral Readings and Oral Examination 3-6 hours
Near the completion of course work and before beginning the dissertation, students will take ENGL 711. Readings in Doctoral Specialization, a course of readings designed by the candidate in conjunction with a faculty supervisor. An oral examination over the chosen books will follow.

10. Dissertation 15 hours
The dissertation is to be a book-length manuscript of scholarship, criticism, research, or creative writing comprised of either a single piece of work or a coherent collection of shorter pieces that are methodologically, structurally, or thematically related.

Financial Assistance
A small number of doctoral fellowships are awarded each year, together with a number of doctoral teaching assistantships.

English Courses (ENGL)
Open to Upperclass and Graduate Students
Prerequisites to 500-level courses are 18 hours of English courses, including eight or more hours at the 300/400-level and second semester junior status; exemption only by permission of Director of Undergraduate Studies.

ENGL 522 Studies in American Literature 3 hrs.
Study of a movement or a recurring theme in American literature, such as romanticism, realism, naturalism, humor, or racial issues.

ENGL 530 Medieval Literature 3 hrs.
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.

ENGL 532 English Renaissance Literature 3 hrs.
Readings in representative writers of the period 1500-1660.

ENGL 534 Restoration and Eighteenth Century Literature 3 hrs.
Readings in representative writers of the period 1660-1800, focusing on the diversity of literary forms in the period.

ENGL 536 Romantic Literature 3 hrs.
Readings in poetry and criticism, with emphasis on such writers as Blake, Burns, the Wordsworths, Coleridge, Scott, Byron, the Shelleys, and Keats.

ENGL 537 Victorian Literature 3 hrs.
Readings emphasizing such writers as Carlyle, Mill, Dickens, Thackeray, Eliot, Tennyson, the Brownings, and Arnold.

ENGL 538 Modern Literature 3 hrs.
Readings in representative writers in the period 1890-1945, not exclusively in British and American literature.

ENGL 539 Post-Colonial Literature 3 hrs.
Readings in representative writers from colonial and post-colonial cultures.

ENGL 540 Contemporary Literature 3 hrs.
Readings in representative writers who have come to prominence chiefly since 1945.

ENGL 555 Studies in Major Writers 3 hrs.
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.

ENGL 556 Creative Writing Workshop 4 hrs.
An advanced course in the writing of poetry, fiction, or drama, with class criticism of each student's writing. The course may be taken more than once.

ENGL 574 Grammar in Teaching Writing 4 hrs.
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 rewriting and editing writing.

ENGL 582 Studies in Children's Literature 3 hrs.
A study in depth of significant themes, movements, and types of children's literature.

ENGL 583 Multi-Cultural American Literature for Children 3 hrs.
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. Prerequisite: 18 hrs. of English course work, including ENGL 282.

ENGL 597 Studies in English: Variable Topics 1-3 hrs.
Group study of special topics in literature, film, English language, and writing. Many of the 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.

ENGL 598 Readings in English 1-4 hrs.
Advanced students with good scholastic records may elect to pursue independently the study of some topic having special interest for them. Topics are chosen and arrangements are made to suit the needs of each student. Approval of English advisor required. May be elected more than once.

Open Only to Graduate Students admitted to English Curricula or by Permission of the English Graduate Advisor.

ENGL 610 Seminar 3 hrs.
Study of a problem in literary history or criticism. May be repeated once with the permission of the graduate advisor.

ENGL 611 Literary Forms 3 hrs.
A study in form and technique in one of the four major literary genres: poetry, fiction, drama, and creative non-fiction.

ENGL 611 Literary Criticism 3 hrs.
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.

ENGL 621 Studies in British Literature 3 hrs.
The advanced study of selected aspects of British literature. May be repeated once with the permission of the graduate advisor.

ENGL 622 Studies in American Literature 3 hrs.
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.

ENGL 630 Introduction to Graduate Studies 3 hrs.
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.

ENGL 631 Essay Writing 3 hrs.
A course in the writing of informal expository prose in the forms used for addressing general audiences. There will be a generous amount of reading in exemplary works and a concern for understanding the rhetorical principles underlying good modern prose. Prerequisite: A bachelor's degree.

ENGL 632 Article Writing 3 hrs.
A course in the writing of informative prose directed toward a non-specialist audience. There will be study and practice in the methods of gathering and analyzing information and in the effective organization and presentation of factual material.

ENGL 633 Professional Writing: Form and Technique 3 hrs.
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.

ENGL 640 The Nature of Poetry 3 hrs.
A study of styles, techniques, forms, and conceptions of poetry, involving practice in explication, both oral and written, of individual poems.

ENGL 641 Studies in Modern Poetry 3 hrs.
An intensive study of the work of several modern poets.

ENGL 642 Studies in Drama 3 hrs.
Selected areas of drama from classical times to the present.

ENGL 644 Studies in the Novel 3 hrs.
An examination of significant forms and techniques employed in the novel from its beginnings to the modern age.

ENGL 645 Studies in the Modern Novel 3 hrs.
An intensive study of the works of some important novelists of the twentieth century.

ENGL 652 Studies in Shakespeare: Tragedy 3 hrs.
Selected tragedies of Shakespeare.

ENGL 653 Studies in Shakespeare: Comedy 3 hrs.
Selected comedies of Shakespeare.
Any given section of this course will focus on either poetry, 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. Prerequisites: Open to graduate students accepted into the M.F.A. program and, with the permission of the instructor, to other graduate students.

ENGL 669 Methods of Teaching College Writing 3 hrs.
A course required of those teaching the freshman composition course, ENGL 105, 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.

ENGL 672 Language, Dialects, and Sociolinguistics 3 hrs.
A course focusing on specific varieties of American English studied from historical, linguistic, literary, and/or social perspectives as the basis for application of sociolinguistic theory and research to a variety of topics. These may include the study of American culture and literature, educational implications of dialect diversity in monolingual and multilingual settings, the links between language and social identity, and gender/ethnic differences in language. Issues such as language change, attitudes toward language, and implications for teaching English will be explored in detail.

ENGL 673 Psycholinguistics in Reading 3 hrs.
An examination of psycholinguistic insights into the nature of the reading process, with emphasis on practical implications and applications for the classroom.

ENGL 676 Old English 3 hrs.
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.

ENGL 677 Middle English 3 hrs.
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.

ENGL 679 Studies in Composition Theory 3 hrs.
A course which 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. Prerequisite: Teaching experience.

ENGL 680 Advanced Methods in Teaching Literature 3 hrs.
A study of theories and methods of teaching literature.

ENGL 681 Advanced Methods in Teaching Language and Composition 3 hrs.
A study of theories and methods of teaching language and composition.

ENGL 690 Scholarship and Writing in the Profession 3 hrs.
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. Graded on a Credit/No Credit basis. Prerequisites: ENGL 630 and prior completion of at least 21 hours of credit toward the Master of Arts in English.

ENGL 691 Research and Scholarship in English Education 3 hrs.
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. 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.

ENGL 697 Studies in English: Variable Topics 1-3 hrs.
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. Students may repeat this course, providing topics vary. For further information, consult the graduate advisor.

ENGL 699 M.F.A. Project 3-6 hrs.
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 Please refer to The Graduate College section for course descriptions.

ENGL 700 Master's Thesis 6 hrs.
ENGL 710 Independent Research 2-6 hrs.

ENGL 711 Readings in Doctoral Specialization 3-6 hrs.
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. Prerequisite: Doctoral candidacy.

ENGL 712 Professional Field Experience 2-12 hrs.
ENGL 713 Practicum in Teaching in the Discipline 3 hrs.
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 opportunity for both guided praxis and reflection on praxis. May be repeated. Prerequisite: Consent of advisor.

ENGL 730 Doctoral Dissertation 15 hrs.
FOREIGN LANGUAGES

Dr. Cynthia Running-Johnson, Chair
411 Sprague Tower
Telephone: 387-3021
FAX: 387-6333
http://www.wnich.edu/languages

Hidoko Abe
Jeffrey Angles
Peter Bicket
Vincent Desroches
Ako Fukushima
Olivia Gabor
Dethier H. Haeuникke
Rand H. Johnson
Peter W. Krawutschke
David Kutzko
Mużitka Mughazy
Dashe Nisula
Molly Recchia
Eric Russell Webb
Heremn Teichert
Xiaojun Wang
Lindsey White

Arabic Courses (ARAB)
Open to Upperclass and Graduate Students
ARAB 520 Topics in Arabic Linguistics and Language Science
3 hrs.
See the entry for LANG 520. Prerequisites: Completion of four ARAB courses.
Directed individual study of a specific topic in Arabic literature or linguistics. Repeatable for credit. Prerequisites: ARAB 100 and prior permission of departmental advisor.

Asian and Middle Eastern Languages Course (AMEL)
Open to Upperclass and Graduate Students
AMEL 500 Special Topics in World Languages
3 hrs.
The topic(s) to be announced in the Schedule of Course Offerings. The content of the course will vary from semester to semester. May be repeated for credit.

Chinese Courses (CHN)
Open to Upperclass and Graduate Students
CHN 520 Topics in Chinese Linguistics and Language Science
3 hrs.
See the entry for LANG 520. Prerequisites: Completion of four CHN courses.

German Courses (GER)
Open to Upperclass and Graduate Students
GER 550 History of the German Language
3 hrs.
Survey of the development of the German language. Prerequisites: Six hours of 300-level German or above.
GER 560 Studies in German Literature
3 hrs.
Topic varies according to genre, author, or period and will be announced. Each of these courses carries separate credit, although all are listed under 560. Thus, a student may take any or all of the offerings at various times. Prerequisites: German 316, 317, 322 or 325 or equivalent. Representative topics which may be treated in this area include: The Novel—Survey of the development with representative selections.

Greek Course (GREK)
Open to Upperclass and Graduate Students
GREK 520 Topics in Greek Linguistics and Language Science
3 hrs.
See the entry for LANG 520. Prerequisites: Completion of four GREK courses.

Italian Course (ITAL)
Open to Upperclass and Graduate Students
ITAL 520 Topics in Italian Linguistics and Language Science
3 hrs.
See the entry for LANG 520. Prerequisites: Completion of four ITAL courses.

Japanese Courses (JPNS)
Open to Upperclass and Graduate Students
JPNS 520 Topics in Japanese Linguistics and Language Science
3 hrs.
See the entry for LANG 520. Prerequisites: Completion of four JPNS courses.

Language Courses (LANG)
Open to Upperclass and Graduate Students
LANG 520 Topics in Linguistics and Language Sciences
3 hrs.
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/PUS 520. Prerequisites: Completion of four courses in area of specialization.
LANG 550 Independent Study in Classics
1-3 hrs.
Directed, individual study of a specific topic in a Classical linguistic, cultural, and/or literary context. Department approval required for admisison. Prerequisites: Completion of four courses or equivalent in classics; minimum grade point average of 3.0 in the major, departmental approval required. May be repeated for credit.

French Courses (FREN)
Open to Upperclass and Graduate Students
FREN 510 Studies in French and Francophone Culture
3 hrs.
An intensive study of selected aspects of French and Francophone culture. Course varies according to topic and may be repeated for credit with permission of advisor. Representative topics might include Women in French Society, The French Tradition in Quebec, Francophone Cinema. Prerequisites: FREN 316, 317, either 322 or 325, plus one additional course at the 300-, 400-, or 500-level.
FREN 520 Topics in French Linguistics and Language Science
3 hrs.
See the entry for LANG 520. Prerequisites: Completion of four FREN courses.
FREN 526 French Literature from the Middle Ages to the Revolution
3 hrs.
The study of selected literary texts from the Middle Ages to the end of the eighteenth century. Prerequisites: FREN 316, 317, and 325.
FREN 529 French Literature from the Revolution to the Present
3 hrs.
The study of selected literary texts from the late eighteenth century to the present. Prerequisites: FREN 316, 317, and 325.
FREN 550 Independent Study in French
1-3 hrs.
Directed, individual study of a specific topic in a French literary or linguistic area. Departmental approval required for admission. Repeatable for credit. Prerequisite: A minimum grade point average of 3.0 in the major.
FREN 560 Advanced Readings in French
3 hrs.
Topics in literary, cultural, or linguistic merit will be analyzed. Topics will vary from semester to semester. May be repeated for credit. Prerequisites: FREN 316, 317, 325, or permission of instructor.

GER 520 Topics in German Linguistics and Language Science
3 hrs.
See the entry for LANG 520. Prerequisites: Completion of four GER courses.
GER 528 Survey of German Literature
3 hrs.
A comprehensive study of German literature from its beginning through Romanticism. Prerequisites: GER 316, 317, 322 or 325 or equivalent.
GER 529 Survey of German Literature
3 hrs.
A comprehensive study of German literature from German Realism to the present. Prerequisites: GER 316, 317, 322 or 325 or equivalent.
GER 550 Independent Study in German
1-3 hrs.
Directed, individual study of a specific topic in a German literary or linguistic area. Departmental approval is required for admission. Repeatable for credit. Prerequisite: One 500-level course in the major; a minimum grade point average of 3.0 in the major.

FREN 500-level courses may be taken only by advanced undergraduate students. Advanced undergraduate students are defined as those who have satisfactorily completed a minimum of four courses, or equivalent, applicable toward a major or minor in any one language. Each course, however, may have more specific and/or additional prerequisites.
LANG 558 Modern Language Instruction (in French, German, Spanish, or other language) 3 hrs. Required for modern language teaching majors and minors. This course will acquaint prospective language teachers with various approaches and strategies involved in modern language teaching. Specifically, in a performance-oriented program, students will learn theory and practice related to teaching the listening, speaking, reading, and writing skills, as well as the culture component. Students should complete this course before beginning directed teaching. This course will be offered regularly. (The comparable methods course for Latin is LAT 557, Teaching of Latin.)

LANG 580 Foreign Language for Special Purposes 1-12 hrs. The study of or practice in a specialized area in the field of foreign 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. Students may repeat the course for credit, provided the subject matter differs. Prerequisite: Completion of four courses in area of specialization; departmental approval required.

Open to Graduate Students Only — Please refer to The Graduate College section for course description.

LANG 710 Independent Research 2-6 hrs.

Latin Courses (LAT)

Open to Upperclass and Graduate Students 500-level courses may be taken only by advanced undergraduate students. Advanced undergraduate students are defined as those who have satisfactorily completed a minimum of four courses, or equivalent, applicable toward a major or minor in any one language. Each course, however, may have more specific and/or additional prerequisites.

LAT 520 Topics in Latin Linguistics and Language Science 3 hrs. See the entry for LANG 520. Prerequisite: Completion of four LAT courses.

LAT 550 Independent Study in Latin 1-3 hrs. Directed individual study of a specific topic in Latin literature or linguistics. Departmental approval required for admission. Repeatable for credit. Prerequisite: A minimum grade point average of 3.0 in the major.

LAT 557 Teaching of Latin 3 hrs. The purpose of the course is to acquaint the prospective teacher with theory and practice appropriate to 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.

LAT 560 Medieval Latin 4 hrs. 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. Prerequisite: One of LAT 200, LAT 201, LAT 204, LAT 324, or equivalent, or permission of department.

Latvian Courses (LATV)

Open to Upperclass and Graduate Students 500-level courses may be taken only by advanced undergraduate students. Advanced undergraduate students are defined as those who have satisfactorily completed a minimum of four courses, or equivalent, applicable toward a major or minor in any one language. Each course, however, may have more specific and/or additional prerequisites.

LATV 550 Independent Study in Latvian 1-3 hrs. Directed individual study of a specific topic in a Latvian language, literature, or culture area. Department approval required for admission. Repeatable for credit. Prerequisite: Permission of Department and instructor.

Russian Courses (RUSS)

Open to Upperclass and Graduate Students 500-level courses may be taken only by advanced undergraduate students. Advanced undergraduate students are defined as those who have satisfactorily completed a minimum of four courses, or equivalent, applicable toward a major or minor in any one language. Each course, however, may have more specific and/or additional prerequisites.

RUSS 520 Topics in Russian Linguistics and Language Science 3 hrs. See the entry for LANG 520. Prerequisites: Completion of four RUSS courses.

RUSS 550 Independent Study in Russian 1-3 hrs. Directed individual study of a specific topic in Russian language, literature, or culture. May be repeated for credit. Department and instructor approval required.

GEOGRAPHY

Dr. David G. Dickason, Chair
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Kathleen Baker
James Biles
Dorothy Che
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Chansheng He
David Lemberg
Eldor C. Quandt
Joseph P. Stoltman
Gregory Veecck
Jordan Yin

Master of Arts In Geography

Advisor: Gregory Veecck,
Room 2114, Wood Hall

The goals of the Master of Arts 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. 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.

Admission Requirements

Experience indicates that geography majors/minors, or social/biological/physical-science majors with some geography normally can meet program requirements. Prior to the successful completion of ten graduate hours, the following admission requirements must be met or the student will not be admitted to further 600- or 700-level courses.

1. The attainment of passing scores on the comprehensive qualifying examinations in physical and human geography, and map, chart, and air photo reading. If unsuccessful the student may retake an examination. If a passing score is still not obtained, the student must receive a "B" or better in a course with comparable subject matter (GEOG 105, 206, 265).

2. Successful completion ("C" grade or better) of (GEOG 501) Introduction to Geographic Information Systems or approved equivalent.

Program Requirements

1. Completion of a minimum of three courses in one of the three following areas of concentration:
   a. Community Development and Planning
   b. Environmental and Resource Analysis
   c. Geographic Techniques

2. Completion of 30 hours of approved graduate credits in all concentrations, except Community Development and Planning, where 36 hours are required; at least 20 hours to be completed in the Geography Department.

3. Completion of GEOG 661 (Geographic Research), GEOG 567 (Computerized Geodata Handling and Mapping), and GEOG 686 (Professional Development Seminar). GEOG 556a (Urban Planning and Zoning) also is required for the Community Development and Planning concentration.

4. Completion of 6 hours of GEOG 700 (Master's Thesis) or two to six hours of GEOG 710 (Independent Research). In addition, students may enroll in GEOG 712 (Professional Field
Master of Arts in the Teaching of Geography

Advisor: Joseph Stoltman, Room 3610, Wood Hall

The 34-hour Master of Arts in the Teaching of Geography is designed to improve the classroom teaching of geography, including the specific prerequisite of student teachers. The program aims to provide elementary and secondary teachers with a graduate degree which combines the content of geography and related disciplines with professional development, and to provide elementary and secondary teachers with the skills and knowledge necessary for providing educationally sound learning experiences for their students.

Admission Requirements

The prospective candidate should examine state teacher certification requirements if those have not been fulfilled in an undergraduate program. Before the completion of ten graduate hours, all students must meet the following requirements:

1. Completion of GEOG 460, Concepts and Strategies in the Teaching of Geography, or an approved equivalent with a grade of "B" or better.
2. The attainment of passing scores on the comprehensive qualifying examinations in physical and human geography.

Program Requirements

The minimal requirements for the Master of Arts in the Teaching of Geography include the following:

1. Completion of 34 hours of graduate-level courses, at least one half of which at the 600- or higher level.
2. Completion of at least 20 hours of 500- and 600-level geography courses.
3. Completion of ED 601 (Fundamentals of Educational Research) or GEOG 661 (Geographic Research).
4. Completion of at least six hours of graduate-level education courses (not including ED 601).
5. Completion of GEOG 666 (Professional Development Seminar).
6. Completion of a two- or three-hour capstone experience, consisting of either GEOG 710 (Independent Research) or GEOG 712 (Professional Field Experience).

Geography Courses (GEOG)

SYSTEMATIC GEOGRAPHY

Open to Upperclass and Graduate Students

Prerequisites applicable to all 500-level courses in Geography are 14 credit hours of geography, including the specific prerequisite for each course, or consent of advisor and/or instructor.

GEOG 521 Studies in Climatology and Meteorology

3 hrs.

Studies at an advanced level in climatology and meteorology. Topics of current interest to atmospheric scientists, such as global climate change, are examined in depth. Regional climatic phenomena and their relation to atmospheric circulation patterns are also investigated. Prerequisite: GEOG 225 or consent.

GEOG 544 Studies in Economic Geography

2-3 hrs.

Presents world patterns of agriculture, manufacturing, or transportation which link global production and consumption. In any item, the course focuses upon one of these three economic sectors. Prerequisite: GEOG 205 or 244 or consent.

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 interactions of local, 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.

GEOG 545 Studies in Human Geography

2-3 hrs.

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. Prerequisite: GEOG 203 or GEOG 205 or GEOG 244, or by consent of instructor. Course may be repeated for credit.

1. Cultural Geography. Techniques of spatial analysis applicable to the study of human 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 occupation and contact 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, and the assessment of location, boundary delimitation and the territorial sea, politically-organized territories within the administrative hierarchy, and electoral geography.

GEOG 553 Water Resources Management

3 hrs.

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. Prerequisite: Graduate, senior, or junior standing.

GEOG 554 Outdoor Recreation: Resources and Planning

3 hrs.

Examination of extensive, resource-based outdoor recreation (such as parks, wilderness, wild rivers, forests, 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.

GEOG 555 Contemporary Issues in Resources Management

3 hrs.

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. Prerequisite: GEOG 350 or consent.

GEOG 556 Studies in Urban and Regional Planning

3 hrs.

Each of the courses listed under this number focuses on a major aspect of planning, including a review of the objectives of the planning process, legislation pertaining to planning operations, and methods of field and library investigation required for analysis and policy formulation in matters related to planning.

1. Urban Planning and Zoning. The Planning Process and the Development of Comprehensive Plans as practiced in American communities. The legal foundations of zoning and subdivision regulations, and the implementation of the comprehensive plan. The organization, role, and relationship of the planning commission, the zoning board, and the planning department in the community. Prerequisite: GEOG 356 or consent.
2. Regional Planning. Studies in the administration and coordination of planning programs at the regional level, e.g., transportation and communications, land use and conservation, drainage systems and wastewater treatment, residential and industrial development. The evolution and current status of planning methodologies are examined with emphasis on economic and environmental tradeoffs, and on problems of implementing regionally-oriented planning programs.
3. Public Lands and Parks. Specific programs and policies relating to the preservation and/or development of government-controlled lands.

GEOG 557 Environmental Impact Assessment

3 hrs.

Alteration of the natural 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. Prerequisite: Senior standing and GEOG 350 or permission.

GEOG 570 Cities and Urban Systems

3-4 hrs.

Study of processes and forms of urban settlement highlighting problems relating to urban growth or decline; factors in city growth or decline; the size, function, and geographical distribution of cities; and land use and 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 Graduate Students Only

GEOG 620 Seminar in Physical Geography

2-3 hrs.

A review of current literature and recent developments in several disciplines which form the basis of physical geography. Since each seminar emphasizes different subject areas, such as landforms, soils, and vegetation, this seminar may be repeated. A final research project is required. Prerequisite: One of several advanced courses in physical geography, geology or biology, or consent of instructor.
GEOG 670 Seminar in Urban Geography and Planning 2-3 hrs.
A review of the current literature and recent methodological developments in the field of urban geography and planning. Prerequisite: GEOG 556 (1) or 570.

REGIONAL GEOGRAPHY
Open to Graduate Students Only
Prerequisites applicable to all 500-level courses in Geography include 14 credit hours of geography, or consent of advisor and/or instructor.
GEOG 510 Anglo American 3 hrs.
Review of the physical, cultural, and economic geography of the United States and Canada. Focus on regional problems and outlooks. Lectures, assigned readings, and periodic seminars. May not be taken for credit if student has received credit for GEOG 380.
GEOG 511 South America 3 hrs.
Regional study of the nations of South America with attention to the interrelationships of the physical and cultural environments. Historical background necessary for the interpretation of the present political, social, and economic conditions is included. May not be taken for credit if student has received credit for GEOG 381.
GEOG 512 Middle America 3 hrs.
Systematic consideration of the physical environment of Mexico, Central America, and the West Indies. A problems approach is utilized to reckon with the economic, social, and political trends of the region. May not be taken for credit if student has received credit for GEOG 382.
GEOG 513 Western and Southern Europe 3 hrs.
Examination from western Europe from a regional perspective. The environmental and historical backgrounds serve as a foundation for more intensive study of contemporary conditions, problems, and issues. May not be taken for credit if student has received credit for GEOG 383.
GEOG 518 The Pacific Realm 3 hrs.
Analysis of the human and physical geography of the Southern Pacific, with concentration on Australia, New Zealand, and Polynesia. May not be taken for credit if student has received credit for GEOG 385.
GEOG 520 South Asia 3 hrs.
Survey of the physical, cultural, and economic geography of the Indian subcontinental region (India, Pakistan, Bangladesh, Sri Lanka and the countries of the Himalayas). Primary focus is placed on India with emphasis upon the characteristic spatial patterns and relationships found in the region. May not be taken for credit if the student has received credit for GEOG 386.
Open to Graduate Students Only
GEOG 609 Studies in Regional Geography 2-3 hrs.
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, and may be repeated for credit. Prerequisite: An appropriate introductory course at either the undergraduate or graduate level.

GEOGRAPHIC METHODOLOGY AND RESEARCH
Open to Underclass and Graduate Students
Prerequisites applicable to all 500-level courses in Geography include 14 credit hours of geography, or consent of advisor and/or instructor.
GEOG 501 Introduction to Geographic Information Systems 4 hrs.
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. Prerequisite: Completion of University computer literacy proficiency.
GEOG 557 Environmental Impact Assessment 3 hrs.
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 statements. Prerequisites: Senior standing and Geography 350 or permission.
GEOG 566 Field Geography 2-4 hrs.
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 observations. (One hour lecture and three hours laboratory.) Prerequisites: GEOG 265 or 375 and 582 or consent of instructor.
GEOG 567 Geodata Handling and Mapping 4 hrs.
Introduction to fundamental principles and procedures of remotely sensed data, including 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. Prerequisites: GEOG 367 or consent of instructor.
GEOG 582 Remote Sensing of the Environment 3 hrs.
The student will acquire proficiency in the fundamental techniques and skills of photogrammetry and photointerpretation during the first part of the course. The remainder of the semester will be spent in interpreting photos dealing with such topics as geomorphology, archaeology, vegetation and soils, water resources, rural and urban land use, as well as topics adopted to the interest and anticipated future work of the student.
GEOG 597 Independent Study 1-3 hrs.
Designed for highly qualified majors and graduate students who wish to study in depth some aspect of their field of specialization under a member of the departmental staff. Prerequisite: Written consent of departmental advisor and instructor.
Open to Graduate Students Only
GEOG 661 Geographic Research 4 hrs.
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. Prerequisite: Consent of graduate advisor.
GEOG 665 Seminar in Geography 1-3 hrs.
Designed for the advanced student interested in analyzing problems related to various topics in geography. Prerequisite: Consent of instructor. May be repeated.
GEOG 668 Professional Development Seminar 1 hr.
Students participate in selected activities relating to professional development. These activities include critiques of professional presentations, participation in professional meetings, and presentations of papers to faculty and colleagues. This course cannot be repeated for credit. This course is graded on a Credit/No Credit basis.
GEOG 669 Advanced GIS Seminar 3 hrs.
The course extends the focus of GEOG 569, Geographic Information Systems, 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, 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 modeling and customizing GIS with internal and external programming languages, project design, and management. Prerequisites: GEOG 567, 569, and an introductory computer programming course (Visual Basic, C++, FORTRAN, PASCAL, or the equivalent).
GEOG 682 Advanced Remote Sensing 3 hrs.
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.
GEOG 688 Content Standards in Geography/Social Studies Teaching
3 hrs.
The course develops the content that is essential for teaching content standards based social studies in Michigan schools with an emphasis upon geography. The content basis, including theories, concepts, and principles of the social sciences and the inquiry processes they employ, will be applied to the instructional expectation of social studies teachers. Course is repeatable for credit when topics vary. Prerequisite: Consent of departmental advisor.

GEOG 676 Assessment in Geography/Social Studies
3 hrs.
The course develops classroom and large-group assessment theory and principles of practice in geography/social studies for grades 5-12 students. Selected, constructed and extended response items that conform to the MEAP model for social studies are the assessment format for development, design, and analysis. Emphasis will be on classroom tests that assess higher level thinking skills in geography/social studies. Course is repeatable for credit when topics vary. Prerequisite: Consent of departmental advisor and instructor.

Open to Graduate Students Only—Please refer to The Graduate College section for course descriptions.

GEOG 700 Master's Thesis
6 hrs.
GEOG 710 Independent Research
2-6 hrs.
GEOG 712 Professional Field Experience
2-12 hrs.

GEOSCIENTES
Dr. Mohamed Sultan, Chair
Main Office: 1183 Rood Hall
Telephone: 387-5487
FAX: 387-5513

David Barnes
Daniel Caesidy
Ronald B. Chase
G. Michael Grammer
Johnson Heas
Duane Hampton
Alan E. Kehew
Michelle Kornin
Carlos A. Koratzky
R. V. Krishnamurthy
Heather Petrovici
William A. Sauck
Christopher J. Schmidt
Mohamed Sultan

The Department of Geosciences offers the Master of Science in Geology as well as the Master of Science in Earth Science, which is an interdisciplinary program having two options, with geology as a core. The Department also offers the Doctor of Philosophy in Geology.

Master of Science in Geology
Advisor: Carla Koretsky, Room 1121, Rood Hall

The Master of Science in Geology is designed to prepare the student for professional work in geology and for further graduate study.

Admission Requirements
Undergraduate major in geology. Consideration of other preparation will be handled on an individual basis.

Program Requirements
1. Thirty semester hours (excluding deficiencies) of graduate credit in Geosciences and related areas (in other sciences and mathematics), with at least twenty-one hours in Geosciences. Up to nine hours in related areas may be chosen with the consent of the graduate advisor. Areas of specialization in the Geosciences Department include Sedimentary Geology-Paleontology, Structural Geology, Petrology-Mineralogy, Environmental and Surficial Geology, Hydrogeology, Geophysics, Stable Isotope Geochemistry, and Remote Sensing.
2. All students are expected to attend Departmental seminars and are required to give one presentation in residence. Students may enroll for credit in GEOS 660 for seminar presentations.
3. A copy of the Graduate Record Examination score must be supplied to the department before the end of the first semester in residence.
4. Satisfactory completion of GEOS 700, Master's Thesis (6 hrs.)
5. Successful completion of an approved rock-oriented field course if not completed in the student's undergraduate program.
6. Pass an oral thesis defense examination. In the case of failure, one retake is possible.

Master of Science in Earth Science
The Master of Science in Earth Science permits students to design programs of study, in consultation with the program advisor, that are compatible with the individual's goals. The program may be adapted for students with backgrounds in biology, geography, agriculture, geology, junior college science education, journalism, landscape architecture, anthropology, and physics. Some remedial work may be necessary for students entering the program with a minimal background. Courses for the program will be drawn from geology, geography, biology, anthropology, economics, political science, communication, chemistry, physics, and others.

Program Requirements
1. A minimum of thirty-five hours is required for the degree without a master's thesis or thirty hours with a thesis.
2. A core of eighteen semester hours in geology is required, including GEOS 438 (or equivalent).
3. May include satisfactory completion of four hours of GEOS 710 (Independent Research) or three hours of GEOS 712 (Field Experience), or both, but not to exceed seven hours.
4. Pass a comprehensive oral examination. If the first attempt at the oral exam is not considered satisfactory, then a second oral exam or a written exam will be required.
5. Students are expected to attend Departmental seminars and are required to give one presentation. Students may enroll for credit in GEOS 660 for seminar presentations.

Master of Science in Earth Science (Teaching)
The Master of Science in Earth Science (Teaching) is designed to provide students with a foundation in the fields of astronomy, geology, meteorology, and oceanography. Graduates of the program are employed in teaching in secondary schools and junior colleges.

Admission Requirements
Students should have completed an undergraduate major in earth science or its equivalent and one semester each of college chemistry and physics. Students planning to teach in secondary schools should complete certification requirements.

Program Requirements
1. A minimum of thirty hours of graduate credit in earth science or related disciplines with consent of graduate advisor.
2. Students are expected to attend Departmental seminars and are required to give one presentation. Students may enroll for credit in GEOS 660 for seminar presentations.
3. Complete a general exploratory examination in earth science covering astronomy, oceanography, meteorology, and geology at the beginning of the first semester in residence.
4. Optional election of GEOS 700 (Thesis) or GEOS 710 (Independent Research).
5. Oral defense of the thesis or independent research will substitute for the comprehensive exam.

Doctor of Philosophy in Geology
Advisor: Alan E. Kehew, Room 3325, Rood Hall

The Doctor of Philosophy in Geology with emphasis in hydrogeology is a research degree designed for persons intending to take leadership roles in teaching and research and in applied areas of hydrogeology. Applicants will be expected to meet the entrance requirements of The Graduate College and to demonstrate that they have an interest in, and aptitude for, conducting high quality research. As soon as possible after matriculation, students will be assigned a graduate advisor. After admission to candidacy the student will be assigned an individual doctoral research committee chairperson and two faculty sponsors. The composition of the committee will be based on the
student's expressed interests. In special cases a third faculty sponsor from another institution or field may be appointed to the doctoral research committee. These members of the Graduate Faculty will facilitate and guide the students' development within the academic and research programs of the Department and University.

Admission Requirements

1. Master's degree in hydrogeology or related field, e.g. geology, geophysics, or geochemistry. Applicants with degrees in chemistry, biology, environmental engineering, civil engineering, and geography may be admitted provided they take remedial work in hydrogeology.

2. Grade-point average of 3.25 of 4.0 in graduate work.

3. Applicants are to arrange for three letters of recommendation to be sent from academic and/or professional sources.

4. Applicants are to submit the results of the Verbal, Analytical, Quantitative, and Geology, or major area if other than geology, portions of the Graduate Record Examination.

Program Requirements

1. Completion of an initial (60) hours of coursework and dissertation credits beyond the master's degree. Programs will be developed by the student in consultation with the student's doctoral committee.

2. Two research skills from the following:
   a. Reading proficiency in one foreign language other than English selected in consultation with the graduate advisor; and/or
   b. Research skill in mathematics, statistics, computer science, or other approved field.

3. Qualifying Examination. Before admission to candidacy for the doctoral degree the student must pass a general examination in hydrogeology. This examination is intended to determine the student's fundamental knowledge of the field in several areas of specialization including: hydrology, geological measurements and interpretation, geochemistry, mathematics/modeling and field methods. It shall consist of an initial written portion, and an oral portion that will be conducted within six months of the written portion of the examination.

4. Complete and successfully defend a dissertation on a research topic approved by the student's doctoral committee. Fifteen credit hours are required for the doctoral dissertation.

General Plan and Sequence of Program

As soon as possible after admission, and with the advice of the doctoral doctoral committee the student will select an advisor who will chair his/her dissertation committee. The doctoral program will be planned by the student in consultation with his/her advisor and the doctoral committee.

Minimum requirements in ancillary fields include mathematics through differential equations and approved upper division courses in chemistry, statistics, geography, and geology. Additional outside course work applicable to the dissertation problem may be required by the doctoral committee. The student will present a seminar on the results of his or her dissertation research to the University and defend his/her dissertation.

Students entering the Ph.D. program in hydrogeology will consider the following in developing the curricular sequences in their program:

1. If curricular deficiencies exist, required courses are to be taken beginning in the first semester. No credit is granted for courses that have been satisfactorily completed in a previous degree.

2. Research tool courses are to be taken as early as practicable in the program of study.

3. Courses that are logic precursors to other courses should be taken in their proper sequential order. Each student will develop a proper sequence of courses with his/her dissertation committee.

Sample Program for a Student Entering with a Master's Degree in Geology

Master's degree component of program

<table>
<thead>
<tr>
<th>Courses</th>
<th>Credit Hours</th>
</tr>
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<tbody>
<tr>
<td>GEOS 512 Hydrogeology</td>
<td>3</td>
</tr>
<tr>
<td>GEOS 623 Surface Water Hydrology</td>
<td>1</td>
</tr>
<tr>
<td>GEOS 526 Principles and Practices of Aquifer Testing</td>
<td>1</td>
</tr>
<tr>
<td>GEOS 700 Master's Thesis</td>
<td>6</td>
</tr>
</tbody>
</table>

Entering students who do not have MATH 274, Ordinary Differential Equations, or CHEM 365, Introduction to Organic Chemistry, will be required to take these courses as deficiencies during their first year in the program.

Sample Program for a Student Entering with a Bachelor's Degree in Hydrogeology

Master's degree component of program

<table>
<thead>
<tr>
<th>Courses</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOS 503 Geochronology and Global Change</td>
<td>3</td>
</tr>
<tr>
<td>GEOS 536 Geochronology</td>
<td>3</td>
</tr>
<tr>
<td>GEOS 593 Electrical Methods</td>
<td>3</td>
</tr>
<tr>
<td>GEOS 603 Advanced Hydrogeochemistry</td>
<td>3</td>
</tr>
<tr>
<td>GEOS 611 Mineral Analysis</td>
<td>3</td>
</tr>
<tr>
<td>GEOS 612 Advanced Hydrogeology</td>
<td>3</td>
</tr>
<tr>
<td>GEOS 614 Environmental Data Processing Overview</td>
<td>6</td>
</tr>
<tr>
<td>GEOS 617 Stable Isotope Geochemistry</td>
<td>3</td>
</tr>
<tr>
<td>GEOS 666 Advanced Seminar in Hydrogeology Research and professional field experience</td>
<td>3</td>
</tr>
<tr>
<td>GEOS 710 Independent Research</td>
<td>5</td>
</tr>
<tr>
<td>GEOS 712 Professional Field Experience</td>
<td>3</td>
</tr>
<tr>
<td>GEOS 735 Graduate Research</td>
<td>10</td>
</tr>
<tr>
<td>GEOS 730 Doctoral Dissertation</td>
<td>15</td>
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</tbody>
</table>

Sample Program for a Student Entering with a Master's Degree in Geology

Students who have had the equivalent of any of the courses listed will be permitted to take alternate courses from the list of elective courses. Entering students will be encouraged to take courses to develop "tool skills" early in their program.

Doctoral degree component of program

<table>
<thead>
<tr>
<th>Courses</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOS 506 Introduction to Soils</td>
<td>3</td>
</tr>
<tr>
<td>GEOS 516 Geochronology and Global Change</td>
<td>3</td>
</tr>
<tr>
<td>GEOS 536 Geochronology</td>
<td>3</td>
</tr>
<tr>
<td>GEOS 593 Electrical Methods</td>
<td>3</td>
</tr>
<tr>
<td>GEOS 603 Advanced Hydrogeochemistry</td>
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Sample Program for a Student Entering with a Bachelor's Degree in Geology

Master's degree component of program

<table>
<thead>
<tr>
<th>Courses</th>
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</tr>
</thead>
<tbody>
<tr>
<td>GEOS 528 Principles/Practices of Groundwater Sampling/Monitoring</td>
<td>1</td>
</tr>
<tr>
<td>GEOS 603 Surface Water Hydrology</td>
<td>3</td>
</tr>
<tr>
<td>GEOS 605 Groundwater Modeling</td>
<td>3</td>
</tr>
<tr>
<td>GEOS 608 Advanced Hydrogeochemistry</td>
<td>3</td>
</tr>
<tr>
<td>GEOS 609 Surface Water Hydrology</td>
<td>3</td>
</tr>
<tr>
<td>GEOS 612 Advanced Hydrogeology</td>
<td>3</td>
</tr>
<tr>
<td>GEOS 614 Environmental Data Processing Overview</td>
<td>3</td>
</tr>
<tr>
<td>GEOS 615 Contaminant Hydrogeology</td>
<td>3</td>
</tr>
<tr>
<td>GEOS 617 Stable Isotope Geochemistry</td>
<td>3</td>
</tr>
<tr>
<td>GEOS 666 Advanced Hydrogeochemistry Semi-thesis</td>
<td>3</td>
</tr>
<tr>
<td>Research/and Professional Field Experience</td>
<td>10</td>
</tr>
<tr>
<td>GRAD 710 Independent Research</td>
<td>5</td>
</tr>
<tr>
<td>GRAD 730 Doctoral Dissertation</td>
<td>15</td>
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</tbody>
</table>

Research experiences required in this program

<table>
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<tr>
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<tr>
<td>GEOS 710 Independent Research</td>
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<tr>
<td>GEOS 735 Graduate Research</td>
<td>10</td>
</tr>
</tbody>
</table>

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 Geology and from The Graduate College.

Geosciences Courses (GEOS)

Open to Upperclass and Graduate Students

Prerequisites applicable to all 500-level courses in Geology are junior status or above and 12 or more credit hours of course work in geology, including the specific prerequisite for each course, or consent of instructor.

GEOS 502 Problems in Geology and Earth Science

1-3 hrs.

Individual problems involving topical reading and/or research problems in earth sciences. May be repeated for credit. Prerequisite: GEOS 300, 301, 440, or consent of instructor.

GEOS 503 Environmental Consulting Practice

2 hrs.

An introduction to the principles and practices that are peculiar to environmental consulting. Emphasis is placed on the legal, business, and practical considerations needed to conduct a consulting practice. This course is not to be counted toward the 60 credits beyond the master's in the Ph.D. program. Prerequisite: Graduate standing in Geology or Earth Science.

GEOS 566 Introduction to Soils

3 hrs.

Properties of natural and engineered soils. Interactions between soils and plants, microorganisms, water, atmosphere, and contaminants. Soil uses, remediation, and conservation. Prerequisites: GEOS 301, MATH 122 and conquisite MATH 123. CHEM 100/111.
GEOS 512 Hydrogeology 3 hrs.
This study of surface water and groundwater with special emphasis on groundwater movement and relation to the geologic environment. Prerequisite: GEOS 301 or GEOS 335; MATH 122. MATH 123 to be taken concurrently.

GEOS 514 Isotope Hydrology 3 hrs.
Principles of isotope fractionation. Experimental techniques in isotope mass spectrometry. Carbon, oxygen, and hydrogen isotope systems in the hydrologic cycle. Application of stable isotope techniques to study ground water – surface water interaction. Use of nitrogen isotope measurements in understanding round water. Introduction to the field and fate of nitrate load. Introduction to developments in the application of chlorine isotopes in hydrology. The course will include a seminar style approach requiring summarizing of recent research papers. Prerequisite: Instructor's consent.

GEOS 515 Applied Hydrology 3 hrs.
Application of hydrogeologic theory to water supply networks. Topics include well installation, well testing, aquifer testing, and distribution systems. Prerequisite: 12 hours of geology, earth science, or consent of instructor.

GEOS 516 Geochronology and Global Change 3 hrs.
Application of the concepts of nuclear physics and chemistry to geological problems. Topics to include absolute and relative dating, formation of the elements, global change and causes of global change. Prerequisites: Basic knowledge of chemistry, physics, and math; GEOS 335.

GEOS 520 Economic Geology 3 hrs.
Origin, occurrence, and utilization of metallic and non-metallic mineral deposits, and mineral fuels. Three lectures per week. Prerequisite: GEOS 361 or GEOS 335.

GEOS 523 Hazardous Waste Operation and Emergency Response 1 hr.
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. Prerequisites: GEOS 412 or 512.

GEOS 524 Remediation Design and Implementation 1 hr.
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. Prerequisites: GEOS 412 or 512.

GEOS 525 Surface Geophysics 1 hr.
An introduction to the use of those surface geophysical methods used in the investigation of ground water. Includes shallow seismic, electrical, and magnetic methods; and ground penetrating radar. Prerequisite: GEOS 412 or GEOS 512.

GEOS 526 Principles and Practices of Aquifer Testing 1 hr.
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. Data collection, data reading, and water level measuring equipment. Prerequisite: GEOS 412 or GEOS 512.

GEOS 527 Principles of Well Drilling and Installation 1 hr.
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, silt spone, and Shelby tube, borehole geophysics, and installation and development of wells. Prerequisite: GEOS 412 or GEOS 512.

GEOS 528 Principles/Practices of Groundwater Sampling/ Monitoring 1 hr.
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. Prerequisite: GEOS 412 or GEOS 512.

GEOS 530 Plate Tectonics and Earth Structure 3 hrs.
Major tectonic features and internal structure of the earth in relation to plate tectonics, critical examination of the tectonic theory, introduction to applied tectonics. Prerequisites: GEOS 301 or GEOS 335, 430, or consent of instructor.

GEOS 535 Numerical and Spatial Data Analysis in the Geosciences 3 hrs.
Application of various of elementary statistical methods (including elementary geostatistics) and computer-based software applications (including Arcview GIS) to the management, analysis, and display of multidimensional, sold earth, geosciences data through completion of a special project using established geological data sources or original, research project data. Prerequisites: MATH 160, GEOG 375.

GEOS 536 Glacial Geology 3 hrs.
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. Prerequisites: GEOS 301 or GEOS 335.

GEOS 540 Igneous and Metamorphic Petrology 4 hrs.
Advanced discussion of origins and positions of igneous and metamorphic rocks in light of recent experimental evidence and concepts of global tectonics. Prerequisite: GEOS 440 or equivalent.

GEOS 545 Hazardous Waste Remediation 3 hrs.
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, soil pollution, and groundwater pollution. Prerequisites: MATH 122 and corequisite MATH 123; CHEM 112/113.

GEOS 555 Introduction to Geochemistry 3 hrs.
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. Three hours lecture per week with weekly problem sets. Prerequisites: GEOS 335, CHEM 112/113.

GEOS 560 Introduction to Applied Geophysics 3 hrs.
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. Prerequisites: GEOS 301 or GEOS 440; GEOS 430; MATH 122; two semesters of college physics; or consent of instructor.

GEOS 561 Reflection Seismology 3 hrs.
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. Prerequisites: GEOS 560 and MATH 123.

GEOS 562 Gravity and Magnetic Exploration 3 hrs.
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. Prerequisites: GEOS 560 and MATH 123.

GEOS 563 Electrical Methods 3 hrs.
Resistivity sounding and profiling, induced polarization, spontaneous potential, electromagnetic methods using natural and artificial fields. Two lectures and 3 hr. laboratory with field studies and laboratory modeling. Prerequisites: GEOS 560; MATH 123, and (PHYS 440 recommended).

GEOS 564 Environmental Field Geophysics 3 hrs.
Field studies utilizing seismic gravity, and magnetic, electromagnetic, georadar, and electrical resistivity methods for glacial geology and groundwater engineering, and environmental problems in the Kamatzoa area. Course also includes field work at local sites. Prerequisite: GEOS 560, or consent of instructor.

Open to Graduate Students Only

GEOS 600 Hydrochemistry 3 hrs.
Geochemical origin and characteristics of surface water and groundwater, equilibrium thermodynamics, the carbonate system, redox processes, ion exchange, organic compounds and isotopes. Prerequisite: GEOS 512 or consent of instructor.

GEOS 605 Groundwater Modeling 3 hrs.
Study of groundwater flow and contaminant transport rates using analytical and numerical models. Prerequisites: GEOS 512 and MATH 123.

GEOS 608 Advanced Hydrochemistry 3 hrs.
Investigation of selected topics in hydrochemistry. A problem-oriented approach to the study of classical and current topics dealing with natural and contaminated groundwaters. Prerequisite: GEOS 500.

GEOS 609 Surface Water Hydrology 3 hrs.
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. Prerequisite: GEOS 610.

GEOS 610 Geochemistry 3 hrs.
An introduction to the basic principles and theories of geochemistry. Prerequisites: GEOS 440 or permission.

GEOS 611 Mineral Analysis 3 hrs.
X-ray diffraction and fluorescence techniques applied to mineralogical and petrological problems. Prerequisites: GEOS 335 or permission.
GEOS 612 Advanced Hydrology
3 hrs.
Analytical and numerical analysis of groundwater flow and contaminant transport. Topics include well hydraulics, flow in unsaturated soils, multiphase flow, and advective-dispersion. Prerequisite: GEOS 512, 605, and MATH 123.

GEOS 613 Wetlands Hydrology
3 hrs.
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 wetland delineation. Prerequisite: GEOS 512 or consent of instructor.

GEOS 614 Environmental Regulatory Overview
3 hrs.
Study of those federal and state laws that govern the distribution, use and pollution of natural waters. Emphasis is placed on current interpretations and policy.

GEOS 615 Contaminant Hydrology
3 hrs.
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.

GEOS 617 Stable Isotope Geochemistry
3 hrs.

GEOS 630 Structural Analysis
3 hrs.
The theory and methods involved in geo- metric, kinematic, and dynamic analysis of de- formed rock bodies. All scales of observation are considered from hand specimens to large map areas. Prerequisite: GEOS 430 and consent.

GEOS 634 Research in Geology and Earth Science
1-4 hrs.
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).

GEOS 645 Carbonate and Clastic Petrology
3 hrs.
Identification, recognition, and analysis of sedimentary rocks in hand specimen and thin section. Study of the distribution of sediments in basinal settings. Prerequisite: GEOS 433 and 435, or consent of instructor.

GEOS 646 Carbonate and Evaporite Depositional Systems
3 hrs.
Processes, characteristics, and relationships of modern and ancient basinal carbonate and evaporite facies. Course includes an 11-day field trip (Winter break) to investigate Holocene, Pleistocene, and Tertiary carbonate environments and facies in Florida; and a 3-day trip to northern Indiana and Ohio to examine Silurian Plattform carbonates. Student projects include logging, description, and interpretation of cores and slabs at the mesoscale level. Two lectures and one 3-hour laboratory per week. Prerequisites: GEOS 433, GEOS 435.

GEOS 650 Topics in Geology and Earth Science
2-4 hrs.
An intensive study of specific subjects in the area of Earth Science as listed. Prerequisite: Consent of instructor. Subject to be offered during a semester or term. Will be announced in advance.

GEOS 655 Quantitative Basin Analysis
3 hrs.
Theory and practical application of sequence stratigraphy and backstripping, two fundamental tools of the petroleum industry and academic community. Prerequisites: GEOS 435 and GEOS 580 or consent of instructor.

GEOS 656 Clastic Depositional Systems
3 hrs.
Description and analysis of clastic depositional systems and discussion of the sediment they produce. Laboratory investigations include stratigraphic and seismic analysis. Prerequisite: GEOS 435 or consent of instructor.

GEOS 660 Seminar in Geology and Earth Science
1 hr.
A seminar designed to provide students with the opportunity to examine and discuss important problems in Earth Science. Oral presentations will be required. Prerequisite: Consent.

GEOS 666 Advanced Hydrology Seminar
1-3 hrs.
Topics in theoretical and applied hydrology. Course is repeatable for credit. Prerequisite: Graduate standing.

Open to Graduate Students Only—Please refer to The Graduate College section for course descriptions.

GEOS 700 Master's Thesis
6 hrs.

GEOS 710 Independent Research
2-6 hrs.

GEOS 712 Professional Field Experience
2-12 hrs.

GEOS 730 Doctoral Dissertation
15 hrs.

GEOS 735 Graduate Research
2-10 hrs.

HISTORY
Dr. Marion Gray, Chair
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Ronald Davis
Howard Dooley
E. Rozanne Elder
Nora Faires
Ralph Gordon
Marion Gray
Ross Gregory
Bruce Haight
Barbara Havera
Lynne Hessley
Catherine Julien
Mitch Kachun
Cheryl Lyon-Jennens
Paul Maier
John Norman
R. Patrick Norris
James Palmistesia
Dale Porter
El Rubin
Adam Sabra
Peter Schmitt
Larry Simon
Judith Stone
Kristin Szylwan
Luis Toledo Pereyra
Wilson Warren
Victor Xiong
Takashi Yoshida

Director of Graduate Studies
The Director of Graduate Studies is the central application, admissions, and advising source in the department. Upon arrival, all students must meet with the Director to register for classes, to be advised regarding a supervising professor, and to plan an overall course of study. Upon completion of 12 hours of course work, all M.A. students must meet with their supervising professor to complete their permanent plan of study to file with The Graduate College.

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 arms: 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 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

Advisor: Judith F. Stone, Room 4352, Friedmann Hall

The Master of Arts in History serves both as a professional degree in many fields of research, teaching, and public history.

Admission Requirements
1. Substantial undergraduate course work in history and related social sciences and humanities. (Students with strong academic records but deficient in undergraduate course work may be admitted with a stipulation to complete appropriate undergraduate courses.)
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. 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 hrs.):

Requirements:
1. HIST 601
2. Broad field of specialization built around readings courses and research seminars. At least two readings courses (HIST 605-620) are required and additional course work in this area is strongly recommended. At least one research seminar (HIST 670, 675-688) is required. Specific research emphases are developed in consultation with the Graduate Advisor and department faculty. Consult the department's Graduate Handbook for further information.
3. Students must take at least two courses (one at the 600-level) which focus as a major part of the course work on the tools that historians use, such as cartography, paleography, oral history, anthropology, ethnohistory, ethnography, material culture, art, architecture, archeology, etc. These courses are designated by the Graduate Studies Committee and a list of courses which meet this requirement each semester will be available from the Director of Graduate Studies at registration.
4. The department requires at least one course covering theory and/or research practices in an allied social science or humanities discipline. (Up to 6 hrs. of appropriate course work may be chosen outside the department, and up to 6 hrs. of appropriate course work in history at the 400-level, exclusive of 496-499, may be elected with the approval of the supervising professor and the Director of Graduate Studies.
5. Foreign language requirement: Proficiency in a foreign language demonstrated by satisfactory completion of a 201-level or 401-level foreign language course, or by a translation examination.
6. Thesis: a major research investigation in the field of specialization. Candidates with an advanced record of research and/or publication may substitute a second research seminar (HIST 670, 675-688) with the prior approval of the Graduate Advisor.
7. 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 graduate handbook for additional information regarding the thesis.

GENERAL OPTION (33 hrs.):

Requirements:
1. HIST 601
2. At least one research seminar (HIST 670, 675-688). Research seminars have prerequisite readings courses.
3. Students must take at least one course which focuses as a major part of the course work on the tools that historians use, such as cartography, paleography, oral history, anthropology, ethnography, ethnography, material culture, art, architecture, archeology, etc. These courses are designated by the Graduate Studies Committee and a list of courses which meet this requirement each semester will be available from the Director of Graduate Studies at registration.
4. Up to 12 hrs. of course work may be taken outside the department in an advisor-approved program of study, and up to 6 hrs. of appropriate course work in history at the 400-level, exclusive of 496-499, may be elected with the approval of the supervising professor and Director of Graduate Studies.
5. Comprehensive examination: a course-based written examination following completion of at least 24 hrs. of course work including required core courses and a research seminar. An oral examination may also be required by the student's exam committee.

PUBLIC HISTORY OPTION (39 hrs.):

Requirements:
1. HIST 601
2. At least one research seminar (HIST 670, 675-688). Research seminars have prerequisite readings courses.
3. Students must take at least three courses (two at the 600-level) which focus as a major part of the course work on the tools that historians, particularly public historians use or courses which focus on tools of particular importance to public historians. These courses are designated by the Graduate Studies Committee and a list of courses which meet this requirement each semester will be available from the Director of Graduate Studies at registration.
4. Up to 12 hrs. of course work may be taken outside the department in an advisor-approved program of study, and up to 6 hrs. of appropriate course work in history at the 400-level, exclusive of 496-499, may be elected with the approval of the supervising professor and Director of Graduate Studies.
5. An internship/field experience (HIST 640 or 712: 6 hrs.).
6. Comprehensive examination: a course-based written examination following completion of at least 24 hrs. of course work including required core courses and a research seminar. An oral examination may also be required by the student's exam committee.

Graduate 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, oral evidence, 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, one can 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, 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 a particular geographic area or 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 recommended courses, at least one of which will be outside of their home department. See the Ethnohistory Seminar (HIST ANTH 609) two times, which will be alternately taught each year by faculty from History and Anthropology.

Doctor of Philosophy in History

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 history and oral tradition, ethnography, archaeology, material culture, museum studies, historic preservation, gender studies, and documentary editing. 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 Institute of Cistercian Studies, the Ravenos Center for Anglo-Saxon and Manuscript Studies, the Kercher Center for Social Research, the Dietrich B. Hauck Center for International Study, the Great Lakes Center for Maritime Studies, the Archives and Regional History Collection, and the holdings of the French Michilimackinac Translation Project.

Admission Requirements
1. Admission normally requires a master's degree in history or a closely related discipline, or substantial prior course work in history.
2. Students holding baccalaureate degrees may be admitted directly to the program but must complete Master of Arts comprehensive examinations after approximately 18 hours of course work with a recommendation by the examining committee to continue doctoral studies.
3. Graduate Record Examination (GRE) general aptitude test scores.
4. Three letters of recommendation from individuals familiar with the applicant's academic work.
5. A brief essay concerning applicant's academic and professional objectives, and a writing sample.
6. Reading proficiency in foreign languages appropriate to the proposed program of study is strongly recommended; studies to meet deficiencies in this area must be completed 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.

**Program Requirements**

Award of the Doctor of Philosophy in History is based upon successful completion of qualifying examinations in several fields, and demonstration in seminars and the dissertation of the ability to conduct independent 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. The Master of Arts thesis option and the Doctor of Philosophy program share many common structures and requirements, and may be planned as a single program of study. Candidates admitted with a master's degree from another institution or discipline may need more than the minimum of 45 hours of course work to complete the field requirements.

All students must complete two core courses in their first year of study: HIST 501 and HIST 502. 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. Core courses must be completed by the end of the first year of graduate course work. 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 professional competence.

**Minor Field**

A minor field designates an area of study which is related 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.

**Foreign Language Requirement**

Students must demonstrate reading proficiency in at least one foreign language appropriate for their purposes of study prior to qualifying examinations. Proficiency is demonstrated by satisfactory completion of a 201-level or 401-level foreign language course, or by a translation examination. Many major fields have additional foreign 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 foreign language is a research tool requirement for all doctoral students in the history program. In addition, competence in quantitative, statistical, or qualitative methodology must be exhibited to meet the second and third tool requirements. Competence in a tool is normally shown by a grade of "B" or better in approved course work, or by an advanced degree in an allied social science or humanities discipline.

In some instances, a student may substitute a second foreign language for one of the tools in quantitative, statistical, or qualitative methodology. Course work is selected in consultation with the student's examination committee and must be approved by the Director of Graduate Studies.

**Qualifying Examinations**

Written and oral qualifying examinations are taken after the satisfactory completion of all core work and foreign language requirements. Examinations cover the major and minor fields and in some cases the outside field.

**Dissertation**

The dissertation comprises from 12 to 18 hours of graduate course work depending upon other characteristics of the program of study.

**History Courses (HIST)**

Open to Upperclass and Graduate Students

Undergraduates with junior or senior standing and 12 or more credit hours of course work in history may enroll in 500-level courses with prior approval of the department chair.

**HIST 500 Studies in History**

1-3 hrs.

Topics announced in Schedule of Course Offerings. May be repeated under different topics.

**HIST 510 Colloquium**

1 hr.

Research presentations by department faculty, advanced graduate students and invited scholars. Specific topics may be listed in Schedule of Course Offerings. May be repeated to a maximum of 3 hrs. Graded on a Credit/No Credit basis.

**HIST 515 Topics in Public History**

1-3 hrs.

Selected topics in aspects of public history including museology, historic preservation and cultural resource management, historical administration, information science, and applied research. Topics listed in Schedule of Course Offerings. May be repeated under different topics.

**HIST 517 Topics in Economic and Social History**

1-3 hrs.

Selected topics in the history of economic and social conditions and change such as the development of world trade and world economy, development and modernization, urbanization and social and political movements, demography and migration, family structure, etc. Topics announced in Schedule of Course Offerings. May be repeated under different topics.

**HIST 519 Topics in Intellectual and Cultural History**

1-3 hrs.

Selected topics in the history of ideas, literary and artistic expression, intellectual and cultural character of various periods and civilizations, examination of historical conditions through philosophy and the arts, etc. Topics announced in Schedule of Course Offerings. May be repeated under different topics.

**HIST 530 Studies in Early American History**

3 hrs.

Topics listed in Schedule of Course Offerings. May be repeated under different topics.

**HIST 535 Studies in Recent American History**

3 hrs.

Topics listed in Schedule of Course Offerings. May be repeated under different topics.

**HIST 550 Studies in Medieval History**

3 hrs.

May be cross-listed with MOVL 500. Topics listed in Schedule of Course Offerings. May be repeated under different topics.

**HIST 565 Studies in Modern European History**

3 hrs.

Selected approaches to European history since the Renaissance. Topics listed in Schedule of Course Offerings. May be repeated under different topics.

**HIST 585 Studies in Asian and African History**

3 hrs.

Topics listed in Schedule of Course Offerings. May be repeated under different topics.

**HIST 590 Proseminar**

3 hrs.

Research and writing on selected themes. Topics listed in Schedule of Course Offerings. May be repeated under different topics.

**HIST 591 Topics in Theory and Practice**

1-3 hrs.

Selected theoretical, technical, and interpretive issues in the field of history; interaction with methodologies of other social science and humanities disciplines; innovative forms and techniques of documentation and data collection; major historical interpretations currently before the academic world and the public. Topics listed in Schedule of Course Offerings. May be repeated under different topics.

**HIST 592 Computers in Historical Research**

1-3 hrs.

Computer applications to historical and related research projects including manuscript analysis techniques, text-oriented databases, museum and historical agency database and registration systems, simulations, etc. Survey of applications in closely related disciplines. May be repeated. Prerequisite: CS 105 or equivalent.

**HIST 595 History Writing Workshop**

1-3 hrs.

Practicum in the writing of history: editing and publishing; preparation of written materials for lay readers and audiences outside the discipline. May be repeated to a maximum of six semester hours.

**HIST 596 Local History Workshop**

1-3 hrs.

Practicum in research techniques for problems in local and small community history, including oral tradition, genealogy, and interdisciplinary method. May be repeated to a maximum of six semester hours.

Open to Graduate Students Only

**HIST 600 Historical Method**

3 hrs.

Introduction to the field of history and its recent development. Practice in the use of oral and written communication skills for conveying historical knowledge to various audiences. Survey of major journals and bibliographical tools for general research. Examination of interaction between historical techniques and those of related disciplines.

**HIST 601 Historiography**

3 hrs.

Study of the major figures, ideas, and developments in historiography. Students may conduct research in their fields of concentration.

**HIST 602 Historical Theory**

3 hrs.

Study of the literature, research, and explanatory strategies of contemporary historical theory with emphasis on social and cultural history.

**HIST 605 Readings in Early United States History**

3 hrs.

Intensive study of historiography interpretations, major works, serials, and databases in United States history from colonial times until the late nineteenth century. May be repeated under different instructor.

**HIST 658 Studies in Asian and African History**

3 hrs.

Topics listed in Schedule of Course Offerings. May be repeated under different topics.
HIST 678 Seminar in Recent United States History
3 hrs.
Advanced research. Topics may be listed in Schedule of Course Offerings. May be repeated. Prerequisites: HIST 606 or consent of instructor.

HIST 681 Byzantium and the West, 900-1400: Research Seminar
3 hrs.
The seminar explores the political, economic, and cultural relations between the Byzantine Empire and Western Europe in the period between 900 and 1400. In the first half of the course, students will discuss accounts of Western travelers (pilgrims, diplomats, and crusaders) to Byzantium and will familiarize themselves with relevant secondary works. The second half of the course centers on a close reading and analysis of a Latin travel narrative. Prerequisites: HIST 635, Latin proficiency, or permission by the instructor.

HIST 682 Seminar in Medieval History
3 hrs.
Advanced research. Topics may be listed in Schedule of Course Offerings. May be repeated. Prerequisites: HIST 612 or 635 or consent of instructor.

HIST 684 Readings in Atlantic History
3 hrs.
Atlantic history as an area of academic inquiry focuses on the connections among the peoples of Africa, Europe, and the Americas. This readings course will introduce students to this field, enabling them to acquire the necessary conceptual and methodological framework to pursue further studies in Atlantic history. In this course, we will examine scholarly works that address key topics in Atlantic history, from the seventeenth to the nineteenth centuries. Topics may include the nature of African, European, and American societies on the eve of contact; the transfer of peoples and pathogens to the Americas; the movement of commodities; slavery and emancipation; revolution and the transfer of revolutionary ideas.

HIST 685 Seminar in Atlantic History
3 hrs.
Advanced research in the history of the Atlantic world, ca. 1500 to present. Topics may be listed in the Schedule of Course Offerings. May be repeated. Prerequisite: Consent of instructor.

HIST 686 Seminar in Modern European History
3 hrs.
Advanced research. Topics may be listed in Schedule of Course Offerings. May be repeated. Prerequisite: HIST 616 or consent of instructor.

HIST 688 Seminar in Global and Contemporary History
3 hrs.
Advanced research. Topics may be listed in Schedule of Course Offerings. May be repeated under different topics.

HIST 689 Seminar in Public History
3 hrs.
Advanced research. Topics may be listed in Schedule of Course Offerings. May be repeated under different topics.

HIST 698 College Teaching and Professional Activity
3 hrs.
Introduces students to full range of teaching and other professional activities of historians, as well as how to prepare for the job market: syllabus preparation and writing, class presentations, evaluation methods, grant applications techniques, publishing, conference presentations and vita preparation. Instructor mentors students in independent teaching assignments.

Open to Graduate Students Only—Please refer to The Graduate College section for course descriptions.

HIST 700 Master's Thesis
6 hrs.

HIST 710 Independent Research
2-6 hrs.

HIST 712 Professional Field Experience
2-12 hrs.

HIST 730 Doctoral Dissertation
12-18 hrs.

HIST 735 Graduate Research
2-10 hrs.

INTERNATIONAL AND AREA STUDIES

Ronald Davis, Director
Room B 200, Ellsworth Hall
Telephone: (269) 387-3985

International and Area Studies (INTL)

Open to Upperclass and Graduate Students

INTL 500 Topics in Global and International Studies
1-3 hrs.
Topics may be listed in Schedule of Course Offerings. May be repeated.

Open to Graduate Students Only

Foreign Studies Seminars

Students may receive up to six hours credit in any combination of departments as described provided the seminar is planned with that combination in mind. No student will receive credit under any of the course plans indicated here for work done in seminars planned and conducted by other institutions or for work done independent of seminars planned by the College of Arts and Sciences.

INTL 604 Graduate Foreign Studies Seminar
1-6 hrs.

Seminars in the Social Sciences conducted outside the U.S. Students may receive credit in Africana Studies, Anthropology, Economics, Geography, History, Political Science, or Sociology, if the credit is approved by the chairperson of the department prior to registering for the seminar. Topics may be listed in the Schedule of Course Offerings. May be repeated for credit. Prerequisite: Approval of the student's graduate advisor and the instructor.

INTL 605 Graduate Foreign Studies Seminar
1-6 hrs.

Seminars in the Humanities conducted outside the U.S. Students who complete such a seminar may receive credit in the department of Communication, Comparative Religion, English, Foreign Languages, Philosophy, Spanish, and the departments of the College of Fine Arts, if the credit is approved by the chairperson of the department prior to registering for the seminar. Topics may be listed in the Schedule of Course Offerings. May be repeated for credit. Prerequisite: Approval of the student's graduate advisor and the instructor.
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 522, Introduction to Topology, or have had the equivalent prior to entering the program;
   b. MATH 530, Linear Algebra, or have had the equivalent prior to entering the program;
   c. MATH 571, Advanced Calculus II, or have had the equivalent prior to entering the program;
   d. MATH 630, Abstract Algebra I;
   e. One of the following: MATH 670, Real Analysis I, or MATH 676, Complex Analysis;
   f. An approved graduate level sequence.
2. A student must get a "B" or better in MATH 522, 530, and 571.

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
1. Complete at least fifteen approved semester hours in graduate level mathematics courses, usually selected from:
   MATH 510 Advanced Matrix Algebra
   MATH 530 Linear Algebra
   MATH 580 Number Theory
   MATH 511 Mathematical Applications
   MATH 512 Data Analysis
   MATH 515 Intermediate Analysis
   MATH 616 Survey of Algebra
   MATH 617 Discrete Dynamical Systems
   MATH 649 Studies in Geometry
2. Complete twelve semester hours of approved mathematics education courses selected from:
   MATH 652 Studies in Teaching Middle School Mathematics
   MATH 653 Studies in Teaching Secondary Mathematics
   MATH 654 Secondary School Mathematics Curriculum Studies
   MATH 655 Issues and Trends in Secondary School Mathematics
   MATH 695 Seminar in Mathematics Education
3. Complete an approved three-semester-hour, 600-level elective, selected from mathematics, mathematics education, or professional education.

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 initialed in secondary school mathematics courses, and to achieve a high level of mastery of skills associated with these concepts.

Master of Science in Applied Mathematics
Advisor: See Mathematics Office, Room 3319, Everett Tower
The Master of Science in Applied Mathematics emphasizes a broadly based study of the mathematical sciences, including statistics, differential equations, mathematical programming, and computer science. The use of mathematical models to study practical problems will be heavily stressed. Students receive broad training for professional employment in industry or government. Those completing this program will also be prepared to teach in the area of mathematical applications.

Admission Requirements
The entering student will be expected to have two years of calculus, including multivariate calculus and differential equations, a course in linear algebra, a course in probability, a course in advanced calculus, a knowledge of programming languages such as Pascal and FORTRAN, some experience with numerical methods, and a course in data structures. The courses at WMU which satisfy the admission requirements are: MATH 122, 123, 272, 374 (or 250 and 274), 570, (STAT 362 or 560), and CS 111, 112, (201 or 306). A promising student may be admitted with some deficiencies in these admission requirements. The missing work would then become an extra program requirement.

Program Requirements
1. Complete the following 25 or 26 semester hours of specified courses:
   MATH 507 Numerical Analysis I
   MATH 674 Ordinary Differential Equations
   MATH 662 Mathematical Modeling
   MATH 657 Numerical Analysis II
   MATH 658 Linear Programming OR
   MATH 610 Linear Programming for Engineers
   STAT 562 Statistical Theory OR
   STAT 662 Applied Linear Models OR
   STAT 562 Statistical Theory OR
   STAT 664 Design of Experiments I

With the approval of the advisor, a student may substitute approved electives listed below for any of the specified courses which were previously taken as an undergraduate.
2. Complete at least 6 semester hours of approved electives which are different from the above courses.
   Mathematics
   MATH 510 Applied Matrix Algebra
   MATH 527 Differential Geometry of Curves and Surfaces
   MATH 609 Studies in Applied Mathematics
   MATH 572 Vector Calculus and Complex Variables

MATH 610 Linear Programming for Engineers
MATH 637 Numerical Linear Algebra
*MATH 690 Seminar in Applied Mathematics (1 hr)
STAT 652 Statistical Theory OR
STAT 662 Applied Linear Models OR
STAT 652 Statistical Theory OR
STAT 664 Design of Experiments I

With the approval of the advisor, a student may substitute approved electives listed below for any of the specified courses which were previously taken as an undergraduate.

Mathematics
MATH 510 Applied Matrix Algebra
MATH 527 Differential Geometry of Curves and Surfaces
*MATH 609 Studies in Applied Mathematics
MATH 572 Vector Calculus and Complex Variables

Mathematics
MATH 510 Applied Matrix Algebra
MATH 527 Differential Geometry of Curves and Surfaces
*MATH 609 Studies in Applied Mathematics
MATH 572 Vector Calculus and Complex Variables
Master of Science in Computational Mathematics

Advisor: See Mathematics Office, Room 3319, Everett Tower

The Master of Science in Computational Mathematics emphasizes numerical and computer methods which have become very significant in the solution of computer-intensive scientific problems, including large scale problems. The primary objective of the program is to prepare students in the development and implementation of critical computational techniques from inception to algorithm to software.

Admission Requirements
In addition to the general requirements of The Graduate College, the entering student will be expected to have two years of calculus, including multivariate calculus and differential equations, courses in linear algebra, modern algebra, probability, advanced calculus, numerical analysis, a knowledge of the programming languages FORTRAN and Pascal, and a course in data structures. The courses at WMU which satisfy the admission requirements are: MATH 122, 123, 272, (238 and 274) or 374, 330, 507, 570, (STAT 362 or 563), and CS 111, 112, (201 or 306), (alternately CS 331 recommended).

A promising student may be admitted with some deficiencies in these admission requirements. The missing work would then become an extra program requirement.

Program Requirements

1. Complete the following 17 semester hours of specified courses:
   - MATH 571 Advanced Calculus II
   - MATH 607 Numerical Analysis II
   - MATH 637 Numerical Linear Algebra
   - MATH 690 Seminar in Applied Mathematics (1 hr)
   - STAT 530 Theory of Computation
   - STAT 562 Statistical Theory I

2. Complete 6 semester hours consisting of two of the following three courses:
   - MATH 602 Mathematical Modeling I
   - MATH 605 Optimization
   - MATH 608 Linear Programming

3. Complete at least 9 semester hours of approved electives which are different from the above courses:
   - MATH 510 Applied Matrix Algebra
   - MATH 530 Linear Algebra
   - MATH 527 Differential Geometry of Curves and Surfaces
   - MATH 602 Mathematical Modeling
   - MATH 605 Optimization
   - MATH 608 Linear Programming
   - MATH 609 Seminar in Applied Math
   - MATH 676 Complex Analysis
   - MATH 690 Seminar in Applied Mathematics (1 hr)
   - MATH 699 Reading and Research
   - MATH 712 Professional Field Experience

   *These courses may be repeated for credit.

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.

A student entering the program in Collegiate Mathematics Education must have sufficient background in mathematics and education as determined by the Collegiate Mathematics Education Committee, a joint committee of the Mathematics and Mathematics Education faculty.

Program Requirements

1. Complete the following requirements:
   - Take at least 60 hours beyond the bachelor's degree—45 hours, excluding MATH 730.
   - There must be 30 hours of mathematics courses numbered 600 or above, excluding MATH 730.
   - A maximum of 6 hours may be taken 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:
     - A two-semester graduate sequence in Algebra (MATH 630-631)
     - A two-semester graduate sequence in Analysis (MATH 670-671)
     - A two-semester graduate sequence in Topology (MATH 621-624)
     - A course in Complex Analysis (MATH 675)
     - An approved course in applied mathematics or probability/statistics
   - Take three comprehensive examinations:
     - A student in Algebra, Analysis, or Topology must take comprehensive examinations in each of these areas.
     - A student planning to do a dissertation in any other area of mathematics may, with approval of the advisor and the Mathematics Graduate Committee, replace either the Algebra or Topology examination with one in the student's specialty.
     - Demonstrate competency in two research tools, including at least one foreign language. The foreign language research tool may be satisfied by completing courses numbered 400 in foreign languages with a "B" or better or by demonstrating the ability to read mathematics in foreign languages as certified by the Mathematics Graduate Committee. Competence in computer usage as a research tool is usually demonstrated by completing 3 hours of MATH 688 with a "B" or better.
   - Teach an undergraduate mathematics class at the 200-level or higher.
   - 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 MATH 730.
   - The courses MATH 611, 612, 615, 616, 617, and 619 may not be included in the required 60 hours.

COLLEGIATE MATHEMATICS EDUCATION
This degree program requires a minimum of 60 hours beyond the bachelor's degree—65 hours, excluding MATH 730. The basic requirements of the program are as follows.

1. Complete at least 65 hours of course work, including:
   - Introduction to Topology (MATH 522),
   - Linear Algebra (MATH 530), and Advanced Calculus I & II (MATH 570 and 571)
   - A two-semester graduate sequence in Algebra (MATH 630-631)
   - A two-semester graduate sequence in another approved area of mathematics in which a comprehensive examination is offered
   - A semester course in Complex Analysis (MATH 675)
   - Five additional courses, including at least one in Applied Mathematics and at least two in Probability or Statistics (usually STAT 662 and 662)
   - Fifteen graduate hours in mathematics education
2. Pass three comprehensive examinations in
   - Algebra
   - Mathematics Education
   - One other approved area in Mathematics
3. Demonstrate competence in two research tools. This may be satisfied by demonstrating competence in computer usage, usually through 3 hours of MATH 688, and in educational research methods, usually through EDDL 640 and EDDL 648.

4. Teach an undergraduate course in mathematics at the 200-level
5. Complete and successfully defend a dissertation. This requires 15 hours of MATH 730.

Procedures

1. Upon admission every student will be assigned an advisor. The advisor and student will, within the student's first calendar year, design a tentative program for completing a Ph.D. This plan must be approved by the supervising committee.

2. A student must take the comprehensive examinations as soon as possible. After completing a course sequence leading to a comprehensive examination, a student must take the corresponding comprehensive examination the next time it is offered. Each exam will be offered twice a year as demand requires. If a student fails a comprehensive examination, the student must retake the examination the next time it is offered. 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.

3. A full-time student must take all the comprehensive examinations by the beginning of the student's fourth year. The student will be dismissed from the program after two years of examinations by the end of the fourth year. Part-time students must follow a similar
schedule adapted to the number of classes they can take each year.

3. A full-time student must start taking reading courses from potential dissertation advisors as soon as the student has passed one comprehensive examination. As soon as a student finds a dissertation advisor, the dissertation advisor becomes the student's advisor.

4. As soon as a student passes the comprehensive examinations and completes the research tools, the student, in consultation with the advisor, forms a dissertation committee and apply for candidate status. The dissertation committee will consist of the dissertation advisor, a second reader, at least one other faculty member, and a member from outside the department. This committee must be approved by the committee supervising the Ph.D. program. A student will not be allowed to register for the Ph.D. program until this requirement is completed.

5. At least one year before the final oral defense of the dissertation, each student will give an oral presentation of their proposed dissertation and answer questions on the proposal. The dissertation committee will consider the merits of the proposal and either allow the student to continue with the dissertation program, require the student to expand the scope of the research, or require the student to find a new topic.

6. After completing a dissertation and all other requirements for the Ph.D., a student will present an oral defense of the dissertation. This will be an open presentation with an open question period. The committee will then decide to accept or reject the dissertation and defense. All committee members must agree on acceptance for the student to pass.

Doctor of Philosophy in Mathematics Education

Advisor: See Mathematics Office, Room 3319, Everett Tower

The Doctor of Philosophy in Mathematics Education focuses on K-12 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, 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) background in mathematics and mathematics education, b) professional experience, c) letters of recommendation, d) resume, e) written statement of at least 500 words indicating professional goals and future plans for 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 90 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 training and education to assist other students in mathematics education, other opportunities are available in mathematics and on faculty research grants and projects. Students are expected to satisfy several program requirements.

1. Complete the following course work:

   a. At least thirty approved graduate credit hours in mathematics and statistics, including geometry (MATH 522), linear algebra (MATH 530), analysis (MATH 570 or 615), abstract algebra (MATH 630 or 618), graph theory (MATH 640), geometry (MATH 612 or 620), and statistics.

   b. Sixteen approved graduate credit hours in research methods including a course in mathematical research methods (EDLD 651), and a course in educational research methods, usually through completion of EDLD 648 and one of STAT 662, 634, or 635.

   c. Complete an internship (MATH 712) involving the teaching of an undergraduate course in mathematics or mathematics education at the 200-level or above.

   d. Complete and successfully defend a dissertation in mathematics or mathematics education.

2. Pass three comprehensive examinations in

   a. K-12 mathematics curriculum and instruction
   b. Psychological foundations and mathematic learning
   c. Research and design 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 computer literacy and research methods, usually through completion of EDLD 648 and one of STAT 662, 634, or 635.

4. Complete an internship (MATH 712) involving the teaching of an undergraduate course in mathematics or mathematics education at the 200-level or above.

5. Complete and successfully defend a dissertation in mathematics or mathematics education requiring 16 credit hours of MATH 730.

6. Procedures

   a. Upon admission a student will, within the first year of enrollment, work with a two-member advisory committee to design a program 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 program 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. Program may be reviewed for revision and continuation throughout the program.

   b. A student will schedule comprehensive examinations in consultation with the program advisor. The examinations in curriculum and in psychology each be a three-hour written examination. The evaluation 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.

   c. By the time a student has passed comprehensive examinations in curriculum and in psychology, he/she will be scheduled to take the following 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.

   d. As soon as a student has passed all three comprehensive examinations, he/she will take the written entrance exams in competencies 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. This committee must be approved by the doctoral committee of the Mathematics Education Area Group. 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 730 only if a dissertation committee has been formed and the dissertation proposal is accepted by all its members.

   e. 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.

Mathematics Courses (MATH)

Open to Underclass and Graduate Students Undergraduates with junior or senior standing and 12 or more credit hours of work in mathematics and statistics or examination at the advanced level courses with prior approval of the department chairperson.

MATH 207 Numerical Analysis I

3 hrs.

Analysis and use of numerical algorithms for the solution of nonlinear equations, systems of linear equations, interpolation, numerical differentiation and integration. Prerequisite: MATH 134 and a computer programming language beyond Basic, e.g., FORTRAN or C.

MATH 610 Applied Matrix Algebra

3 hrs.

An introduction to the study of methods to solve linear systems of equations, least squares approximation problems, and eigenvalue problems. Topics covered include the algebra of real and complex matrices with particular emphasis on LU-decompositions, QR-decompositions, singular value decompositions, generalized inverses, Hermitean symmetric matrices, positive definite matrices and the Spectral Theorem. Applications from multivariate calculus will be discussed. Prerequisite: Either: MATH 230 or (MATH 272 and MATH 374).

MATH 522 Introduction to Topology

3 hrs.

Topics to be chosen from: Topological spaces and continuous functions, metric spaces, connectivity, separation axioms, compactness, product and quotient spaces, completeness, and manifolds. Prerequisite: MATH 330 or MATH 570.
MATH 527 Differential Geometry of Curves and Surfaces
3 hrs.
An introduction to Riemannian Geometry with emphasis on curves and surfaces. Topics may include isometries, orientation, differential forms, curvature, metrics, and geodesics. Prerequisites: MATH 272 and either MATH 230 or 374. (MATH 314 is recommended.)

MATH 530 Linear Algebra
3 hrs.
Properties of finite dimensional abstract vector spaces, linear transformations, and matrix algebra are studied. Prerequisite: MATH 330.

MATH 552 Teaching of Elementary Mathematics
3 hrs.
This course covers curricular issues and trends in K-8 mathematics education. Specifically, it focuses on methods and materials for teaching mathematics effectively to K-8 students. This course is not open to undergraduate students who have completed MATH 352 with a "C" or better. Prerequisite: MATH 150 with at least a "C" or better or a course equivalent to MATH 150.

MATH 554 Algebra in the Elementary/Middle School Curriculum
4 hrs.
This course is devoted to the teaching and learning of algebra in elementary and middle grades. Concepts and skills are developed and reinforced using a variety of approaches and materials. Calculators and computers are used throughout the course to develop concepts; to explore the connections among numeric, graphic, and symbolic representations of mathematical ideas; and to model and solve problems involving quantitative variables. Prerequisites: MATH 150, 151, 265, and 352 with grades of "B" or better or consent of instructor.

MATH 555 Mathematical Modeling and Problem Solving in the Elementary/Middle School Curriculum
4 hrs.
This course provides experiences in mathematical modeling and problem solving for elementary/middle school teachers. Problem contexts are selected to deepen students understanding of important ideas in number theory, algebra, geometry, probability, statistics, and the conceptual underpinnings of calculus. Calculators and computers are used extensively. Prerequisites: MATH 554 with a grade of "C" or better or consent of instructor.

MATH 570 Advanced Calculus I
4 hrs.
Properties of real numbers, Cauchy sequences, series, limits, continuity, differentiation, Riemann integral, sequences and series of functions. Prerequisites: MATH 272 and 314. (MATH 330 is recommended.)

MATH 571 Advanced Calculus II
3 hrs.
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. Prerequisite: MATH 570 or approval of advisor.

MATH 572 Vector Calculus and Complex Variables
4 hrs.
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. Prerequisite: MATH 574.

MATH 574 Advanced Differential Equations
3 hrs.
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. Prerequisite: MATH 374.

MATH 580 Number Theory
3 hrs.
Diophantine equations, congruences, quadratic residues, and properties of number-theoretic functions. Prerequisite: MATH 330.

MATH 590 In-Service Professional Development in Mathematics
1-3 hrs.
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. Each offering of MATH 590 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: Permission of instructor.

MATH 595 Topics in Elementary/Middle School Mathematics
3 hrs.
This course addresses topics in mathematics content and pedagogy relative to teaching and learning of elementary/middle school mathematics. Course may be repeated for credit. Prerequisite: MATH 352 or consent of instructor.

MATH 599 Independent Study in Mathematics
1-6 hrs.
Advanced students with good scholastic records may elect to pursue independently the study of some topic having special interest for them. Topics are chosen and arrangements are made to suit the needs of each particular student. May be repeated for credit. Prerequisite: Approval of chairperson of department.

Open to Graduate Students Only MATH 602 Mathematical Modeling I
3 hrs.
This course considers the methodology of modeling a series of practical problems. The mathematical tool 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. Prerequisite: MATH 574 or consent of instructor.

MATH 605 Optimization
3 hrs.
This course will cover one or several topics from the area of optimization. The topics 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. Prerequisites: MATH 272 and consent of instructor.

MATH 607 Numerical Analysis II
3 hrs.
The analysis and use of numerical algorithms for the solution of ordinary and partial differential equations, and approximation theory. Prerequisite: MATH 507.

MATH 608 Linear Programming
3 hrs.
Linear inequalities; convex geometry; optimization in linear systems; zero-sum games; applications. Prerequisite: An introductory course in linear algebra.

MATH 609 Studies in Applied Math
3 hrs.
Advanced work organized around topics related to the field of study indicated at the time the course is scheduled. Students may take this course more than once. The courses 611 through 619 are primarily for teachers and ordinarily will not apply towards the Master of Arts in Mathematics.

MATH 611 Mathematical Applications
3 hrs.
An introduction to the philosophy of, machinery for, and methodology in applications of mathematics. Topics will be chosen from applied mathematics, linear algebra, numerical approximation, optimization and graphical linear programming, probability, and linear differential equations. Prerequisite: Consent of the advisor.

MATH 612 Data Analysis
3 hrs.
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. Prerequisite: Consent of advisor.

MATH 615 Intermediate Analysis
3 hrs.
This course will include the following topics: limits, continuity, differentiation, integration, applications. It will stress concepts rather than techniques. Prerequisite: Consent of advisor.

MATH 616 Survey of Algebra
3 hrs.
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. Prerequisite: Consent of advisor.

MATH 617 Discrete Dynamical Systems
3 hrs.
This course features a blend of theory and experimentation using computer software to study dynamical systems with a special emphasis on chaotic systems. Topics may include iteration and orbits, graphical analysis, periodic points, bifurcation theory, fractals, Julia sets, the Mandelbrot Set, and symbolic dynamics. Prerequisite: Consent of advisor.

MATH 619 Computer Methods in Secondary School Mathematics
3 hrs.
This course emphasizes the applications of computer technology to the teaching and learning of mathematics in grades 7-12. Particular attention is given to the role of technology in mathematical problem solving and concept development. Technology-oriented curriculum materials will be explored and developed. Prerequisite: Consent of advisor.

MATH 621 Algebraic Topology — Fundamental Group
3 hrs.
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. Prerequisite: MATH 522.

MATH 624 Algebraic Topology — Homology Theory
3 hrs.
Topics will include simplicial complexes, homology and cohomology theories, including singular homology theory. Prerequisite: MATH 522.

MATH 634 Algebraic Number Theory
3 hrs.
Number fields, rings of integers, ideals, units, factorization, congruences, quadratic residues, reciprocity laws, properties of number-theoretic functions, zeta functions. Prerequisite: MATH 611 or consent of instructor.
MATH 625 Differential Topology 3 hrs.
Topics may include: Differentiable manifolds and smooth maps, tangent bundles, immersions, embeddings, submanifolds, transversality, Sard's Theorem, intersection theory, and additional topics. Prerequisite: MATH 522.

MATH 626 Algebraic Topology—Homotopy Theory 3 hrs.
Topics may include: Homotopy groups, fibrations, the action of the fundamental group, Huebsch Theorem, Whitehead Theorem, Freudenthal Suspension Theorem, Eilenberg-Mac Lane Spaces, killing homotopy, and obstruction theory. Prerequisites: MATH 621 and MATH 624.

MATH 629 Studies in Topology 3-4 hrs.
Advanced work organized around topics related to the field of study indicated in the above title. Students may take this course more than once.

MATH 630 Abstract Algebra I 3 hrs.
A general study of groups, rings, and modules. A specific study of finite groups, polynomial rings, and Euclidean domains. Prerequisite: MATH 530.

MATH 631 Abstract Algebra II 3 hrs.
A continuation of 630. 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. Prerequisite: MATH 630.

MATH 633 Topics in Group Theory 3 hrs.
Advanced work organized around topics in the theory of groups. Possible topics include: Finite Groups, Groups and Geometries, Group Representations, Infinite Groups or Combinatorial Group Theory. Prerequisite: MATH 631.

MATH 637 Numerical Linear Algebra 3 hrs.
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. Prerequisites: MATH 510 or 530, and 507.

MATH 639 Studies in Algebra 3 hrs.
Advanced work organized around topics related to the field of study indicated in the above title. Students may take this course more than once.

MATH 640 Graph Theory I 4 hrs.
This course and MATH 641 cover the following topics: Fundamental concepts; eulerian graphs; adjacency and incidence matrices; trees; planar graphs; graph embeddings; connectivity; hamiltonian graphs; matching; factorization; graph colorings; graphs and hypergraphs; the Reconstruction Problem; spectra of graphs; graph and map colorings; extremal graph theory; Ramsey theory. Prerequisite: Approval of advisor.

MATH 641 Graph Theory II 4 hrs.
Continuation of MATH 640. Prerequisite: MATH 640.

MATH 644 Graphs, Groups, and Surfaces 3 hrs.
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. Prerequisite: Consent of instructor.

MATH 645 Studies in Combinatorics 3 hrs.
Advanced work organized around topics related to the field of study indicated in the above title. Students may take this course more than once. Prerequisite: Approval of instructor.

MATH 646 Studies in Geometry 3 hrs.
Advanced work organized around topics related to the field of study indicated in the above title. Students may take this course more than once.

The courses 651, 652, 653, and 654 are primarily for teachers and ordinarily will not apply towards the Master of Arts in Mathematics.

MATH 651 Studies in Teaching Elementary School Mathematics 3 hrs.
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. Prerequisite: Consent of advisor.

MATH 652 Studies in Teaching Middle School Mathematics 3 hrs.
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 middle school level. Explicit attention is given to the impact of technology on the teaching/learning process. Prerequisite: Consent of advisor.

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. Prerequisite: Consent of advisor.

MATH 654 Secondary School Mathematics Curriculum Studies 3 hrs.
Participants in this course examine curricular issues and trends in secondary school mathematics and analyze recent experimental and commercial curriculum materials. This course may be taken more than once with the approval of the student's advisor. Prerequisite: Consent of advisor.

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. Prerequisite: Completion of at least 21 graduate credit hours, including MATH 653 (or MATH 652) and MATH 664, or consent of advisor.

MATH 656 Teaching of College Mathematics 2 hrs.
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. Prerequisite: Consent of advisor.

MATH 657 Mathematics Curriculum Issues and Trends 3 hrs.
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. Prerequisite: Consent of advisor.

MATH 658 Psychology of Learning Mathematics 3 hrs.
This course focuses on theories of mathematical thinking and knowing and an examination of major research paradigms and research findings on mathematical learning in children and adults and their implications for instruction. Prerequisite: Consent of advisor.

MATH 659 Research in Mathematics Education 3 hrs.
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. Prerequisite: Consent of advisor.

MATH 670 Real Analysis I 3 hrs.
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. Prerequisites: MATH 522 and 571.

MATH 671 Real Analysis II 3 hrs.
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. Prerequisite: MATH 670.

MATH 676 Complex Analysis 3 hrs.
Topics include: Cauchy Theory, series expansion, power series, types of singularities, calculus of residues. Prerequisite: MATH 571.

MATH 678 Introduction to Functional Analysis 3 hrs.
Metric spaces; category; compactness; Banach spaces; Hahn-Banach theorem; completely continuous operators; Hilbert spaces; self-adjoint operators; elementary spectral theory. Prerequisite: MATH 671.

MATH 679 Studies in Analysis 3 hrs.
Advanced work organized around topics related to the field of study indicated in the above title. Students may take this course more than once.

MATH 688 Research Tools in the Mathematical Sciences 1-3 hrs.
This course consists of various computer applications and computer network activities that are commonly used in the mathematical community, including mathematical word processing, computer algebra systems, literature searches, 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. Prerequisite: Permission of the department chairperson.

MATH 689 Studies in Number Theory 3 hrs.
Advanced work organized around topics related to the field of study indicated in the above title. Students may take this course more than once.

MATH 690 Seminar in Applied Mathematics 1-3 hrs.
May be repeated for credit.
MATH 692 Seminar in Topology
1-3 hrs.
May be repeated for credit.
MATH 693 Seminar in Algebra
1-3 hrs.
May be repeated for credit.
MATH 694 Seminar in Graph Theory
1-3 hrs.
May be repeated for credit.
MATH 695 Seminar in Mathematics Education
1-4 hrs.
May be repeated for credit.
MATH 697 Seminar in Analysis
1-3 hrs.
May be repeated for credit.
MATH 699 Reading and Research
1-6 hrs.
May be repeated for credit.

Open to Graduate Students Only—Please refer to The Graduate College section for course descriptions.

MATH 712 Professional Field Experience
2-12 hrs.
MATH 725 Doctoral Research Seminar
2-6 hrs.
MATH 730 Doctoral Dissertation
15 hrs.
MATH 735 Graduate Research
2-10 hrs.

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Eve Salasbury
Jana Schuffman
Thomas Seiler
Larry Simon
Matthew Steel
Larry Syndergaard
Paul E. Szarmach
Elizabeth C. Tevoldale
Kevin J. Wanner

Master of Arts in Medieval Studies
Advisor:
Paul E. Szarmach,
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 either Option I (Thesis) or Option II (Non-Thesis), depending on their career plans, personal interests, and intellectual orientation. Either option provides a broad background in medieval history, languages, literatures, paleography, philosophy, religion, the arts, and in research methodology.

Western Michigan University offers an academic environment appropriate for the study of the Middle Ages. The University library houses extensive holdings of books and periodicals in all areas of Medieval Studies, and the Institute of Cistercian Studies Library contains unique collections of early manuscripts and rare books in the field of monastic and Renaissance history and thought. Western Michigan University is the host institution for the annual International Congress on Medieval Studies, and Medieval Institute Publications publishes various series of books and several 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, two letters of recommendation, and a statement of intent.

Program Requirements

OPTION I, THESIS, 37 hrs.
1. A total of at least 31 hours of course work, including 13 hours of required core courses (ENGL 530 Medieval Literature; HIST 635 Research Techniques in Medieval History; LAT 560 Medieval Latin (grade of B or better required); REL 500 Christian Theology to 1500) and 18 hours of electives, the latter to be chosen from the list of approved courses in the Departments of Art, Comparative Religion, English, Foreign Languages, History, Music, Philosophy, and Spanish.
2. Demonstrated reading proficiency in Latin and in either French, German, Italian, or Spanish.
3. Preparation of an acceptable Master's Thesis (6 hours) under the direction of a thesis advisory committee.

OPTION II, NON-THESIS, 37 hrs.
1. A total of at least 37 hours of course work, including 13 hours of required core courses (ENGL 530 Medieval Literature; HIST 635 Research Techniques in Medieval History; LAT 560 Medieval Latin (grade of B or better required); REL 500 Christian Theology to 1500) and 24 hours of electives, the latter to be chosen from the list of approved courses in the Departments of Art, Comparative Religion, English, Foreign Languages, History, Music, Philosophy, and Spanish.
2. Demonstrated reading proficiency in Latin. (Note: Option II has no modern language requirement.)
3. Option II has no thesis requirement.

MEDIEVAL STUDIES COURSES

MDVL 597 Directed Study
3 hrs.

An interdisciplinary course organized around selected topics in medieval and Renaissance studies. The focus may be in a specific period (The Twelfth Century), a religious movement (Monasticism), a political structure (Venice—A Renaissance City-State), or the social fabric (Medieval People: Image and Reality). In each case faculty from several departments will approach the semester's topic from the perspective and with the methodological tools of their respective disciplines, such as art, history, literature, music, philosophy, political science, and religion. The overall aim of the course is to demonstrate to students why one needs to acquire a variety of disciplines to understand a single complex problem, and how to put traditional building blocks together in new ways. The course may be repeated for credit with a different topic.

MDVL 599 Directed Study
1-3 hrs.
Research on a selected topic in the field of Medieval Studies directed and supervised by a faculty member. Registration requires at least junior standing and approval by the Director of the Medieval Institute.

MEDIEVAL STUDIES COURSES

MEDVL 600 Advanced Seminar in Medieval Studies
2-4 hrs.
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.
PHILOSOPHY

Dr. Brian Wilson, Chair
Main Office: 320 Moore Hall
Telephone: 387-4389
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Fritz Ahof
Marc Aspector-Kelly
Kent Badger
Miriam Byrd
John Dilworth
Arthur Falk
Timothy McGrew
Janet Pisaneschi
Michael Pritchard
Scriven, Michael
Quentin Smith

Master of Arts in Philosophy

Advisors: Timothy McGrew, Director of Graduate Studies
Room 3010, Moore Hall

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:
1. to have completed a minimum of twelve semester hours of undergraduate work in philosophy, including:
2. a course in the history of modern philosophy, and
3. a course in symbolic logic, and
4. to have achieved a 3.0 or above overall grade point average in the applicant's undergraduate philosophy courses.

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 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 minimum of 24 credit hours of 500- or 600-level courses in the Department of Philosophy, and
4. a minimum of 32 graduate credit hours. (With the authorization of the Department Graduate Advisor, students may count up to 8 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 minimum of 24 credit hours of 500- or 600-level courses in the Department of Philosophy.
4. a minimum of 32 graduate credit hours. (With the authorization of the Department Graduate Advisor, students may count up to 8 credit hours of courses from other departments), and
5. 6 credit hours of PHIL 700. 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 633 Metaphysics. Students with a Concentration in Epistemology and Philosophy of Science must take PHIL 632 Theory of Knowledge. Students with a Concentration in Theoretical and Practical Ethics must take PHIL 631 Ethical Theory.

Courses that may, given the proviso below, count for credit in Metaphysics and Philosophy of Mind are PHIL 507, 512, 520, 540, 560, 570, 600, 610, 620, 633, and 650.

Courses that may, given the proviso below, count for credit in Epistemology and Philosophy of Science are PHIL 507, 512, 520, 525, 555, 560, 570, 600, 610, 620, 632, and 650.

Courses that may, given the proviso below, count for credit in Theoretical and Practical Ethics are PHIL 507, 512, 534, 544, 560, 570, 600, 610, and 631.

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 598, 700, and 710.

Philosophy Courses (PHIL)

Open to Upperclass and Graduate Students Undergraduates with junior or senior status and at least 12 hours of course work in philosophy may enroll in 500-level courses. Specific prerequisites may be added to individual courses.

PHIL 507 The Continental Tradition in Philosophy

2-4 hrs.

An examination of the Continental tradition in philosophy. Topics may vary from term to term. Examples include: phenomenology, existentialism, post-modernism, structuralism, deconstruction, critical theory, and hermeneutics.

Prerequisites: 12 credit hours in Philosophy, including PHIL 301. May be repeated for credit, with advisor's approval, when topics vary.

PHIL 512 Aesthetics

3 hrs.

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. Prerequisite: 12 credit hours in philosophy.

PHIL 520 Philosophical Applications of Symbolic Logic

3 hrs.

This course is designed to expose graduate students to the range of philosophical applications of modern symbolic logic. Starting with the sentential and predicate calculus, 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 the controversy surrounding quantified modal logic. Prerequisites: 12 hours of philosophy, including either PHIL 225 or PHIL 320.
PHIL 525 Decision Theory

4 hrs.
Can there be a formal theory of what it is to be rational in one's beliefs and actions? This course is an introduction to decision theory, which claims to be a theory of rationality. Attention will be given to both its mathematical development and the issues it raises in the philosophy of science, the theory of knowledge, and action theory. A working knowledge of high school algebra is assumed.
Prerequisites: PHIL 220, 225 or 320; and two other courses in philosophy, mathematics (above the level of MATH 110), or computer science (above the level of CS 105).

PHIL 534 Moral and Philosophical Foundations of Health Care

3 hrs.
In this course philosophical reflection and biological science are combined in a critical examination of the nature and purpose of the health sciences. Topics to be considered include: the aims of the health sciences, the interplay of fact and value in health care, competing images of human kind embodied in health science, patient autonomy, dignity and medical paternalism.
Prerequisite: 12 credit hours in philosophy and/or biological sciences or experience in a health professional field.

PHIL 540 Philosophy of Mind

2-4 hrs.
A study of the philosophic problems surrounding our understanding of the nature of mind, mental states, and consciousness, and their relationship to material 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. May be repeated for credit, with advisor's approval, when topics vary.
Prerequisite: 12 credit hours in Philosophy, including PHIL 301.

PHIL 544 Practical Ethics

3 hrs.
This course will examine the relationships between ethical theory and practice, especially in the area of professional life. We will consider questions of conscience, and the role of law, government, society, and community. Research will be used to highlight some of these issues. May be repeated for credit, with advisor's approval, when topics vary.
Prerequisite: 12 credit hours in Philosophy.

PHIL 555 Advanced Philosophy of Science

2-4 hrs.
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.
Prerequisite: 12 credit hours in Philosophy. May be repeated for credit, with advisor's approval, when topics vary.

PHIL 560 Philosophy at Pre-College Levels

2-4 hrs.
A content-oriented course that explores topics, reading materials, and ways of approaching them in the teaching of philosophy at the pre-college level. A special emphasis is put on critical and creative thinking.

PHIL 570 Philosophical Topics

1-4 hrs.
An examination of special philosophic topics. Topics to be listed in the Schedule of Course Offerings. Prerequisite: Specific course prerequisite may be stipulated for specific topics and substitutions for philosophy may be allowed. Usually at least one of PHIL 300 or PHIL 320 will be required. May be repeated for credit, with advisor's approval, when topics vary. May be offered in an accelerated format.

PHIL 598 Readings in Philosophy

1-4 hrs.
Research on some selected period or topic under supervision of a member of the Philosophy faculty.

Open to Graduate Students Only

PHIL 600 Colloquium

2-4 hrs.
A seminar in which one or more faculty involve the students in their current research. Topics may vary from term to term.

PHIL 610 Seminar in the History of Philosophy

2-4 hrs.
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.

PHIL 620 Philosophy of Language and Logic

2-4 hrs.
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 role of proper names, general terms, and pronouns, and the truth conditions of sentences, as well as questions concerning the philosophy of model logic, tense logic, free logic, deontic logic, epistemic logic, paraconsistent logic, first and second order logics, and probability calculus. May be repeated, with advisor's approval, when topics vary.

PHIL 631 Ethical Theory

2-4 hrs.
A study of theories of Ethics and Morality. Topics may vary from semester to semester. May be repeated for credit, with advisor's approval, when topics vary.

PHIL 632 Theory of Knowledge

2-4 hrs.
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.

PHIL 633 Metaphysics

2-4 hrs.
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.

PHIL 650 Philosophy of Religion

2-4 hrs.
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. May be repeated, with advisor's approval, when topics vary.

Open to Graduate Students Only—Please refer to The Graduate College section for course descriptions.

PHIL 700 Master's Thesis

1-6 hrs.

PHIL 710 Independent Research

2-6 hrs.
3. Additional hours from Physics, Computer Science, Electrical Engineering, or other departments to be chosen with the consent of the graduate advisor.

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 topic of the thesis may be based on one of the research areas noted above, or it may be based on some other area of physics chosen by the student and approved by the thesis committee. The committee may require an oral defense of the thesis before approving it for submission to the Graduate College.

Graduate students are required to attend the Physics Colloquium, which constitutes a program for graduate students in Physics faculty, presenters by the graduate students of the WWU Physics faculty, and visitors from other institutions on topics related to their research specialties. Graduate students are also expected to attend the Physics Public Lectures, a series of talks on topics of general interest in physics and related fields.

Doctor of Philosophy in Physics

Advisor: Dean Halderson, Room 1135, 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 work in industry. The program is an integral part of the major and may be performed in either experimental or theoretical physics. The area of specialization may be astrophysics, atomic, nuclear, or condensed matter physics, or nuclear physics. Special facilities available for research include a 6-MW 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 an equivalent degree from an academic institution. Students must meet the minimum requirements for admission to the University of Washington. Prospective students are required to take the Graduate Record Examination General Test and the qual for this examination will be used as one measure in the determination of admission and financial support. It is also recommended that students take the Physics Subject Test part of the Graduate Record Examination. 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 comprised 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 (28 credit hours)
2. Physics 730 Doctoral Dissertation (15 credit hours)
3. Additional courses chosen from:
   a. Research courses (PHYS 690, 691, or 692)

b. Courses mutually agreed upon by the student and the graduate advisor or the research advisor.

4. An overall credit average of 3.25 in all graduate work.

Basic Core Courses:

- PHYS 610 Graduate Seminar
- PHYS 615 Mathematical Physics
- PHYS 622 Quantum Mechanics I
- PHYS 623 Quantum Mechanics II
- PHYS 626 Advanced Atomic Physics
- PHYS 630 Classical Mechanics
- PHYS 662 Electricity and Magnetism I
- PHYS 663 Electricity and Magnetism II

The research tool requirements must be met by demonstrating competency in two of the following:

1. Programming at the level of MATH 507 (e.g., the acquisition, analysis, modeling, or simulation of data)
2. A non-native foreign language at the level of FREN 401, GER 401, etc.
3. Differential equations at the level of MATH 574
4. Use of physics research equipment at a level equivalent to PHYS 645, PHYS 446

The student is strongly recommended for those students who have not had an advanced laboratory course.

The courses PHYS 615, 622, 630, and 662 are normally taken during the student's first year.

After completing the basic courses the student is required to take the Qualifying Examination. The Qualifying Examination consists of four testing sessions and will cover the contents in the four courses. This examination is a written examination; however, if deemed necessary for a more precise judgment, the student may be required to take an oral examination. The examination must be passed before any hours of PHYS 730 Doctoral Dissertation or PHYS 735 Graduate Research are taken. A student is allowed to take the Qualifying Examination only twice. It is recommended that the Qualifying Examination be taken at the end of the first year. This examination must be taken for the first time no later than the beginning of the student's third year and must be passed before the beginning of the student's fourth year.

The grade awarded on the Qualifying Examination is based not only on the student's performance on the written examination, but also on his or her performance in the courses. The grade represents the faculty's judgment, based on all available evidence, on whether or not the student should become a candidate for the doctoral degree.

After successful completion of the Qualifying Examination, the student will, upon the consent of 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. The student's research advisor and three additional graduate faculty members, at least one of whom is from outside the Physics Department.

As soon as possible after completion of all the core courses, the student must take the Comprehensive Examination. The Doctoral Program of Study form must be approved before this examination is taken. This examination consists of questions on the doctoral dissertation proposal. After the dissertation proposal is reviewed, the student will be given a grade of pass or fail. If a student fails the Comprehensive Examination, it may be repeated only once. At the completion of the dissertation, the student will take a Final Oral Examination. During this examination, the dissertation committee will ask questions concerning the dissertation and concerning the student's research area. Members of the committee should be provided with a copy of the dissertation at least one month in advance of the examination. The dissertation and the student's knowledge of

Physics Courses (PHYS)

Open to Undergraduate and Graduate Students

The department's 500-level courses are offered only to advanced physics majors who have successfully completed all prerequisite studies.

PHYS 562 Atomic and Molecular Physics 3 hrs.

This course consists of some applications of quantum mechanics. Topics include the helium atom, multielectron atoms, the Hartree-Fock method, and Stark effects, stimulated emission, transition rates, selection rules, the diatomic molecule, and molecular physics. Prerequisite: PHYS 460 or consent of instructor.

PHYS 563 Solid State Physics 3 hrs.

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. Prerequisite: PHYS 460 or consent of instructor.

PHYS 564 Nuclear and Particle Physics 3 hrs.

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. Prerequisite: PHYS 460 or consent of instructor.

PHYS 598 Selected Topics 1-4 hrs.

This course offers an opportunity for advanced students with good scholastic records in physics to pursue independently the study of some subject of interest to them. Prerequisite: Consent of instructor.

Open to Graduate Students Only

PHYS 610 Research Seminar 1 hr.

This is a required course for the first-year graduate students and will be offered every 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. This course will be graded on a Credit/No Credit basis.

PHYS 615 Mathematical Physics 3 hrs.

This course provides the background needed for the application of mathematics to physical problems encountered in graduate physics courses. Relevant topics include complex variables, and functional analysis are included.

PHYS 622 Quantum Mechanics I 3 hrs.

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.

PHYS 623 Quantum Mechanics II 3 hrs.

This course is a continuation of 622. 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. Prerequisite: PHYS 622.
PHYS 624 Statistical Mechanics
3 hrs.
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.

PHYS 630 Classical Mechanics
4 hrs.
Lagrangian'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.

PHYS 650 Relativistic Quantum Mechanics
3 hrs.
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. Prerequisite: PHYS 623.

PHYS 662 Electricity and Magnetism I
4 hrs.
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.

PHYS 663 Electricity and Magnetism II
4 hrs.
This course deals with the scattering of electromagnetic waves, plasma physics, special relativity, relativistic dynamics, collisions between charged particles, bremsstrahlung, and multipole fields. Prerequisite: PHYS 662.

PHYS 670 Atomic Physics
3 hrs.
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. Prerequisite: PHYS 623 or consent of instructor.

PHYS 671 Nuclear Physics
3 hrs.
This course covers nuclear models, nuclear matter, electromagnetic properties, reactions, and scattering. Prerequisite: PHYS 623 or consent of instructor.

PHYS 672 Condensed Matter Physics
3 hrs.
This course includes both static and dynamic properties of condensed matter with particular emphasis on transport properties, optical properties, magnetism, and superconductivity. Prerequisites: PHYS 622 and 624 or consent of instructor.

PHYS 680 Research in Atomic Physics
1-6 hrs.
This course is available for students performing doctoral research in atomic physics. A student must have a research advisor to enroll in PHYS 680. This course may be taken more than once. Prerequisite: Consent of research advisor.

PHYS 682 Research in Condensed Matter Physics
1-6 hrs.
This course is available for students performing doctoral research in condensed matter physics. A student must have a research advisor to enroll in PHYS 682. This course may be taken more than once. Prerequisite: Consent of research advisor.

PHYS 700 Master's Thesis
6 hrs.
Open to Graduate Students Only. Please refer to The Graduate College section for course descriptions.

PHYS 710 Independent Research
2-6 hrs.
PHYS 730 Doctoral Dissertation
15 hrs.
PHYS 735 Graduate Research
2-10 hrs.

POLITICAL SCIENCE

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Alan C. Isaak
Peter Kobrak
Ashlyn Kuersten
Priscilla Lambert
Peter G. Reifstrom
Sybil D. Rhodes
Jachinda Swanson
Lawrence Ziring

Master of Arts in Political Science

Director of Graduate Studies: Jim Butterfield, Room 3356, 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 in the public service and quasipublic 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 twenty-four 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 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. Either PSCI 601, Foundations of American Politics I or PSCI 602, Foundations of American Politics II: Representation and Participation; either PSCI 641, Comparative Politics I: Theory of Comparative Politics or PSCI 642, Comparative Politics II: Institutional and Contextual Issues or PSCI 645, National Political Systems and International Politics; either PSCI 662, Political Philosophy I or PSCI 663, Political Philosophy II; PSCI 664, The Nature of Political Inquiry and Analysis; PSCI 694, Teaching Politi-
A grade point average of 3.0 in all undergraduate work is normally a requirement for admission to the MDA program; however, where grading schemes are concerned, the 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 MDA program, a copy of any other supporting data that can assist the Department's Admissions Committee, which screens and judges all applicants.

If students must demonstrate English proficiency (i.e., the ability to speak, read, and write in the English language) before entering the MDA 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 winter semester; and by February 15 for the spring semester.

Program Requirements

The Master of Development Administration is a professional degree program that requires forty-two semester hours of graduate courses. Up to six hours may be waived for those with extensive administrative experience. To earn the MDA 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 professional background: PSCI 330, Introduction to Public Administration; and ECON 201 or 202, Principles of Economics, or other courses as determined by the MDA Director.
2. Required Core Courses. Six courses (18 hours): PSCI 532, Administration in Developing Countries; PSCI 633, Political Environment of Public Administration; PSCI 636, Seminar: Development Administration; PSCI 638, Seminar: Implementing Development Policy; PADM 627, Human Resources Administration; and PADM 606, Organization Theory and Behavior.
4. International and Comparative Studies. One course (3 hours): PSCI 553, United Nations; PSCI 555, International Law; PSCI 645, National Political Systems and International Politics; PSCI 647, Comparative Constitutionalism; or PSCI 650, Third World Problems.
5. Concentrations. Three courses within one of the five concentrations (9 hours). Most students take the Standard Concentration. Upon admission, the student may choose a mix of courses appropriate to the needs of the student may be selected with the approval of the MDA Director.
   a. Leadership—the Standard Concentration: PSCI 644, Comparative Strategies of Development; PSCI 649, Sustainable Rural Development; PADM 614, Managing Community Growth and Development; PADM 504, Administrative Law and Governmental Regulations; PADM 636, Exercise of Power in Organizations; PADM 599, Reinventing Government; COM 673, Conflict Management; COM 693, Power and Leadership in Organizational Communication; or EDLD 602, Educational Leadership.
   c. Health and Human Services: PADM 651, Health Services Environment; PADM 655, Administration of Human Services; PADM 678, Program Evaluation; PADM 658, Seminar: Current Issues in Health Service Management and Delivery; HHS 661, Problem Solving in Human Service Organizations; SWRK 643, Leadership and Management in Human Services.
   e. Public Policy Analysis: PSCI 605, Comparative Public Policy; GEGG 601, Philosophy of Political Inquiry and Analysis; PSCI 691, Political Analysis I; PSCI 692, Political Analysis II; PADM 688, Program Planning and Proposal Writing; ECON 588/688 Economic Development; and ECON 680, Applied Economics for Management.
6. Approved Elective (3 hours): With the approval of the MDA Director choose one course from the above.

PEACE CORPS PROGRAM OPTION

The MDA Peace Corps Option is designed for students who wish to earn the MDA degree and to carry out two years of service as Peace Corps Volunteers. This option is only available to U.S. citizens as Peace Corps only accepts U.S. nationals. Prospective students should apply for entrance into Peace Corps and into the MDA Program concurrently. Rather than the forty-two credit hours required for a standard MDA, the Peace Corps Option requires thirty-six credit hours plus completion of Peace Corps service. Of these thirty-six credit hours, thirty are earned at Western Michigan University and six credit hours are earned for a field paper researched and written during Peace Corps service. The thirty credit hours on campus are normally earned in a rigorous one month course of study from September through June (four three-hour courses in the fall semester, four in the winter semester, and two in the spring session).

Admission requirements

The admission requirements for the Peace Corps Option are the same as those for the Standard Program Option listed above. Applicants, however, should note on the MDA application that they want the "Peace Corps Option." On the application to Peace Corps, applicants should note that they are also applying to the Master's International Program (MP) in Development Administration at Western Michigan University.

Program requirements

1. Prerequisites—same as for Standard MDA Program Option.
2. Required Core Courses (12 hrs.): PSCI 532 Administration in Developing Countries; PSCI 633 Political Environment of Public Administration; PSCI 636 Seminar: Development Administration; PADM 627 Human Resources Administration.
3. Tools or Skills (3 hrs.): PADM 612 Principles of Public Budgeting.
4. International and Comparative Studies (3 hrs.): One of the following—PSCI 553, Understanding Political Systems I; PSCI 665, International Law; PSCI 645 National Political Systems and International Politics; PSCI 647 Comparative Constitutionalism; or PSCI 650 Third World Development.
5. Concentrations (9 hrs.): Three courses (9 hrs.) in an area of personal concentration selected with the approval of the MDA Director.
6. Approved elective (3 hrs.): One course (3 hrs.) selected with the approval of the MDA Director.

Doctor of Philosophy in Political Science

Director of Graduate Studies: Jim Butterfield, Room 3356, Friedmann Hall

The Doctor of Philosophy in Political Science is designed to prepare students for careers in teaching, policy analysis, and applied as well as substantive research. Students are expected to specialize in one of three research areas: citizen politics, public policy and policy processes; or public policy and policy analysis.

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 twenty-four 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 completed at least thirty hours in the social sciences or other relevant fields and 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 for three recommendations, sent (using WMU Graduate Reference Forms) and a brief essay concerning their academic and professional objectives. All application materials for admission should be submitted by the following dates: July 1 for Fall Semester, November 1 for Winter Semester, March 1 for Spring Session, and May 1 for Summer Session.

Program Requirements

Students should consult 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 50 hours in the program and passing the preliminary exam, students will be eligible for a Master of Arts 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 200, Quantitative Methods for Political Scientists.
2. Required core courses. Each student is required to take the following thirteen core courses (33 hours) or their equivalent: A.) Foundations: PSCI 601, Foundations of American Politics; PSCI 602, Foundations of American Politics II; PSCI 641, Comparative Politics I; Theories of Comparative Politics; PSCI 642, Comparative Politics II; Institutional and Contextual Issues; PSCI 662, Political Philosopgy I; PSCI 663, Political Philosophy II; B.) Scope and Methods: PSCI 664, The Nature of Political Inquiry and Analysis; PSCI 691, Political Analysis I; PSCI 692, Political Analysis II; C.) Professional Skills: PSCI 694, Teaching Political Science; PSCI 695, Teaching Excellence; PSCI 696, Research and Professional Skills; and PSCI 697, Proposal Writing.
3. Annual Reviews. In order to continue in the program, students must receive a positive annual review. In addition, first year students must take and pass a preliminary examination based upon one of three two-course sequences: Political Theory and Philosophy (PSCI 662 and PSCI 665) or American Politics (PSCI 601 and PSCI 602) or Comparative Politics (PSCI 641 and PSCI 642) in order to continue in the program.
4. Research area. After passing the preliminary examination and completing the basic requirements, students will select their research area (either citizen politics, political development, democratization and sustainability; or public policy and policy processes). With the approval of the Graduate Director, they will: a.) take nine hours of courses from an approved list, and b.) select 27 additional credit hours that relate to their research area and dissertation topic from approved cognates (9 hours required), research tools/methods, and electives.
5. Research tools/methods. All Ph.D. students must demonstrate proficiency in at least two research areas, and methodology appropriate to their field of specialization, as determined in consultation with their advisor, subfield faculty, and the Graduate Director. To continue in the program, students must successfully complete PSCI 664, 691, and 692 or their equivalents, and are urged to do so as early in their careers as possible. In addition, all students must obtain evidence 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; political theory and philosophy.
7. Dissertation. As the capstone to the Ph.D. degree program, the dissertation is awarded 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.

Political Science Courses (PSCI)

Open to Upperclass and Graduate Students

Undergraduates who have attained at least junior status and who have completed PSCI 200, PSCI 240 or 241, and two additional courses in political science, or who have obtained prior approval of the department chair, may enroll in 500-level courses.

PSCI 506 Problems of American Government 3-4 hrs.
A critical examination of major problems facing national, state, or local government with emphasis upon contemporary efforts and studies designed to understand or solve such problems. May be repeated for credit when topics vary.

PSCI 526 Administrative Law and Public Regulation 3 hrs.
A study of the requirements for, and the limits on, the exercise of administrative powers by public officials charged with regulating significant aspects of the social and economic life of the nation. Special attention is paid to governmental regulation and the means of safeguarding individual rights through fair administrative procedures and judicial control over administrative determination. Prerequisites: PSCI 200 or a course in Economics.

PSCI 530 Problems in Public Administration 3-4 hrs.
Consideration of issues and problems of current interest in the field of public administration. The course is intended to provide advanced work for undergraduates and to serve as an introduction to the field for graduate students without previous training in public administration.

PSCI 531 Administration in Local and Regional Governments 3 hrs.
The administrative organization, structure, procedures, and forms of local units of government are analyzed.

PSCI 532 Administration in Developing Countries 3 hrs.
The course compares public administration systems in a development context. It analyzes the role of the administrator in developing countries, notably the administrator's varied responsibilities as a career public official, and as an agent of change. The character of the development administrator as both a generalist and specialist is explored.

PSCI 534 Administrative Theory 3 hrs.
A study of descriptive theories of organizational and administrative behavior relevant to government administrative agencies. Theories of complex formal organizations, decisional theories, and systems theories will be analyzed.

PSCI 535 The Politics of Governmental Budgeting and Finance 3 hrs.
A survey of the political process of governmental budgeting and finance. Budget systems including program planning and budgeting systems are studied. The politics of taxation and other governmental revenues including intergovernmental transfers are studied for their impact on public policy choices.

PSCI 544 Political Change in Russia 3 hrs.
An examination of processes of political change in Russia in areas of policy and structure. Past reform efforts in the former Soviet Union and Russia are studied, followed by an extensive inquiry into present system change. The course relates the Soviet and Russian experience to the literature on political change and theories of comparative politics.

PSCI 549 Problems of Foreign Political Systems 3-4 hrs.
Course will consider selected problems of the governments and political systems of Western and Eastern Europe, Asia, Africa, and Latin America. The specific problems, topics, and countries to be studied will be announced each semester. May be repeated for credit when topics vary.

PSCI 552 Studies in International Relations 3 hrs.
Examines selected topics within the field of international relations. Topics will vary and will be announced each semester. May be repeated for credit when topics vary.

PSCI 553 United Nations 3 hrs.
A study of the United Nations in action. Attention is focused on significant political problems.
PSCI 555 International Law
3 hrs.

The course consists of two parts. First, a consideration of the theory, sources, development, and general principles of international law, and the relationship of law to the dynamics of international politics. Decisions of international and municipal tribunals and the practices of states will be used to demonstrate the basic rights and obligations of states in time of peace and war. Such topics as recognition of states, diplomatic practice, treaties, and neutrality will also be discussed.

PSCI 562 Modern Democratic Theory
3 hrs.
The course consists of two parts. First, a consideration of the theory, sources, development, and general principles of international law, and the relationship of law to the dynamics of international politics. Decisions of international and municipal tribunals and the practices of states will be used to demonstrate the basic rights and obligations of states in time of peace and war. Such topics as recognition of states, diplomatic practice, treaties, and neutrality will also be discussed.

PSCI 563 Theories of Revolution
4 hrs.
Examines significant classical and contemporary theories of revolution with reference to both their analytical and normative implications.

PSCI 598 Studies in Political Science
1-4 hrs.
An opportunity for advanced students with good scholastic records to pursue independently the study of some subject of interest to them. Subjects are chosen and arrangements made to suit the needs of individual students. Prerequisite: Approval of department chairperson and instructor.

Open to Graduate Students Only

PSCI 600 Seminar in American Politics
3 hrs.
Research and study in selected topics in American politics. May be repeated for credit when topics vary.

PSCI 601 Foundations of American Politics I: Institutions and Policy
3 hrs.
A systematic examination of the constitutional foundations of American government, the primary institutions of government at the national level - Congress, the presidency, the courts, and the bureaucracy - and the policy-making processes from an institutional perspective.

PSCI 602 Foundations of American Politics II: Representation and Participation
3 hrs.
The course reviews analyses of the representation of citizen interests in the policy-making process through political participation including elections, voting behavior, political parties and activism, interest groups, and public opinion.

PSCI 603 Seminar in American Political Behavior
3 hrs.
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 their concepts such as partisanship, ideology, issue voting, belief systems, political sophistication, affective reactions to politics, and the dynamics of citizen participation.

PSCI 604 American National Politics and Public Policy
3 hrs.
This course provides a graduate-level introduction to American public policy. The focus of this course is on the stages or elements of the policy process as a means of analysis. While this approach has traditionally included policy formation, implementation and evaluation, it is expanded to include policy studies and other important theoretical aspects of public policy. Consequently, the course will attempt to provide a synthesis between classical and behavioral political science.

PSCI 605 Comparative Public Policy
3 hrs.
This course focuses on the development of policy over time and across states 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.

PSCI 606 Political Economy
3 hrs.
An examination of two models, the free market mechanism and national industrial policy, that explains how the political-economic system functions in the U.S. and in the American states. The relationship between private enterprise and democracy will be assessed in response to global economic challenges. The American political economy is compared with alternative approaches in the world.

PSCI 607 Resources, Environment and Technology
3 hrs.
The seminar examines how resources, environmental, and technological processes are generating increasingly important political and economic conflicts as well as how policy made in these areas can either exacerbate or ameliorate such conflicts. Examples (e.g., fossil fuel dependency, climate change, new biotechnologies or weapons) will be used to illustrate the dilemmas they create for policy makers at all levels.

PSCI 630 Seminar: Public Administration
3 hrs.
Study of selected topics in public administration. May be repeated for credit when topics vary.

PSCI 631 The Foundations of Public Administration
3 hrs.
This course is designed to introduce and review major developments in the field of public administration, to acquaint the student with the constitutional and legal basis of administration in public agencies, and to review the ethical and legal significance of accountability in the public service.

PSCI 632 Public Budgeting in Developing Countries
3 hrs.
Consideration of the theoretical and practical aspects of governmental budgeting and financial management in developing countries. Emphasis is placed on developing planning, management of international aid for development projects, budgeting for state-owned enterprises, and basic tools for budget analysis.

PSCI 633 The Political Environment of Public Administration
3 hrs.
This course examines the interaction between the administrative agency and the social, economic, and political forces which constitute its external environment. Emphasizes the sources of bureaucratic power, the nature of administrative and political elites, and the strategies which agencies pursue in seeking to survive and expand their programs. Explores the impact of the political system on administrative decision-making and agency responsiveness.

PSCI 636 Seminar: Development Administration
3 hrs.
The seminar is devoted to research related to administration in developing areas. Topics may range from general subjects dealing with various aspects of bureaucracy in one or more countries to narrow problems at the level of a ministry or sub-ministry. The research experience and final papers will be shared with the other students in the seminar.

PSCI 637 Organization Development
3 hrs.
Organization Development (OD) is a planned, organization-wide attempt directed from the top to increase organizational effectiveness by encouraging certain behavior. Building on behavioral and humanistic theories of organizations, OD is concerned with human relations in the work group. The strategy is to make the organization work more effectively through having individuals become aware of what motivates others and through reduced tensions in the workplace.

PSCI 638 Seminar: Implementing Development Policy
3 hrs.
As a capstone to the MDA program, this research seminar calls upon the student to examine the problems encountered in the implementation of a particular development policy. Attention will be given to socio-economic, political and cultural impediments, and the strategies that are judged appropriate in circumstances where resistance to change is significant. Permission of the MDA Director required to enroll.

PSCI 639 Peace Corps Field Paper
6 hrs.
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.

PSCI 640 Seminar in Comparative Politics
3 hrs.
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.

PSCI 641 Comparative Politics I: Theories of Comparative Politics
3 hrs.
An overview course for master's and Ph.D. students on the major theoretical and methodological approaches to the study of comparative politics and political development. Major topics may include major regime types, state-society relations, political economy, political development and change (including revolutions and reform), the state of the field, and other key topics in the literature.

PSCI 642 Comparative Politics II: Institutional and Contextual Issues
3 hrs.
A study of the state and its institutions and the various issues at the subnational and international level that impinge on the power of the state. Issues may include nationalism, regionalism, and social movements, international political economy, international regimes and organizations, resource availability and usage, and international security.

PSCI 643 Relations Between Subnational, National, and International Systems
3 hrs.
The course explores interdependencies between subnational, national, and international systems. Special consideration is given to the influences and demands of the international system on national and subnational affairs in both the rhythmically developed and less developed areas of the world.
PSCI 644 Seminar: Comparative Strategies of Development
3 hrs.
The course focuses on the developing areas and uses an interdisciplinary approach. The strategies of development are examined in selected countries or typically on a cross-national basis.

PSCI 645 National Political Systems and International Politics
3 hrs.
The course explores the interrelationships between national and international politics. Efforts are made to describe and explain variances and discontinuities between national policy and a country's international posture. Subjects to be explored focus on political culture, mechanisms for addressing popular demands, political movements, ideological/philosophical conflict and external commitment.

PSCI 647 Comparative Constitutionalism
3 hrs.
Constitutions are fundamental charters of government which define the extent and manner in which sovereign power is exercised. This course examines the constitutional foundations of representative political systems and evaluates the impact of basic constitutional provisions on contemporary governance practices.

PSCI 649 Sustainable Rural Development
3 hrs.
A seminar concerning changing perceptions of rural development in the academic world and in national and international development agencies. The links between rural development, agriculture, food security, health, population pressures, and resource availability are analyzed. The challenges of designing and/or reforming administrative structures to pursue effective rural development are reviewed.

PSCI 650 Third World Seminar
3 hrs.
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.

PSCI 660 Seminar: Political Thought
3 hrs.
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.

PSCI 661 Principles of Politics
3 hrs.
A systematic introduction to the concepts which are crucial to an understanding of the political institutions and processes. The course is directed to the needs of the beginning graduate student.

PSCI 662 Political Philosophy I
3 hrs.
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.

PSCI 663 Political Philosophy II
3 hrs.
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.

PSCI 664 The Nature of Political Inquiry and Analysis
3 hrs.
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.

PSCI 690 Seminar in Advanced Political Analysis
3 hrs.
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. Prerequisite: Permission of the instructor.

PSCI 691 Political Analysis I
3 hrs.
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.

PSCI 692 Political Analysis II
3 hrs.
The application of statistical and mathematical models to the analysis of political data with emphasis on methodological assumptions and problems: correlation; analysis of variance; and simple and multiple regression. Prerequisite: PSCI 691 or equivalent.

PSCI 694 Teaching Political Science
1 hr.
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.

PSCI 695 Teaching Excellence
2 hrs.
This course introduces advanced graduate students and teaching assistants to ideas, information and methods that are innovative and encourage 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.

PSCI 696 Research and Professional Skills
2 hrs.
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.

PSCI 697 Proposal Workshop
1 hr.
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.
PSYCHOLOGY

Dr. R. Wayne Fuqua, Chair
Main Office: 3740 Wood Hall
Telephone: 387-4470
FAX: 387-4550

Galen J. Alessi
John Austin
Lisa E. Baker
James E. Carr
Alyce M. Dickinson
Eric Fox
R. Wayne Fuqua
Scott Gaynor
Bradley E. Hulterta
Linda A. LeBlanc
Richard W. Melott
Jack L. Michael
Amy E. Naugle
Alan D. Poling
C. Richard Spates
Lester W. Wright, Jr.

Graduate Training Committee Chairperson:
John Austin
3740 Wood Hall
Linda Rowen, Program Secretary
3700 Wood Hall

The Department of Psychology has a strong scientific and behavior analytic orientation, which influences all of the Department's graduate degree programs. Graduate students receive a personal appointment to a faculty advisor and two faculty sponsors in an apprenticeship role. These arrangements facilitate the development of a personalized program to accommodate the academic and professional interests of the student and to utilize the full range of research and clinical facilities within the University. The student is encouraged to participate 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. Failure to meet these standards and the ethical principles of the American Psychological Association and the State of Michigan 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 four 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 are 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. Four letters of recommendation
4. An autobiography 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 January 20.

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, handicap, 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, and Section 504 of the Rehabilitation Act of 1973, and all other pertinent state and federal regulations.

Program Requirements

BEHAVIOR ANALYSIS
Advisor: Jim Carr
Behavior Analysis Program Chair
3758 Wood Hall

This program prepares students for doctoral study or for work in applied settings. The Behavior Analysis program requires thirty-six credit hours, including:
1. Principles of Learning and Motivation (3 hrs.)
2. Theoretical issues in Behavior Analysis (3 hrs.)
3. Professional Issues (1 hr.)
4. Behavioral Approaches to Individual and Systems Management (3 hrs.)
5. Cognates (0-3 hrs.)
6. Research Methods (6 hrs.)
7. Master's Thesis or Master's Project (6 hrs.)
8. Behavior Analysis: Theory and Application (5-12 hrs.)
9. Professional Experience (0-9 hrs.)

BEHAVIORAL ANALYSIS, SPECIALIZATION TRAJECTORY: DEVELOPMENTAL DISABILITIES
The thirty-six hours of the general behavior analysis curriculum must include the following:
5. PSY 570 Introduction to Mental Retardation (3 hrs.)
2. PSY 599 Practicum (3 hrs.)
3. PSY 651 Systems Analysis (3 hrs.)
4. PSY 665 Behavioral Approaches to Treatment (3 hrs.)
5. PSY 688 Analysis and Treatment of Developmental Disabilities (3 hrs.)
6. PSY 697 Behavior Analysis Master's Project or PSY 700 Master's Thesis (6 hrs.)

Note: The project or the thesis and the practicum must be in areas deemed by the student's M.A. Committee to be relevant to developmental disabilities.

Limited license advisory note: 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 PSYCHOLOGY
Advisor: Alyce Dickinson
Industrial/Organizational Psychology Program Chair
3700 Wood Hall

The master's program in industrial/Organizational Psychology 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 thirty-six credit hours, including:
1. Industrial/Organization Psychology Core (9 hrs.)
2. Behavior Principles (3 hrs.)
3. Behavior Systems Analysis (6 hrs.)
4. Methodology (6 hrs.)
5. Research Methods and Applications (6 hrs.)
6. Elective Cognates (6 hrs.)
7. A master's thesis is required of persons planning to pursue a Ph.D. degree, while those with a professional orientation select a research project (3 hrs.) and a professional practicum (3 hrs.) in an industrial setting. The selection of elective courses outside the core, including the thesis option, is approved by the advisor for the industrial/organizational psychology program.

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 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 Department.
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.

The credit hour requirements of the Ph.D. program are arranged to prepare students for teaching and research. The content areas and credit hours of the individual doctoral programs are listed below and include:

**BEHAVIOR ANALYSIS (85 hrs.)**

Advisors: Jim Carr, John Carr

1. Applied Behavior Analysis (6 hrs.)
2. Experimental Analysis of Behavior (8 hrs.)
3. Conceptual and Theoretical Issues (6 hrs.)
4. Research Methods and Statistics (8 hrs.)
5. Professional Issues (1 hr.)
6. Behavioral Electives (12-26 hrs.)
7. Cognates (0-12 hrs.)
8. Master’s Thesis or Project (6 hrs.)
9. Professional Experience (6-12 hrs.)
10. Doctoral Dissertation (15 hrs.)

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.

**CLINICAL PSYCHOLOGY (96 hrs.)**

Advisors: Richard Spates, 3538 Wood Hall

1. Clinical Foundations in Psychology (18 hrs.)
2. Methodology (12 hrs.)
3. Clinical Psychology Core (2-24 hrs.)
4. Clinical Psychology Core (18 hrs.)
5. Clinical Psychology Core (6 hrs.)
6. Dissertation (15 hrs.)
7. Practicum and Internship (21 hrs.)
8. Research Tools (12 hrs.)

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, the completion of approved practicum, and completion of a fifteen credit hour dissertation. The student is required to demonstrate competence in two research tools selected from foreign languages, American sign language, computer usage, research methods, or advanced statistics. Such tools may be integral to the program requirements or may be, in some instances, additional requirements. Specific tool requirements differ by program; the advisor will be able to provide complete information. 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 program is arranged to provide formal evaluation 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, the demonstration of competence in two research tools, satisfactory completion of comprehensive examination, and the oral defense of the dissertation before the student’s doctoral committee at a public presentation.

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.

**Psychology Courses (PSY)**

Open to Upperclass and Graduate Students

All 500-level courses in the Department of Psychology have a prerequisite of junior level status and PSY 500 under PSY 360. Exceptions to this requirement must be approved by the course instructor.

**PSY 510 Advanced General Psychology**

3 hrs.

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. Recommended Prerequisite: Majors only; permission of instructor.

**PSY 517 Psychology in the Schools**

3 hrs.

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 students. A primary focus of the role of the school psychologist will be provided. Prerequisite: PSY 330 or permission of the instructor.

**PSY 524 Human Sexuality**

3 hrs.

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. Prerequisite: Psychology majors only.

**PSY 526 Human Drug Use and Abuse**

3 hrs.

This course provides a general overview of toxic 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 this class, human research findings are emphasized where appropriate. Prerequisite: Psychology majors only.

**PSY 540 Psychology of Safety**

3 hrs.

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. Students gain valuable, practical experience by conducting behavior-based safety assessments in businesses settings under the supervision of the course instructor. The assessment site is obtained by the student, with the assistance of the instructor. Prerequisite: Psychology majors or permission of instructor.

**PSY 547 Practicum: Organizational Performance Improvement**

3 hrs.

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. Prerequisite: Permission of instructor.

**PSY 560 Behavioral Medicine**

3 hrs.

Application of behavioral technology to medical patients with emphasis on inpatient treatment. Same topics include behavior modification, pain control, compliance with medical regimen, and issues related to working in a medical setting.

**PSY 561 Introduction to Clinical Psychology**

3 hrs.

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. Prerequisites: Psychology major for undergraduates; instructor’s permission for graduate students.

**PSY 570 A Behavior Analysis Approach to the Area of Mental Retardation**

3 hrs.

Topics will include: historical background, assessment, treatment, and legal implications of treatment. Prerequisite: PSY 360.

**PSY 574 Cross Cultural Psychology**

3 hrs.

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 increased 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. Prerequisites: Psychology major for undergraduates; instructor’s permission for graduate students.

**PSY 595 History of Psychology**

3 hrs.

The historical and philosophical foundations of contemporary psychology are examined. Approximately equal emphasis is placed upon theoretical and empirical aspects of the evolution of the modern science. The origin and development of current behavioral approaches constitute a major focus.

**PSY 597 Topical Studies in Psychology**

1-4 hrs.

A survey and discussion of selected research topics of current interest. Topics may include both basic science and applied aspects of the discipline. Courses may be repeated for credit, although the total number of hours may be limited by the degree program. Students should consult the program advisor. Prerequisite: Permission of instructor.
PSY 598 Special Projects in Psychology
1-5 hrs.
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 five hours. Prerequisite: Graduate standing and permission of instructor.

PSY 599 Practicum in Psychology
1-4 hrs.
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 a professional 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. Prerequisite: Approved application required.

Open to Graduate Students Only

PSY 601 An Introduction to Assessment
1 hr.
This course is designed to introduce the student of professional psychology to the general area of psychological assessment. Through course readings and lectures, the student will acquire a background in such issues as Principles of Measurement, Types of Measurement Tools, Use of Rapid Assessment Devices, and criteria for selecting measures for practice. Additional areas covered will include the contrast and contrast traditional vs. modern psychometric considerations with behavioral assessment concerns, examine the latest version of the diagnostic and statistical manual of the DSM and behavioral assessment, address behavioral interviewing, as well as direct observation of behavior. The course will prepare the student to operate with sufficient understanding of assessment issues in the various clinical and research roles anticipated during the early professional psychology training career at Western Michigan University.

PSY 602 Introduction to Theoretical Issues
1 hr.
This course is designed to introduce the student of professional psychology to selected systems of behavior change and their theoretical underpinnings. Problems characteristic addressed by these theoretical models will be outlined. Client populations most suitably treated by the various systems will also be identified. Consideration is also needed to comparing and contrasting a radical behavioral model with alternative, conceptual schemes. Freudian analytical, cognitive, and behavioral approaches will be considered in lectures and readings. The student will develop an appreciation for the position of technical eclecticism while maintaining a theoretical preference.

PSY 603 Introduction to Professional Issues
1 hr.
This course is designed to introduce the student of professional psychology to many of the professional and ethical standards as well as contemporary issues affecting practice. Covered will be topics including the American Psychological Association's Ethical Standards for Psychologists, Standards for Providers of Psychological Services, Ethical Principles for Research with Human Subjects, The Licensing Rules for Psychologists in the State of Michigan, issues concerning Professional Training, and Ethics and Gender in Research and Practice. Students will develop an appreciation of the contemporary complexity of the field as it pertains to professional practice and related activity. This content will be addressed through course reading and lectures, as well as special projects conducted by students.

PSY 608 Research Methods in Applied Behavior Analysis
3 hrs.
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 and effectiveness within the context of the philosophy of science underlying all scientific research endeavors. Topics include: the mission of science; behavioral assessment and measure- ment; 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. Prerequisites: Courses in applied behavior analysis.

PSY 609 Advanced Seminar in Applied Behavior Analysis Research
3 hrs.
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. Prerequisite: Previous enrollment in PSY 608 and permission of instructor.

PSY 610 Conditioning and Learning
3 hrs.
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. Prerequisite: PSY 611 Current Research in Experimental Analysis
3 hrs.
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. Prerequisite: PSY 610.

PSY 611 Current Research in Experimental Analysis
3 hrs.
A survey of the interrelationships of physiological and behavioral processes. Lecture and laboratory. Prerequisite: Permission of the instructor.

PSY 612 Advanced Physiological Psychology
3 hrs.
A survey of the interrelationships of physiological and behavioral processes. Lecture and laboratory. Prerequisite: Permission of the instructor.

PSY 613 Behavioral Pharmacology
3 hrs.
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. Prerequisite: PSY 610.

PSY 614 Motivation and Emotion
3 hrs.
An introduction to the experimental analysis of psychological aspects of motives, incentives, and emotions. Prerequisite: Permission of instructor.

PSY 617 Applied Behavior Analysis in Education
3 hrs.
This course is designed to teach principles of learning and behavior and the application of those principles to individual and classroom instruction for teachers, school psychologists, and other educational professionals. Also, this course provides information needed for planning effective, data-based classroom interventions. Further, it provides important basic knowledge for future courses in assessment, interventions, behavioral research methods, and school psychology practice. It is expected that students will bring to class a basic entry knowledge of learning theory, with an emphasis on operant methodology.

PSY 619 Academic Interventions
3 hrs.
This course is intended to teach school psychologists methods for resolving learners' academic performance problems. Whether the professional is attempting to improve child performance prior to classification (pre-referral intervention) or following classification (modification for a student with a disability), the same basic principles of learning apply and, therefore, the same standards of professional behavior should be maintained. In this course, a model for improving learner outcomes that is grounded in data-based decision-making and effectiveness will be presented. The model will be applied to adapting curricula and classroom environments. There will be particular emphasis on evaluating the effectiveness and child outcomes and then selecting methods that cover empirical research as well as conceptual and strategic issues that should guide practical applications in adapting learning environments to meet students' needs. Prerequisite: Graduate standing in psychology or education, or permission of instructor.

PSY 620 Analysis of Abnormal Behavior
3 hrs.
An advanced study of behavioral disorders as characterized by the standard classification systems, the DSM III-R and ICD-9-M, with respect to their etiology, prognosis and treatment.

PSY 624 Personality Theory
3 hrs.
Consideration and evaluation of the major theories of personality with emphasis on those theories having implications for counseling and therapy. The course includes an examination of experimental evidence and illustrative case studies.

PSY 625 Treatment of Sexual Problems
3 hrs.
This treatment course will cover both sexual dysfunction and deviant sexual behavior. Assessment and diagnostic issues will also be covered. Prerequisite: Graduate student in psychology or permission of the instructor.

PSY 634 Experimental Design and Analysis I
3 hrs.
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. Prerequisite: An elementary course on statistics.

PSY 635 Correlation and Regression Analysis
3 hrs.
An advanced course covering simple correlation methods, inferential methods for one or many correlations including computation 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, partial and partial correlation, analysis of variance for simple and complex models, model comparison procedures, methods for nonlinear data (including polynomial regression and logistic regression models) and regression diagnostics. Prerequisite: PSY 634 or some other course covering the analysis of variance.

PSY 636 Experimental Design and Analysis II
3 hrs.
Advanced methods for designing, analyzing, and interpreting complex between-subjects and repeated-measurement design. Topics include powerful analysis for planning experiments, inferential analysis methods including ANOVA, multiple comparison procedures, simple main effects tests, interaction contrast tests, simultaneous confidence intervals, nonparametric methods, monotone alternative tests, and analysis of covariance for univariate experiments. Also discussed are methods for analyzing nonorthogonal designs, principles for analyzing experimental designs containing multiple response measures (such as multivariate analysis of variance and modified Bonferroni procedures), and current concepts of experimental validity. Prerequisites: PSY 634 and 635.
PSY 627 The Design and Analysis of Quasi-experiments and Observational Studies 3 hrs.

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. Prerequisites: PSY 634 and 655.

PSY 641 Systems Analysis 3 hrs.

The purpose of this course is to teach individuals how to conduct analyses at three critical levels within an organization: the organizational level, the process level, and the individual performer level. Organizational-level analyses focus on identifying (a) the customers of an organization and its financial stakeholders, (b) the organization's strategic goals with respect to its products and services, (c) its competitors in the market place, (d) the resources that the organization requires to produce its products or services, (e) environmental factors that affect the organization, and (f) its external feedback procedures that enable the organization to determine how well it is satisfying its customers. Process-level analyses identify critical business processes and specify the series of steps that are taken to produce each of the organization's major products and services. Performance-level analyses focus on identifying the factors that enable employees to perform well given the organizational and process goals identified by the organizational and process level analyses.

PSY 642 Performance Management 3 hrs.

The purpose of this course is to teach individuals how to implement performance management and performance improvement techniques in the workplace and (b) evaluate their effectiveness. Change strategies that employ objective measures of work performance, goal setting, performance feedback, and rewards will be emphasized. Applications of the use of these strategies to improve productivity (performance quantity, timeliness, and volume), safety, and quality will be examined. Evaluation strategies based on the ongoing analysis of work performance over time will be emphasized so that individuals will be able to make data-based management decisions about new and existing performance management systems.

PSY 643 Personnel Selection and Placement 3 hrs.

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. Prerequisite: An undergraduate course in statistics.

PSY 644 Personnel Training and Development 3 hrs.

The course emphasizes the principles of learning as well as techniques and administrative procedures used in the development of human resources at all levels.

PSY 645 Psychology of Work 3 hrs.

This course is an advanced course designed to examine the role of psychology 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. Prerequisite: PSY 510 or PSY 610 or permission of instructor.

PSY 648 Instructional Technology I 3 hrs.

The purpose of this course is to teach individuals how to construct and evaluate training materials for the workplace. After completing the course, students will be able to (a) identify employees' performances that affect business results, (b) specify the desired results of training in objective, measurable terms, (c) conduct front-end analyses that identify training methods, (d) conceptually analyze the desired performances, (e) identify appropriate training methods, (f) design training materials, and (g) evaluate the impact of training. The course is appropriate for those interested in developing training materials in business and industry and in public sector organizations.

PSY 649 Instructional Technology II 3 hrs.

The purpose of this course is to teach individuals how to develop and evaluate computer-based and web-based instructional materials for the workplace. Principles of learning will be applied to the design and construction of effective instructional materials. Students will create computer-based instructional materials as part of the course. The course is appropriate for those interested in developing training materials in business and industry and in public sector organizations. Prerequisite: PSY 648.


The application of systems analysis concepts to the design of systems which yield behavioral measures of complex social situations.

PSY 652 Advanced Systems Analysis 3 hrs.

An advanced course stressing integration of behavior analysis and systems analysis applied to the design, creation, and management of human performance systems. Students analyze complex systems, propose alternative systems, and develop objective measures. They also determine whether organizational systems are consistent with and effectively contributing to the organization's mission, goals and objectives. Prerequisite: PSY 651 or permission of instructor.

PSY 655 Seminar in School Psychology 3 hrs.

A seminar devoted to current professional practices in School Psychology. Focus is on studying various model systems for delivery of special services in the schools, as well as the various legal, ethical, and practical constraints on operation of such systems. Techniques of system analyses and synthesis are covered as well as consultation methodology employed to implement or facilitate operation of new school programs.

PSY 656 School-Based Consultation 3 hrs.

This course is designed to provide school psychology graduate students an opportunity to acquire knowledge and skills relevant to school-based consultation and problem solving. Students will learn about theories of consultation, empirical work, and practical application. This course will prepare students for the role of school-based behavioral consultant through course reading, lectures, in-class activities, and practical experiences. Although an emphasis will be on trand consultation, students will be introduced to systems and organizational consultation models for schools.

PSY 658 Social and Cognitive Development in Children 3 hrs.

This course provides a review of selected anxiety disorders and their treatment. Specific treatment techniques will be reviewed in detail and their relevance to theory and empirical literature discussed. Through lectures, case discussion, and audio-visual presentations, the course addresses basic approaches to understanding anxiety behavior and associated emotions. Also covered are historical and scientific concerns, paradigms for the study of anxiety, classification and assessment of anxiety, and research methods appropriate for the study of anxiety. Finally, the course examines the role played by anxiety across several disorders otherwise officially classified. The course is conducted in seminar fashion and student participation is expected and encouraged. Prerequisites: PSY 620.

PSY 659 Treatment of Anxiety Disorders 3 hrs.

This course provides a review of selected anxiety disorders and their treatment. Specific treatment techniques will be reviewed in detail and their relevance to theory and empirical literature discussed. Through lectures, case discussion, and audio-visual presentations, the course addresses basic approaches to understanding anxiety behavior and associated emotions. Also covered are historical and scientific concerns, paradigms for the study of anxiety, classification and assessment of anxiety, and research methods appropriate for the study of anxiety. Finally, the course examines the role played by anxiety across several disorders otherwise officially classified. The course is conducted in seminar fashion and student participation is expected and encouraged. Prerequisites: PSY 620.

PSY 660 Introduction to Clinical and Community Psychology 3 hrs.

A survey of the fields of Clinical and Community Psychology with emphasis upon the new roles of clinical psychologists and community psychologists. Recommended for beginning graduate students.

PSY 661 Psychotherapy: Theory and Methods 3 hrs.

This is a treatment course which reviews several theoretical approaches to, and problem solving, techniques for, a variety of client disorders. The course concentrates on the stages of treatment, the issues involved in treatment and various technical skills of treatment. Prerequisite: Permission of instructor.

PSY 662 Group Therapy 3 hrs.

Theory and application of problem solving interventions in a group setting. Various treatment techniques for a variety of problems are practiced through role playing and modeling in a small group setting. Prerequisite: Permission of instructor.

PSY 663 Marital Therapy 3 hrs.

Theory and application of problem solving interventions for a variety of problems associated with couples. A social learning and strategic systems approach is emphasized. Prerequisite: Permission of instructor.

PSY 664 Behavior Therapy 3 hrs.

This is a treatment course designed to familiarize the student with the methods, applications, theory and clinical literature of the behavior therapy. Prerequisite: Permission of the instructor.

PSY 665 Behavioral Approaches to Treatment 3 hrs.

This is a treatment course designed to familiarize the students with the methods, applications, theory and clinical literature of the behavior therapy. Prerequisite: Permission of the instructor.

PSY 667 Community Psychology 3 hrs.

The purpose of this course is to teach individuals how to develop and evaluate web-based instructional materials for the workplace. Principles of learning will be applied to the design and construction of effective instructional materials. Students will create computer-based instructional materials as part of the course. The course is appropriate for those interested in developing training materials in business and industry and in public sector organizations. Prerequisite: PSY 648.

PSY 668 Social and Cognitive Development in Children 3 hrs.

This course provides a review of selected anxiety disorders and their treatment. Specific treatment techniques will be reviewed in detail and their relevance to theory and empirical literature discussed. Through lectures, case discussion, and audio-visual presentations, the course addresses basic approaches to understanding anxiety behavior and associated emotions. Also covered are historical and scientific concerns, paradigms for the study of anxiety, classification and assessment of anxiety, and research methods appropriate for the study of anxiety. Finally, the course examines the role played by anxiety across several disorders otherwise officially classified. The course is conducted in seminar fashion and student participation is expected and encouraged. Prerequisites: PSY 620.

PSY 669 Treatment of Anxiety Disorders 3 hrs.

This course provides a review of selected anxiety disorders and their treatment. Specific treatment techniques will be reviewed in detail and their relevance to theory and empirical literature discussed. Through lectures, case discussion, and audio-visual presentations, the course addresses basic approaches to understanding anxiety behavior and associated emotions. Also covered are historical and scientific concerns, paradigms for the study of anxiety, classification and assessment of anxiety, and research methods appropriate for the study of anxiety. Finally, the course examines the role played by anxiety across several disorders otherwise officially classified. The course is conducted in seminar fashion and student participation is expected and encouraged. Prerequisites: PSY 620.
This course is an advanced seminar dealing with the basic behavioral concepts, principles, and such as behavioral contingencies, motivational analysis of behavior, reinforcement, and Contingencies of Reinforcement, especially as they consider issues of broad scientific, philosophical, and social significance. Prerequisite: PSY 610 or permission of instructor.

PSY 681 Personality Assessment 4 hrs.
Survey of the theory of personality assessment and the basic concepts of nonprojective measurement, with emphasis on the administration, scoring and interpretation of various instruments for personality evaluation. The course includes, but is not limited to, the supervised practice in the administration of the MMPI, clinical analysis questionnaire, and observational rating scales. Prerequisites: PSY 601 or equivalent and graduate program status.

PSY 683 Cognitive/Intellectual Assessment 3 hrs.
A course in individual assessment with particular emphasis on assessing cognitive functioning. The course covers basic psychometric concepts directly related to test administration and interpretation, and examines the complexities of measuring theoretical notions like intelligence. It also covers administration, scoring, and interpretation of individual assessment techniques. Prerequisites: Graduate program status in clinical psychology or permission of the instructor.

PSY 684 Personality Assessment: Projectives 3 hrs.
A study of, and supervised practice in, the administration, scoring, and interpretation of the Rorschach, revised Bender Gestalt, TAT and other projective tests. The course emphasizes the selection and interpretation of an integrated projective test battery for clinical evaluations. Prerequisites: PSY 601, 681, and graduate program status.

PSY 686 Psychoeducational Assessment 3 hrs.
A combined lecture and applied course covering both basic measurement principles and concepts and applications to norm-referenced, criterion-referenced, and direct assessment methods. Supervised experience in administering, scoring, and interpreting assessment devices, as well as developing and monitoring individualized intervention plans. There will be particular emphasis on academic and social behavior. Prerequisite: Permission of the instructor.

PSY 688 Advanced Behavioral Assessment 3 hrs.
The course is intended to develop knowledge in the functional analysis of behavior using self-report measures, behavioral interviewing, direct observation techniques, and physical recording. Reliability and validity issues with respect to each assessment method are covered. Behavioral consultation, and efficient alternative to one-on-one counseling in which therapist contact is primarily with the mediating rather than the client, is introduced. Prerequisite: PSY 602 or permission of instructor.

PSY 690 Behavioral Approaches to Training and Education 3 hrs.
The course addresses selection and use of material, the role of lecture and discussion, examinations, grading practices, all considered from a behavioral perspective. Higher education is emphasized.

PSY 691 College Teaching Practicum 3 hrs.
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.

PSY 697 Advanced Topical Studies in Psychology 2-4 hrs.
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. Prerequisite: Permission of instructor.

PSY 699 Clinical Practicum in Psychology 1-3 hrs.
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. Written permission must be obtained from the Department Clinical Committee. May be repeated for credit. Prerequisites: PSY 664 and PSY 668.

PSY 699 Clinical Practicum in Psychology II 3 hrs.
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. Written permission must be obtained from the Department Clinical Committee. Prerequisites: PSY 651 and PSY 698.

Open to Graduate Students Only—Please refer to The Graduate College section for course descriptions.

PSY 700 Master's Thesis 6 hrs.

PSY 710 Independent Research 2-8 hrs.

PSY 712 Professional Field Experience 2-12 hrs.

PSY 720 Specialist Project 6 hrs.

PSY 725 Doctoral Research Seminar 2-6 hrs.

PSY 730 Doctoral Dissertation 1-15 hrs.

PSY 732 Doctoral Clinical Internship 1-4 hrs.

PSY 735 Graduate Research 2-10 hrs.
Public Affairs and Administration

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Master of Public Administration

Advisor:
Robert Peters
Room 220E, Walwood Hall

The Master of Public Administration (MPA) integrates research, teaching, and service in a manner that enhances leadership skills, administrative development, management practices, and an understanding of environmental constraints on policy in southwest Michigan public-serving organizations. Program content emphasizes the administration of local, regional, and state government agencies; health care organizations; and other public and nonprofit agencies. 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 campuses in Kalamazoo, and at the University’s regional campuses in Lansing, Grand Rapids, Battle Creek, and Berrien County.

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 a minimum GPA of 2.5 in the final two years of undergraduate study may be considered for probationary admission to the School of Public Affairs and Administration. Admission is based on undergraduate grade point average, work experience, letters of recommendation, career goals, and personal interviews. The MPA Admissions Committee meets in February, June, and October of each year to consider applications for the following term.

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 two components: the Core Program and an Area of Concentration. Pre-career students also complete a three credit hour (300 contact hour) internship. The curriculum assumes that candidates already have basic computer literacy and a working knowledge of the American political process at local, state, and national levels.

Core Program (18 hours)

The Core Program includes course work in the theoretical foundation of public management, critical areas of administrative responsibility, and research methods. Students select one course from the listed options in each of the following core areas:

- Foundations (3 hours): PADM 600 Foundations of Public Administration
- Political Economy (3 hours): PADM 602 The Political Economy of Public Administration
- Applied Research Methods (3 hours): PADM 606 Applied Health Economics, or ECON 601 Basic Economic Analysis

Area of Concentration (21 hours)

Each Area of Concentration includes requirements in budgeting and financial management, human resources, law, project paper, and 9-12 hours of electives. Options for the Area of Concentration are health care administration, human resources administration, law, non-profit leadership and administration, and public management. In addition, the student’s electives are not adequately addressed by one of the five areas of concentration, he or she may, with an advisor’s assistance and approval, design his or her concentration with an array of courses that are taught by the School of Public Affairs and Administration or by other departments in the University.

Professional Field Experience/Internship (3 hours)

For pre-career students, the third major component of the MPA is a planned professional field experience, or internship, equivalent to three credit hours (300 contact hours). The goal of the internship is to provide candidates with a 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.

Health Care Administration Concentration

The 21 credit hour Health Care Administration (HCA) Concentration in the MPA is composed of one course from each of Areas I, II, III, IV, and VI and six hours from Area V. MPA candidates completing the concentration in addition to all other degree requirements will have “Health Care Administration” noted on their official transcript, beginning with those who graduate in the fall of 2001.

Area I, Budgeting and Finance: PADM 651 Introduction to Health Care Financial Management

Area II, Human Resources: PADM 627 Human Resources Administration or PADM 629 Supervisory Skills for Administrators

Area IV, Health Care Policy Development: PADM 653 Health Policy Analysis

Area V, Electives: PADM 654 Strategic Planning and Management in Health Organizations, PADM 655 The Administration of Health Services, PADM 657 Management of Managed Care Organizations, PADM 658 Seminar: Current Issues in Health Services Management and Delivery, PADM 678 Program Evaluation, FCL 688 Health Law Administration, or PADM 699 Legal Problems of Health Care Organizations, Other courses by permission of MPA Advisor

CAPSTONE PROJECT: PADM 680 Project Paper Seminar

Human Resources Administration Concentration

The 21 credit hour Human Resources Administration (HRA) Concentration in the MPA is composed of one course from each of Areas I, II, III, and V, and three courses from Area IV. Students 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.


Area II, Budgeting and Finance: PADM 612 Principles of Public Budgeting

Area III, Human Resources: PADM 627 Human Resources Administration or PADM 629 Supervisory Skills for Administrators

Area IV, Electives: PADM 627 Human Resources Administration or PADM 629 Supervisory Skills for Administrators

Area V, Capstone Project: PADM 680 Project Paper Seminar

Law Concentration

The 21 credit hour Law Concentration is composed of one course from each of Areas I, II, III, IV, and VI, and 6 hours from Area V. Since the Area I course (PADM 586) and the Area II course (PADM 644) are two-hour rather than three-hour courses, students who enroll in these courses must take an additional two hours of Nonprofit Leadership and Administration courses. MPA candidates completing the concentration in addition to all other degree requirements will have “Law” noted on their official transcript, beginning with those who graduate in the fall of 2002. Each of the law courses will be taught by Thomas M. Cooley Law School faculty. Students must be admitted to the Thomas M. Cooley Law School JD program and complete the Introduction of Law School Online Course (www.cooley.edu) prior to enrolling in any law courses and PADM 600 Foundations of Public Administration, or other appropriate MPA core course. Students are also urged to consult their advisor before pursuing the MPA law concentration.

Area I, Legal Dimensions: Federal Administrative Law (Thomas M. Cooley Law School course)

Area II, Budgeting and Finance: PADM 586 Budget Development for Nonprofit Organizations, PADM 612 Principles of Public Budgeting, or PADM 653 Financial Management of Health Care Organizations

Area III, Human Resources: PADM 627 Human Resources Administration, PADM 629 Supervisory Skills for Administrators, or PADM 644 Human Resources for Nonprofit Organizations

Planning and Proposal Writing. Other courses by permission of MPA Advisor.

**Area V, Capstone Project:** PADM 680 Project Paper Seminar.

**Joint Doctor of Laws and Master of Public Administration**

Advisor: Robert Peters
Room 220E, Walwood Hall

The joint JD/MPA 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 Western Michigan University's Grand Rapids and Lansing Branch Campuses and the Thomas M. Cooley Law School. The remaining MPA courses are offered in the University's regional campuses, including a course in Oakland County. Other courses by permission of MPA Advisor.

**Certificate Program in Nonprofit Leadership and Administration**

Advisor: Jane McManus
Room 220E, Walwood Hall

The purpose of the Graduate Certificate Program in Health Care Administration is to enhance the capacity of its graduates to function effectively as managers in the health care system. The program includes the legal, financial, and policy dimensions of contemporary health care administration, critical management issues, strategic planning and evaluation, and critical issues in the delivery of health care services.

**Admission Requirements**

For admission to the Health Care Administration Certificate program, applicants will meet one of the following criteria: (a) a master's or other graduate degree; (b) current admission to the MBA, MPA, or other participating master's degree program; or (c) a bachelor's degree with a 3.25 grade point average or substantial work experience in the management or delivery of health care services.

**Program Requirements**

Each student will satisfactorily complete a program consisting of six three-credit-hour courses (18 hours). Students select one course from each of Areas I, II, III, IV, and six hours from Area V.

**Area I: Health Care Environment**

PADM 651 Health Services Delivery

**Area II: Budgeting and Finance**

PADM 652 Financial Management of Health Care Organizations

**Area III: Health Care Policy Development**

PADM 653 Health Policy Analysis

**Area IV: Administrative Issues in the Delivery of Health Care Services**

PADM 655 The Administration of Health Services

**Area V: Electives**

PADM 654 Health Care Planning Strategies
PADM 656 Applied Health Economics
PADM 657 Management of Health Care Organizations

**Certificate Program in Nonprofit Leadership and Administration**

Advisor: Jane McManus
Room 220E, Walwood Hall

The purpose of the Graduate Certificate Program in Nonprofit Leadership and Administration is to enhance the capacity of its graduates to function effectively as leaders in nonprofit organizations. It is designed to meet the development needs of professionals currently filling administrative roles in nonprofit organizations, as well as those who plan to fill such roles in the near future.

The Nonprofit Leadership and Administration certificate program may be taken by itself or in conjunction with a graduate degree program.

**Admission Requirements**

Criteria for admission to this certificate program are: (a) a master's or other graduate degree, (b) current admission to a graduate degree program, or (c) a bachelor's degree with a undergraduate grade point average of 3.0 and work or voluntary experience or familiarity with nonprofit organizations. Students may be admitted under probation and later admitted to the program with evaluation of the first six credit hours, with no course below a 3.0. Students may transfer in a maximum of six (6) semester hours of graduate credit from another institution or from courses taken at Western Michigan University as a PTG student. Additional requirements include transfer credit not more than three years old, a minimum of 30 graduate credit hours, and successful completion of the Introduction to Law School online course. The remaining MPA courses may be transferred in and evaluated for credit with the approval of the MPA Program Advisor.
tions in October to admit students for the Spring semester; in February to admit students for the Summer I or Summer II session; and in June to admit students for the Fall semester.

**Program Requirements**

The Graduate Certificate Program in Nonprofit Leadership and Administration is an eighteen (18) credit hour program of study. Four core courses (10 hours) are required. The remaining 8 hours may be taken as electives. The courses are organized into one of four modules of study: Core, External Relations, Finance, and Administrative Skills. Within the Core, the student is required to take four courses (10 hours); three courses are required of all students, and the student will elect one of two capstone courses. The 8 hours of electives are required to be distributed over each of the other three modules, with a minimum of 2 credit hours and a maximum of 4 credit hours selected from each of the three modules.

- Core (10 hrs.)
  - PADM 589 Accounting and Financial Reporting by Nonprofit Organizations (3 hrs.)
  - FCL 681 Legal and Ethical Issues for Nonprofit Organizations (2 hrs.)
  - SOE 674 The Nonprofit Sector in Society (3 hrs.)
  - PADM 641 Administering Arts Organizations (2 hrs.)

- External Relations (2-4 hrs.)
  - COM 685 Public Relations for Managers (3 hrs.)
  - PADM 584 Promoting Nonprofit Organizations (2 hrs.)
  - PADM 583 Grant Writing for Nonprofit Organizations (2 hrs.)

- Finance (2-4 hrs.)
  - PADM 588 Endowment Development/Investments (2 hrs.)
  - PADM 587 Fund Raising for Nonprofit Organizations (2 hrs.)
  - PADM 586 Budget Development for Nonprofit Organizations (2 hrs.)

- Administrative Skills (2-4 hrs.)
  - PADM 590 Nonprofit Board-Staff Relations (1 hr.)
  - PADM 591 Strategic Planning (1 hr.)
  - EDLD 601 Evaluation in Nonprofit Organizations (2 hrs.)

- MGMT 652 Strategic Human Resource Management (3 hrs.)
- PADM 544 Human Resources for Nonprofit Organizations (2 hrs.)
- SWRK 623 Leadership in Nonprofit Organizations (2 hrs.)
- SWRK 627 Planning in Nonprofit Organizations (2 hrs.)

**Doctor of Philosophy in Public Administration**

**Advisor:** Matthew Mingus, Room 220E, Walwood Hall

The mission of the Doctor of Philosophy in Public Administration program is to give students a deep and pervasive knowledge of the history, theory, practice, and future of the field. The program is designed to encourage broad intellectual inquiry with a scholarly perspective. The curriculum incorporates a diversity of viewpoints, gathered from readings in the great books of the discipline, examination of the contributions of its seminal thinkers, an awareness of the institutions and processes of governance, exploration of emerging theories and trends, and an investigation of the challenges of public management in a democracy. 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.

The doctoral program is designed both for those who have experience in a supervisory or administrative position with a more sophisticated understanding of the governing process. Completion of the degree will provide doctoral graduates with the background 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.

Students are admitted into the doctoral program in odd-numbered years, and begin classes in the Fall semester. Each cohort moves through its sequence of courses and comprehensive examination together.

**Admission Requirements**

1. Master's degree in public administration or related area.
2. At least four years of experience in a supervisory or administrative position.
3. One academic reference and two letters of recommendation from persons acquainted with the applicant's professional work.
4. Completion of the Departmental Application that requires responding to several essay questions.
5. Graduate Record Examination (GRE) scores for the quantitative, verbal, and analytical parts of the examination.
6. An interview with members of the School's faculty.

**Program Requirements**

The forty-two hours of credit include eight required courses, a statistics requirement, a three-hour elective, and a minimum of twelve hours of dissertation credit.

**Required Courses (24 hours)**

- PADM 661 Intellectual History of Public Administration II (3 hrs.)
- PADM 663 Leading the Public Organization (3 hrs.)
- PADM 664 Research Design (3 hrs.)
- PADM 665 Public Policy Theory and Research (3 hrs.)
- PADM 666 Contemporary Issues in Public Management (3 hrs.)
- PADM 668 Management of Public Financial Resources (3 hrs.)
- PADM 692 Quantitative Data Analysis (3 hrs.)
- PADM 694 Qualitative Research Methods (3 hrs.)

**Statistics Requirement**

Each doctoral student is required to complete two comprehensive examinations. The first comprehensive examination will be taken after completion of the first year's required courses. The second comprehensive examination will be taken after completing the second year of required courses.

**Residency**

Each student is required to enroll in two courses each Fall and Spring semester until completion of the course work. After all classes have been completed, students are required to maintain continuous enrollment in PADM 730 Doctoral Dissertation until graduation.

Dissertation (12 hours)

- PADM 730 Doctoral Dissertation (12 hrs.)

**Public Affairs and Administration Courses (PADM)**

Open to Upperclass and Graduate Students Undergraduates with junior or senior status and 12 hours of course work in appropriate major fields may enroll in graduate courses with prior approval of the student's advisor or consent of the program director.

- PADM 580 Nonprofit Board-Staff Relations (1 hr.)
- PADM 581 Strategic Planning (1 hr.)
- PADM 582 Volunteer Recruitment and Retention (1 hr.)

This course will draw on empirical research on volunteers, practice-oriented experiences, and case studies to examine central issues in the recruitment, retention, and development of effective volunteers.

- PADM 583 Grant Writing for Nonprofit Organizations (2 hrs.)

This course takes students through a proactive grant proposal writing process. The course is conducted in a workshop format with emphasis on writing a grant proposal and on logical relationships between sections of a proposal.

- PADM 584 Promoting Nonprofit Organizations (2 hrs.)

A practical course in the application of marketing principles to nonprofit organizations. Emphasis will be placed on techniques for defining and identifying the organization's market, market research, quality and measurement of market satisfaction will also be covered. Participants will develop marketing strategies to meet the needs of identified markets. These strategies will include the identification of market offers, communication messages and methods, location issues, and the development of market budgets.

- PADM 586 Budget Development for Nonprofit Organizations (2 hrs.)

This course will examine procedures for projecting revenues, the extent to which tax policies affect private contributions to nonprofits, and the process for developing budgets. Line item and alternative budget formats will also be considered. An ability to use spreadsheets (e.g., Excel or Lotus) is strongly recommended.
PADM 587 Fund Raising for Nonprofit Organizations
2 hrs.
This course is designed to introduce and review the various forms of funding, such as the annual fund, special events, deferred giving, major gifts, special project campaigns, corporate/foundation gifts, and direct mail. Students will learn to assess their own organizations' fund raising readiness and develop fund raising plans unique to their organizations.

PADM 588 Endowment Development/Investments
2 hrs.
This course will provide students with the working knowledge of permanent endowment funds. The course will address the appropriate rationale for creating an endowment, endowment management, investment strategy, and utilization of earning in the nonprofit environment.

PADM 589 Accounting and Financial Reporting by Nonprofit Organizations
3 hrs.
A study of the accounting and financial reporting standards applicable to nonprofit organizations. Primary topics in the course include an overview of the fund structure used by different types of nonprofit organizations, basic fund accounting entries, and a review of financial reporting models for nonprofit organizations. Additional topics to be studied include budgeting and financial analysis techniques, internal controls components, as well as the organization's relationship with internal and external auditors.

PADM 598 Readings in Public Administration
1-3 hrs.
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 responsibility of the candidate and supervising faculty. Approval is contingent upon the merits of the proposal. Consent of both the supervising faculty member and the School Director is required prior to enrolling in this course.

PADM 599 Topics in Public Administration
1-4 hrs.
This changing topics course deals with particular issues of interest and concern to students in the MPA law program. The topics covered will be chosen by the students with the assistance of the faculty. The majority of the course examines the political, economic, and social changes that are occurring in the United States and the implications of these changes for public administration. Students will review current political trends and discuss the potential impact on public administration.

Open to Graduate Students Only

PADM 600 Foundations of Public Administration
3 hrs.
This course is designed to introduce and review major ideas and developments in the field of public administration and ethics. Major emphasis is given to tracing the historical evolution of public administration in the United States through the thought and intellectual activity of the leaders whose writings have most dramatically shaped the theory and practice of public administration in this country. Professional codes of ethics and their role in providing guidance to administrators are also examined.

PADM 602 The Political Environment of Public Administration
3 hrs.
This course examines the interaction between administrative agencies and the social, political, and economic forces which constitute their internal and/or external environment. It emphasizes the sources of bureaucratic power, the characteristics of administrative and political elites, and examines the strategies which administrators pursue in seeking both to ensure the survival of their agencies and to expand the programs which they direct. It also explores the influences of our political system on administrative decision making and attempts to evaluate agency responsiveness. This course should be taken as soon as circumstances permit.

PADM 604 Political Economy
3 hrs.
This course reviews basic economic concepts. The course also examines the impact of globalization on local economies, the constraints history, culture, politics, and economics impose on a jurisdiction's policy options, the implications of privatization and public/private partnerships for the production of public goods and services, and the use of cost benefit analysis to examine the behaviors of public agencies.

PADM 606 Applied Research Methods
3 hrs.
This course focuses on effective writing for research; the formulation of applied research questions; design and utilization of various research methods and techniques; the essential distinctions between qualitative and quantitative methods; the collection, manipulation, interpretation, and presentation of data utilized to analyze policy problems confronting professional administrators.

PADM 607 Data Analysis for Administrators
3 hrs.
This course is an introduction to statistical analysis as employed by professional administrators in the collection, manipulation, interpretation, and presentation of data utilized to analyze policy problems. The purpose is to develop basic statistical competency with emphasis upon the use and interpretation of frequency distribution, sampling techniques, hypothesis testing, central tendency, probability, variability, regression correlation, and various other applied quantitative measures. MPA students should not enroll in this course until a research methods course has been completed.

PADM 608 Organization Theory and Behavior
3 hrs.
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.

PADM 609 Organization Development
3 hrs.
This course is an introduction to the theories, models, and intervention modalities of Organization Development (OD). Topics to be explored and discussed include: the underlying organizational philosophy of OD; the OD view of persons in an organization; the OD view of organizations, subcultures or schools of thought in this field; role playing in selected OD interventions; and specific applications of OD in organizational settings. The objective of this course is to develop competence in the application of OD practices in a variety of agency settings.

PADM 610 Administrative Law and Governmental Regulation
3 hrs.
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.

PADM 611 Administrative Law and Governmental Regulation
3 hrs.
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.
PADM 620 Constitutional Law
3 hrs.
This course covers judicial review, Tenth and Eleventh Amendment doctrines, separation of powers between state relations, Congressional powers, state action, and the Contracts Clause. The course meets three times per week for fourteen weeks plus one class session for a final exam.

Prerequisites: Thomas M. Cooley Law School's course in Federal Administrative Law and advisor consent.

PADM 625 State Administrative Law
2 hrs.
This course examines the principles governing the theory, practice, and procedures of state administrative law. Principles to be addressed include delegation, separation of powers, access to information, rulemaking, due process, adjudication, and judicial review. The course meets two hours per week for fourteen weeks plus one class session for a final exam.

Prerequisites: Thomas M. Cooley Law School's course in Federal Administrative Law.

PADM 627 Human Resources Administration
3 hrs.
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.

PADM 629 Supervisory Skills for Administrators
3 hrs.
This elective course includes a consideration of the five most important functions of middle level managers and first line supervisors: decision making, 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.

PADM 641 Administering Arts Organizations
2 hrs.
This is a course in arts administration, including a brief review of the implementation of the major areas of administration, i.e., management, planning, and program development; marketing and public relations; funding development, etc. The focus of the course will be on both performing and visual arts. The performing arts component will highlight applications of managerial skills to music, dance, and theater, including audience development, union relations, front of house management, concert management techniques, and study of physical facilities. The visual arts component will feature application of management skills to museums, commercial and cooperative galleries, artists' space, and corporate and individual collections. For students seeking a concentration or certificate in the Nonprofit Leadership and Administration program, this course serves as the capstone course.

Prerequisite: Completion of 12 hours of Nonprofit Leadership and Administration course work.

PADM 642 Administering Human Service Organizations
2 hrs.
This course deals with how to administer human service organizations (HSOs) and is intended to integrate theoretical and technical-skill content from other courses in the program. The course uses a seminar format, along with case studies and problem solving simulations, to focus on a wide range of issues and dilemmas in the administration of HSOs. For students seeking a concentration or certificate in the Nonprofit Leadership and Administration program, this course serves as the capstone course.

Prerequisite: Completion of 12 hours of Nonprofit Leadership and Administration course work.

PADM 644 Human Resources for Nonprofit Organizations
2 hrs.
This course provides an overview of the functions of human resource activities as they relate to the broad objectives of the whole organization. Emphasis will be on fundamentals of job design, employment techniques, performance appraisals, pay practices, benefits options, employee relations, and termination practices.

PADM 651 Health Services Delivery
3 hrs.
This course provides a comprehensive overview of health services delivery systems in the U.S. with an emphasis on access, cost, and quality of care. This course deals with various issues, including causes and characteristics of health service utilization, cost and financing of health services, providers of health services, different dimensions of quality of care, and different delivery systems from other countries.

PADM 652 Financial Management of Health Care Organizations
3 hrs.
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.

PADM 653 Health Policy Analysis
3 hrs.
This course examines the public policy process as applicable to the physical and mental health fields. The impact of federal, state, and local policy on the delivery of health services with organizations is discussed and compared with international health delivery systems. Underlying legal and ethical issues confronting today's health delivery system are explored.

PADM 654 Strategic Planning and Management in Health Care Organizations
3 hrs.
This course provides an overview of the principles and methods of strategic planning and management. It examines the implementation of health administration principles to several practice settings. Emphasis is placed on decision-making, organizational performance, market analysis, renumeration control, strategic thinking, strategic formulation, and the importance of leadership in contemporary health care organizations.

PADM 655 The Administration of Health Services
3 hrs.
This course addresses the managerial functions in health care organizations. The responsibilities of health care managers in leadership, planning, controlling, organizing, staffing, budgeting, and evaluating performance are considered. Underlying ethical issues confronting the administration of health services are also explored. Techniques on how to manage rapid organizational changes are an integral part of the course.

PADM 656 Applied Health Economics
3 hrs.
With tools and techniques of economic analysis, this course covers relationships between economic characteristics and health status, theory of demand for health insurance and medical care, physician as entrepreneur, hospital cost function, and government health care programs such as Medicare and Medicaid.

PADM 657 Management of Managed Care Organizations
3 hrs.
This course provides an overview of issues related to management and planning of managed care organizations. This course covers the recent evolution of health care delivery systems, open versus closed panel plans, negotiating with providers including physicians and hospitals, Medicaid and Medicare managed care, and legal issues in provider contracting, how to develop PMPM premium rate, revenue maximization and cost control, and quality and performance measurement.

PADM 658 Seminar: Current Issues in Health Service Management and Delivery
3 hrs.
An advanced seminar that will consider current issues in the organization, finance, and delivery of health services. May be repeated for credit with a different topic.

PADM 661 Intellectual History of Public Administration
3 hrs.
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 influence of thinkers and movements related to American public administration.

PADM 663 Leading the Public Organization
3 hrs.
This course uses a 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 resource 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, human resources as well as the job 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.

PADM 664 Research Design
3 hrs.
Students will be involved in the development of a comprehensive research design identifying the discovery or solution of problems confronting public and nonprofit leaders and the organization. Components of the research design will consist of an original research question and the methodology for collecting, manipulating, interpreting, and presenting data.

PADM 665 Public Policy, Theory, and Research
3 hrs.
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 issue. Emphasis will be placed on primary sources in preparing an analytical paper.

PADM 666 Contemporary Issues in Public Management
3 hrs.
Contemporary public management faces critical challenges in its present standing and future role in American society. The 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 strategic planning for managing public organizations in the future in selected issue and policy areas.
This course seeks to build skill in program planning, program management, and proposal writing. The first part of this course will be devoted to the grantsmanship process, including how to: formulate and promote a project concept; prepare the project proposal; submit the project proposal; and follow-up after acceptance or rejection of the proposal. Emphasis will be placed on the project proposal as an integral component of agency planning, program management, and assessment activities, from both grantor and grantee perspectives. In the second part of this course, each participant will prepare a project proposal.

PADM 680 Project Paper Seminar
3 hrs.
This course is designed for MPA degree candidates who have completed the PADM 680 Project Paper Seminar requirements. It involves the development of a major research project and the preparation of a final project paper. This course provides an introduction to the process of writing a research paper and emphasizes the importance of effective writing skills.

PADM 686 State Agency Administration
3 hrs.
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 agency, and to develop a comprehensive understanding of state government administration.

PADM 687 Legislative Relations for Public Administrators
3 hrs.
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.

PADM 688 Planning and Proposal Writing
3 hrs.
This course seeks to build skill in program planning, program management, and proposal writing. The first part of this course will be devoted to the grantsmanship process, including how to: formulate and promote a project concept, prepare the project proposal, submit the project proposal, and follow-up after acceptance or rejection of the proposal. Emphasis will be placed on the project proposal as an integral component of agency planning, program management, and assessment.
Doctor of Philosophy in Science Education

Advisor:
William W. Cobern,
96 COLLEGE OF ARTS AND SCIENCES

Graduate School.

The Doctor of Philosophy in Science Education is designed to attract students who wish to obtain a strong background in science and to pursue research in science education. The program requires a minimum of seventy-two semester hours of graduate work in science and in science education. Appropriate course work at the master’s level will count toward the seventy-two semester hours.

Admission Requirements

The minimum admission requirements to this degree program are:

1. A master’s degree in a science or science education, and
2. teacher certification.

Students lacking the above may be admitted provisionally; however, satisfactory completion of 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.

Program Requirements

The program consists of seventy-two semester hours of graduate work. Each student’s program is planned in consultation with the advisor and consists of the following:

1. Twenty-four semester hours of graduate science to include a course in the history and philosophy of science.
2. Eighteen semester hours of science education to include SCI 615, 616, 617, and 690 (617 and 690 must be taken at least twice for a total of six semester hours each).
3. Twelve semester hours of research tools and design to include two semesters of statistics and a generic research design course.
4. Three semester hours of electives.

All candidates for the Doctor of Philosophy in Science Education must have satisfactorily passed a comprehensive examination. The examination should be taken after the student has completed the required coursework for the degree. A student may repeat one course in the course work, and the student must complete the degree within five years from the time the student is admitted to the graduate education program. The dissertation advisor may recommend either a written or an oral examination.

The research and dissertation are completed under the direction of a major advisor and a Doctoral Advisory Committee. The major advisor is selected by the student and the Committee members are recommended by the student in consultation with the major advisor. 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 dean of the College of Arts and Sciences and the Graduate College.

The residency requirement for this degree program is an academic year of two consecutive semesters of full-time study on the campus. To be eligible for the doctoral degree the student must have satisfactorily completed the course work, the research tools, the comprehensive examination, and a teaching experience in addition to the other candidacy requirements of doctoral programs in The Graduate College.

Science Education Courses (SCI)

Open to Undergraduate and Graduate Students

Undergraduate students must satisfactorily complete a minimum of four courses, or equivalent, applicable toward a major or minor and otherwise meet the specific course prerequisites to elect 500-level courses in Science Studies.

SCI 560 Science Workshop for Teachers

1-3 hrs.

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. It is a variable topics course and may be repeated for credit if different topics are involved. It is intended for delivery in one- to two-week workshop format. Prerequisites: Teacher certification or baccalaureate plus work toward certification.

SCI 570 Life Science Workshop for Teachers

1-3 hrs.

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. It is a variable topics course and may be repeated for credit if different topics are involved. It is intended for delivery in one to two-week workshop format. Prerequisite: Teacher certification or baccalaureate plus work toward certification.

SCI 580 Chemistry Workshop for Teachers

1-3 hrs.

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. It is a variable topics course and may be repeated for credit if different topics are involved. It is intended for delivery in one to two-week workshop format. Prerequisite: Teacher certification or baccalaureate plus work toward certification.

SCI 585 Physics Workshop for Teachers

1-3 hrs.

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. It is a variable topics course and may be repeated for credit if different topics are involved. It is intended for delivery in one to two-week workshop format. Prerequisite: Teacher certification or baccalaureate plus work toward certification.

SCI 590 Earth Science Workshop for Teachers

1-3 hrs.

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. It is a variable topics course and may be repeated for credit if different topics are involved. It is intended for delivery in one to two-week workshop format. Prerequisite: Teacher certification or baccalaureate plus work toward certification.

SCI 598 Readings in Science Education

1-4 hrs.

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.

Open to Graduate Students Only

SCI 601 Problems in Science Education

1-4 hrs.

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.

SCI 610 Science for Elementary Teachers

2-3 hrs.

This course is designed specifically for elementary and middle (junior high) school teachers who have little or no science background. The course has no prerequisites and prospective teachers as well as experienced teachers are welcome. The objectives of the course are to acquaint teachers with the major concepts of science important at the K-8 level and the appropriate methods of teaching those concepts to children. Science activities and learning by doing will be stressed, and resources for teaching science will be examined.

SCI 614 Science: Historical and Philosophical Perspectives

3 hrs.

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 614 is meant to provide a broad foundation for subsequent curriculum development, instructional design, and research into the teaching and learning of the sciences.

SCI 615 Science Education: Historical and Philosophical Foundations

3 hrs.

This course will familiarize students with the history of science education in the United States, leading up to current national reform efforts. The historical approach will provide a foundation to address curricular and literacy issues as well as the relevance of the history and philosophy of these concerns. The course will address two themes or “commonplaces” of education in a science education context—the social milieu and the curriculum.

SCI 616 Science Education: Models of Learning and Teaching

3 hrs.

This course will complement SCI 615 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.

SCI 617 Science Education: Research Traditions

3 hrs.

This course is designed to familiarize students with the more productive research traditions in science education and with the historical, philosophical, and methodological foundations. Each offering of the course will focus upon a particular tradition, for example, problem solving research or conceptual change research. This course may be repeated for credit. Prerequisite: Permission of instructor for M.A. students to enroll.
SCI 620 Topics in Science Education 2-6 hrs.
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. Course content may vary, and the course may be repeated for credit provided different topics are involved.

SCI 621 Topics in Science 2-6 hrs.
This course is designed to examine various science concepts and new developments of science 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.

SCI 625 Environmental Science Seminar 2-4 hrs.
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.

SCI 680 Science Education Seminar 3 hrs.
Designed to provide an integrating experience for students in the Science Education master's and doctoral programs. May be repeated for credit.

Open to Graduate Students Only—Please refer to The Graduate College section for course descriptions.

SCIO 700 Master's Thesis 6 hrs.

SCIO 710 Independent Research 2-8 hrs.

SCIO 730 Doctoral Dissertation 15 hrs.

SCIO 735 Graduate Research 2-10 hrs.

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**SOCILOGY**

Dr. Thomas VanValey, Chair  
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**Master of Arts in Sociology**

Advisor: Charles E. Crawford, Room 2507, Sangren Hall

**OPTION I. DISCIPLINARY MASTER'S**

This option of the Master of Arts in Sociology is designed to give students an advanced understanding of the significant factors and processes of human society, to further the preparation of those planning to teach in secondary or higher education; to prepare students for doctoral study in sociology; and to provide professional training for a variety of occupational opportunities in government, industry, education, research organizations, social agencies, and correctional systems. Each student's program is prepared individually in consultation with a graduate advisor.

**Admission Requirements**

1. Twenty-four semester hours in undergraduate social sciences, with at least fifteen semester hours in sociology, including courses in theory and research methods.
2. Grade-point average of 3.0 or better in undergraduate sociology courses.
3. If these requirements have not been met, the student may be required to complete additional course work as a condition of admission.
4. Applicants must supply a biographical statement and three letters of recommendation from academic and/or professional sources to the Graduate Admissions Committee, Department of Sociology.

**Program Requirements**

1. Complete at least thirty-six graduate credit hours, selected in consultation with the student's master's committee. At least twenty hours, including SOC 700 Master's Thesis, must be in sociology; up to nine hours may be in an approved cognate area. SOC 600, SOC 601, SOC 602 or SOC 604, SOC 606, POL 608, SOC 621, one additional research methods course in sociology, and SOC 700 are required of all master's students.
2. Maintain a grade point average of 3.0 or better in all course work.

**OPTION II. APPLIED MASTER'S**

This applied option of the Master of Arts in Sociology is a 47-48 hour professional degree program designed to prepare students for non-academic careers in governmental agencies, businesses, non-profit organizations, or in special circumstances for a doctoral program. Graduates will be well trained for such positions as data analysts, social systems and policy analysts, survey researchers, field directors, market researchers, and directors of research. This program will prepare graduates for the changing job market and the increased use of survey techniques and qualitative analysis to evaluate programs and shape decision-making in organizations.

**Admission Requirements**

The admission requirements for this program are the same as for Option I above.

**Program Requirements**

1. Complete 47-48 graduate credit hours:
   - Twenty-one hours in disciplinary core courses, twelve hours of research methods and statistics, and an additional nine hours of elective disciplinary and research courses.
   - Maintain a grade point average of 3.0 or better in all course work.
   - Complete an internship and internship report (internship essay) at the conclusion of the program. A thesis option is possible, with the addition of one credit, under special circumstances. Consult the departmental master's advisor for the exercise of this option.

**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 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.

**Doctor of Philosophy in Sociology**

Advisor: Charles E. Crawford, Room 2507, Sangren Hall

The Doctor of Philosophy in Sociology prepares students for careers in sociological research and teaching. Breadth training in sociology is provided through a wide variety of courses and research experiences. Guided individually by a doctoral committee, students are provided with core training in general sociology, theory, and research methods. Beyond this, students concentrate in two areas of sociology that are selected from important and active areas, such as applied sociology, criminology, comparative sociology, gender and feminism, medical sociology, social psychology, and race and ethnic relations theory.

Course work in a cognate area complements knowledge gained in selected specialties and the discipline as a whole.

**Admission Requirements**

1. Master's degree in sociology.
2. Grade point average of 3.25 in all graduate work, and the completion of the Graduate Record Examination.
3. Applicants who hold a master's degree in a related field may be admitted to the program, but may be required to make up deficiencies as a condition of admission.

4. Applicants must supply a biographical statement, a writing sample, and three letters of recommendation from academic and/or professional sources to: Graduate Admissions Committee, Department of Sociology.

Program Requirements

1. Complete, beyond the master's degree, at least sixty hours of course and dissertation credits, selected in consultation with the student's doctoral committee. Prerequisites for the doctoral program are SOC 600, 606, 607, and 621. The following courses are required for all doctoral students: SOC 602, 603, 604, 605, and one additional research course selected from SOC 525, 680, 681, 682, 687, or 688.

2. Complete a minimum of six hours of cognate courses from outside the Department of Sociology. The courses selected should be in a field of knowledge related to the student's major interest.

3. Demonstrate competence in two research tools selected from a foreign language other than English, research methods, and statistics.

4. Pass oral and written examinations in two departmental areas of concentration selected from applied sociology, comparative sociology, criminology, gender and feminism, medical sociology, race and ethnic relations theory, and social psychology.

5. Complete 15 credit hours of SOC 700 Doctoral Dissertation and submit a dissertation that is acceptable to the Department's graduate faculty and shows evidence of competence to design, carry out, and report an original sociological investigation.

6. Criteria for procedures for meeting these requirements are described in detail in the department's Graduate Manual.

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 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.

Sociology Courses (SOC)

Open to Upperclass and Graduate Students

500-level courses in the Department of Sociology are designed for a graduate student audience. Advanced undergraduates with at least 12 hours of prerequisites and junior class status will be allowed to enroll. Prerequisites must include SOC 200 or its equivalent in another related social science discipline and two 300- or 400-level courses (i.e. one of each; or two of one). Exemptions for these may be granted in rare cases with the written approval of the director of the Undergraduate Studies Program.

SOC 515 Sociology of Mental Illness 3 hrs.

This course will be concerned with examining the contemporary meaning of concepts of mental health and mental illness. The course will also consider the amount and kind of mental illnesses, especially the differences by social class, age, gender, race, marital status, urban versus rural living, and migration. An examination of the mental health care delivery system, the nature of help-seek ing for mental illness, and community care and public policy for mental illness. Prerequisite: SOC 200.

SOC 520 Studies in Social Psychology: Variable Topics 3 hrs.

Further analysis of selected topics in social psychology not intensively covered in other courses. Specific topic will be designated in the course title when scheduled. May be repeated for credit with a different topic. Prerequisite: SOC 320.

SOC 521 Social Psychology of Emotions 3 hrs.

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 action. Prerequisite: SOC 320 or graduate standing.

SOC 522 Social Psychology of Prejudice 3 hrs.

An analysis of the processes through which prejudice is learned and influences individual thought and social interaction. The nature of contemporary forms of prejudice will be analyzed, along with their cultural, cognitive, and motivational bases. Emphasis will be placed on how stereotypes are acquired and maintained, the consequences of prejudice for social interaction and intergroup conflict, and classic and contemporary strategies for the reduction of prejudice and discrimination. Students will be encouraged to conduct research projects involving topics of their choice. Prerequisite: SOC 320 or graduate standing.

SOC 525 Research Design and Analysis in Social Psychology 3 hrs.

This course will provide students with the knowledge necessary to evaluate research, to understand the relationship between theory and the research operations that are used to test and generate theory, and to design and carry out original research on social psychological topics. Students will learn about the appropriate use of survey, observational, experimental and quasi-experimental methods as applied to both field and laboratory settings. Class projects will teach students to design and conduct original research in social psychology, and to analyze data using relevant statistical techniques. Prerequisites: SOC 282 and 290, or graduate standing.

SOC 540 Sociology of Medicine 3 hrs.

A comprehensive survey of concepts and research findings in the field of the sociology of medicine. Topics to be covered include: the distribution of illness in society, relationships between social stress and disease, illness as a social process, health care professionals, the sociology of health care delivery. Prerequisite: SOC 373 or graduate standing.

SOC 552 Sociology of Aging 3 hrs.

An examination of the process of aging in American society, with particular emphasis on the periods of late maturity and old age. Consideration will be given to theories of aging and the social implications of age grading, the meaning of work and retirement, and the status and roles of the aged. Prerequisites of sociology, including SOC 200 or consent of instructor.

SOC 560 Corporate and Governmental Crime 3 hrs.

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. Prerequisites: SOC 200 or SOC 210, SOC 260, and SOC 362 and one other 300- or 400-level course.

SOC 561 Violence and U.S. Society 3 hrs.

This course analyzes the nature, extent and causes of violence associated with the United States. The forms of violence to be analyzed include interpersonal, institutional, and structural violence; recent theory and research on violence will be reviewed and various prevention and control policies will be discussed. Prerequisites: Graduate standing or SOC 200 or SOC 210, SOC 260, SOC 362 and one other 300- or 400-level course.

SOC 562 Victimology 3 hrs.

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 impacts of victimization. Prerequisites: SOC 200 or SOC 210, SOC 260, and one other 300- or 400-level course.

SOC 563 Gender and Justice 3 hrs.

This course provided an overview of the relatively recent fields 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. Prerequisites: Graduate standing or SOC 200 or 210, SOC 260, SOC 362, and one other 300- or 400-level course (SOC 314 is encouraged).

SOC 568 Race, Ethnicity, and Justice 3 hrs.

This course addresses the multicultural dynamics that affect the definitions (a) 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. Prerequisites: Graduate standing or SOC 200 or 210, SOC 260, SOC 362, and one other 300- or 400-level course.

SOC 578 Sociology of Law 3 hrs.

An examination of legal organization, the legal profession, and legal norms in the United States and other western societies. Emphasis will be placed upon the relationship of the legal system and the society in which it functions. Prerequisite: SOC 200 or equivalent.

SOC 590 Variable Topics in Sociology 3 hrs.

An examination of a selected topic in the field of sociology. The focus of the course may be theoretical, methodological, or substantive. Possible
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topics could include feminist theory, sampling and survey design, poverty, and cultural studies. May be repeated for credit with a different topic.

SOCI 598 Directed Individual Study
4 hrs.
A program of independent study (reading or research) to provide the unusually qualified sociological 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: Consent of instructor and the department chairperson.

Open to Graduate Students Only

SOC 600 Proseminar in Sociology
3 hrs.
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.

SOC 602 Classical Sociological Theory
3 hrs.
An intensive and critical study of major sociological theories developed in the 19th and early 20th centuries. The course will examine the logical structure of classical theoretical patterns of influence among theorists, and the central issues raised in their works. Theories will be examined with respect to both historical context and their influence on contemporary sociology.

SOC 603 Contemporary Theory: Culture, Social Action, and Society
3 hrs.
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. Prerequisite: SOC 602.

SOC 604 Contemporary Theory: Agency, Interaction, and Structure
3 hrs.
An intensive study of contemporary sociological and social psychological theories that address and critique the classical dualism between individual and social structure. The course will focus on theories of human interaction, and will attempt to show connections between micro and macro theories and/or level of analysis. Both foundational theories of interaction and integrative theories of agency and structure will be examined. Prerequisite: SOC 602.

SOC 605 Studies in Sociological Theory: Variable Topics
3 hrs.
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, ethnomethodology, philosophy of science, experimental design, Marx, Weber, or other selected theorists. May be repeated for credit with a different topic. Prerequisite: Consent of instructor.

SOC 606 Research Design and Data Collection I
3 hrs.
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.

SOC 607 Logic and Analysis of Social Research I
3 hrs.
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 will also be covered. Prerequisite: SOC 606.

SOC 617 Etiologies of Substance Abuse
3 hrs.
A study of various social and behavioral theories regarding the causation of alcohol and drug addiction. The findings of this research will be examined as they tend to support or disconfirm these social and behavioral theories.

SOC 620 Research Design and Data Collection II
3 hrs.
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 formulation of appropriate qualitative and quantitative research methods and their consequences for the research process. Students will have experience with the analysis of textual or other data in forming appropriate conclusions. Using SPSS, the design and administration of focus groups, and the construction of a sample survey. Prerequisite: SOC 606.

SOC 621 Logic and Analysis of Social Research II
3 hrs.
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. Prerequisite: SOC 607.

SOC 622 Advanced General Sociology
3 hrs.
A comprehensive survey of trends in the major fields of sociology. Prerequisites: Open only to graduate students in sociology.

SOC 623 Professional Writing for Sociologists
3 hrs.
This course will examine three forms of professional writing: Proposals for funded research, technical research reports, and scholarly journal articles. Students will receive extensive experience in writing, editing, and rewriting proposals, reports, and journal articles.

SOC 624 College Teaching Practicum in Sociology
3 hrs.
A practicum in the teaching of sociology in college. Students will attend assigned lectures and seminars, prepare a syllabus for a course in sociology, and deliver at least two supervised lectures to a sociology class. Prerequisite: Fifteen hours of graduate sociology courses and consent of instructor. Graded on a Credit/No Credit basis.

SOC 630 Studies in Social Problems: Designated Topics
3 hrs.
A detailed study of a social problem area through student reports and seminar discussion. Instructor will select topic. Course is intended to provide intensive joint exploration of significant sociological issues. May be repeated for credit with a different topic. Prerequisite: Consent of instructor.

SOC 631 Deviance and Social Problems Theory
3 hrs.
An intensive and critical examination of the historical development and current status of the major theoretical orientations in the study of deviance and social problems theory.

SOC 640 Social Organization of the Health System
3 hrs.
An examination of traditional and emerging ways in which health care is organized. A major concern will be the politics of health and the role of various interest groups (professional associations, unions, consumer groups) in the formulation of health policy. Among the topics to be considered are the development of American medicine, the relationships of organizational structure to effectiveness in health organizations, the social control of health care organizations, and the growth of medical bureaucracy. Prerequisite: SOC 540, or SOC 540 may be taken concurrently.

SOC 642 Social Epidemiology
3 hrs.
An examination of the relationships between sociocultural and demographic variables and variations in the distribution of infectious and chronic diseases, mental disorders and substance abuse. Sources of epidemiological data and methods of research are studied and evaluated. Application to the planning of health services and the development of service systems are presented.

SOC 643 Seminar in Medical Sociology
3 hrs.
An advanced seminar in some specialized aspect of medical sociology. May be repeated for credit with a different topic. Prerequisite: Consent of instructor.

SOC 644 Epidemiology and Health Statistics
3 hrs.
The course will cover the basic principles of epidemiology and biostatistics. Topics to be considered include: the nature of the epidemiologic perspective, epidemiologic methods and techniques, rates, screening, risk estimation, the design of epidemiologic investigations, measures of central tendency, basic inferential statistics, sampling, and hypothesis testing. Open only to Health Care Administration students, except by permission of instructor.

SOC 651 Social Psychological Theory
3 hrs.
A study of major theoretical approaches in social psychology and their methodological and substantive implications. Prerequisite: SOC 320 or equivalent.

SOC 653 Social Psychology of Health and Illness
3 hrs.
An examination of the impact of disease or disability on the individual. Individual responses to disease and disability are examined in relation to cultural, social psychological, and psychological variables. Environmental stress and personality factors are considered as they relate to the onset of disease. Consideration is given to the relevance of social factors for health services planning and communication of health care professionals with patients and clients. Prerequisite: SOC 540, or SOC 540 may be taken concurrently.

SOC 656 Seminar in Social Stratification
3 hrs.
This seminar will deal with the sociological explanations of stratification. The functional, conflict and evolutionary paradigms will be used to analyze and explain the nature, causes, and consequences of classes and status within social systems. The usefulness of such concepts as power, prestige, social class and status within social systems will be stressed.

SOC 660 Theoretical Issues in Criminology
3 hrs.
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.
This course will deal with the current debates and controversies in criminology, radical versus traditional perspectives, economic and white-collar crime as areas of research, the ethics of criminological research, environmental design and crime, and other timely and relevant issues emerging from current literature and conference debates.

SOC 663 Comparative Criminology 3 hrs.
An analysis in depth of crime as this phenomenon is viewed in Germany, Sweden, Poland, and other eastern and western European countries. Emphasis is placed on theoretical and methodological approaches in different societies, and the applicability and tests of theories in these societies. Prerequisite: SOC 466.

SOC 664 Studies in Criminology: Variable Topics 3 hrs.
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.

SOC 665 Research Issues in Criminology 3 hrs.
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.

SOC 673 Formal Organization 3 hrs.
This course analyzes the nature of large-scale, formal organizations, concentrating on their structure, types of organizational goals, processes of control, authority and leadership, and the relationship of organizations to their social environments. Examples of organizations will be selected from different areas such as education, government, medicine, science, leisure, and industry. Prerequisite: SOC 200 or consent of instructor.

SOC 674 The Nonprofit Sector in Society 3 hrs.
The course will provide an overview of the nonprofit or third sector of society and will explore its interrelations with other sectors in society. While the focus will be on nonprofits in American society, cultural comparisons will also be provided. The socioeconomic, organizational, and political roles of nonprofits will be examined for a wide range of different organizations. Special attention will be devoted to the changing roles of nonprofit and voluntary organizations in society.

SOC 675 Studies in Comparative Sociology: Variable Topics 3 hrs.
Interdisciplinary 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. Prerequisite: Consent of instructor.

SOC 680 Studies in Research Methodology: Variable Topics 3 hrs.
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. Prerequisite: Consent of instructor.

SOC 681 Advanced Multivariate Analysis 3 hrs.
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. Prerequisite: SOC 621.

SOC 682 Qualitative Methods 3 hrs.
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.

SOC 686 Applied Sociology 3 hrs.
Provides an overview of the development of applied sociology and an introduction to essential skills. Among the topics covered are proposal writing, budget preparation, systems analysis, presentation of data to clients, and the writing of research reports. Case study material will be used to introduce students to applied sociology in public, private, and non-profit settings.

SOC 687 Evaluation Research I 3 hrs.
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. Prerequisite: SOC 621.

SOC 688 Methods of Survey Research 3 hrs.
This course is a research seminar structured to provide practical experience in the use of social surveys. Both applied and disciplinary utilization will be studied as 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.

SOC 690 Computer Applications for Sociologists 3 hrs.
The course is designed to provide doctoral students in sociology with essential skills in the use of mainframe computers and microcomputers to perform such professional tasks as project design, interviewing, budgeting, and data analysis. Competence in using operating systems, word processing and SPSSX should be attained before enrolling for this class. Prerequisite: CS 501, or equivalent.

Open to Graduate Students Only—Please refer to The Graduate College section for course descriptions.

SOC 700 Master's Thesis 5 hrs.

SOC 710 Independent Research 2-6 hrs.

SOC 712 Professional Field Experience 2-12 hrs.

SOC 725 Doctoral Research Seminar 2-6 hrs.

SOC 730 Doctoral Dissertation 15 hrs.

SOC 735 Graduate Research 2-10 hrs.
upon the belief that advanced students ought to acquire the widest possible knowledge of Hispanic culture before they choose to limit their focus to selected portions of it in the doctoral dissertation. Students will be encouraged to develop a significant content base in the culture of Spain and America, from the beginnings to present day. They will be expected to understand the relationship between the myriad of specific components that have come to form Hispanic civilization and to appreciate them for their own esthetic and intellectual value, as well as for their particular contribution to the overall culture. Additionally, students should develop the methods and skills necessary to investigate and analyze language and 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 depth of Hispanic culture as it has evolved through time and across geography, and to enable students to formulate and express their own discoveries and conclusions regarding the enduring values and manifestations of that culture.

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 interview in Spanish, either in person or by telephone.

Program Requirements
1. Completion of a minimum of 36 hours of course work beyond the M.A., with a minimum grade point average of 3.00. All Spanish courses in the department must be taken at the 400 level. With prior approval of the Spanish graduate advisor, a maximum of six of the 36 hours may be taken in relevant courses in other languages in the department, with the approval of the department.
2. Successful completion of the following required courses, all of which count within the total 36 hours:
   a. Two in Literary Criticism
   b. Don Quijote
   c. History of the Spanish Language
3. Reading knowledge of at least one language, in addition to Spanish and English, relevant to one of the student's major research interests. Competency will be measured by a reading or translation examination, the exact format of which will be determined by the student's advisor in consultation with the student. The required level of reading is comparable to the third year of college study of the language.
4. Grade of "pass" or higher on the Ph.D. Comprehensive Examination. All course work and the reading knowledge examination (see 1, 2, and 3 above) must be completed before the comprehensive examination is taken. Additional information about this examination is given below.
5. Preparation and defense of a dissertation on a topic chosen by the student in consulta tion with the director. At least 15 hours of dissertation credits are required. Additional information about the dissertation is given below.
6. Fulfillment of 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 in the form of teaching assistantship. Opportunities for teaching exist in a variety of courses at the undergraduate level. This experience will be guided by faculty supervisor. Renewal or continuation of assistantship depends on satisfactory performance in teaching and in graduate studies, as well as on availability of university resources.
2. Study abroad. It is expected 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 this expectation as undergraduates, but they are urged to seek additional opportunities to study abroad. Students in our program are eligible for scholarships offered by the Universidad Autonoma de Quito in Ecuador and the Universidad de Burgos in Spain, institutions with which we have exchange agreements. Six hours of graduate course work at these institutions may be counted toward the 36 hour Ph.D. course requirement. Study at other universities in Mexico, Spain, or other countries is also possible with the Graduate advisor. Research and writing for the dissertation may be carried out during residence abroad, provided that arrangements are approved by the dissertation advisor. 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.

Areas of Study and Comprehensive Examination
Areas of study are the following:
- Spanish literature and culture: medieval and Golden Age periods
- Spanish literature and culture: 18th century to present
- Spanish American literature and culture: colonial period to Modernismo
- Spanish American literature and culture: Modernismo to present
- U.S. Latina/o literature and culture
- Spanish language and culture: synchronic and diachronic linguistics

Students are expected to prepare themselves through course work in all areas of study, and through additional readings. They will select two areas of major interest and three areas of support ing interest. Reading lists in each area will serve as guides for students' preparation. Lists in the major areas are, of course, more substantial than those in the supporting areas. Students should take the comprehensive examination as soon as possible after finishing required course work and passing the reading knowledge exam, but in any case they must take the examination within a period of six months after having completed those requirements.

The comprehensive examination will be given twice each year during a three-week period, in May and October. The exam will be structured in this way: (1) Two four-hour written exams, one over each of the two areas of major interest; (2) one three-hour written exam over the three areas of supporting interest; (3) one oral exam lasting approximately two hours. All parts of the comprehensive examination will be conducted in Spanish.

A single grade will be given for the entire exam. Possible grades are: superior, good, pass, fail. Students who fail the exam may retake it once. At the discretion of the examination committee, they may be required to retake the entire examination or limited portions of it.

Dissertation
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 course work, 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 dissertation 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.

Spanish Courses (SPAN)
Open to Upperclass and Graduate Students
500-level courses may be taken by advanced undergraduate students. Advanced undergraduate students are defined as those who have satisfactorily completed a minimum of four courses, or equivalent, applicable toward a major or minor in any one language. Each course, however, may have more specific and/or additional prerequisites.

SPAN 526 Survey of Spanish Literature to the 18th Century
3 hrs.
A survey of Spanish literature from its origin to, and including, the seventeenth century. Prerequisites: SPAN 316, 317, and 325.

SPAN 527 Survey of Spanish Literature from the 18th Century to the Present
3 hrs.
A survey of Spanish literature from the eighteenth century to the present. Prerequisites: SPAN 316, 317, and 325.

SPAN 528 Survey of Spanish American Literature to Modernismo
3 hrs.
A survey of Spanish American literature from its origin to the era of Modernismo (18 th century). Prerequisites: SPAN 316, 317, and 325.

SPAN 529 Survey of Spanish American Literature from Modernismo to the Present
3 hrs.
A survey of Spanish American literature from late 19th century to the present. Prerequisites: SPAN 316, 317, and 325.

SPAN 550 Independent Study in Spanish
1-3 hrs.
Directed, individual study of a specific topic in a Spanish literary or linguistic area. Departmental approval required for admission. Repeatable for credit. Prerequisite: One 500-level literature course in the major; a minimum grade-point average of 3.0 in the major.

SPAN 560 Studies in Spanish Literatures
3 hrs.
Topic varies according to genre, author, or period and will be announced. Each of these courses carries separate credit, although all are listed under 560. Thus, a student may take any or all of the offerings at various times. Prerequisite: Three hours of SPAN 526, 527, 528, 529, or departmental permission. Representative topics which may be treated in this area include: Cervantes—Don Quijote and other works of Cervantes together with his life and thought. Seventeenth Century Theater. Main works of Lope de Vega through Calderon de la Barca. Nineteenth Century—The Romantic Movement.
Nineteenth Century Novel—Development of the regional novel from Fernan Caballero through Biscos Ibarne.

Generation of '98—Thought and works of typical representatives such as Unamuno, Azorin, Baroja, and A. Machado.

Contemporary Theater—Evolution and analysis of the characteristic plays of Spanish-American Short Story—Significant stories along with the cultural and social background.

Contemporary Spanish-American Novel—The new Spanish-American novel along with the cultural and social background.

Open to Graduate Students Only

SPAN 600 Don Quijote
3 hrs.
An in depth study of Cervantes’ masterpiece. Emphasis is on literary analysis, but attention will also be paid to Cervantes’ language.

SPAN 605 Foundation in Spanish Linguistics
3 hrs.
Recommended for graduate students of Spanish with little or no prior experience in linguistics. This course provides a foundation in the fundamental areas of Spanish linguistics: phonology and phonetics, morphology, syntax, and variation in these levels of language. The course prepares students for the advanced study of more specialized topics in Spanish linguistics. Prerequisite: Acceptance into M.A. or Ph.D. in Spanish, or PTG status and permission of instructor.

SPAN 610 Topics in Hispanic Culture
3 hrs.
The advanced study of selected aspects of Hispanic culture. Course varies according to topic and may be repeated with permission of advisor. Representative topics include: Non-Castillian Spanish Cultures: Galicia, Euskadi and Catalonia; 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.

SPAN 620 Topics in Spanish Literature
3 hrs.
The advanced study of selected aspects of Spanish literature. Course varies according to topic and may be repeated with permission of advisor. Representative topics include: Medieval Spanish Literature; Golden Age Poetry and Theatre; Golden Age Prose; Cervantes: Galatea, Novelas ejemplares, Persiles y Sigismunda; Nineteenth Century Literature; Generation of 1898; Contemporary Spanish Theatre; Modern Spanish Theatre; Modern Spanish Poetry.

SPAN 630 Topics in Spanish American Literature
3 hrs.
The advanced study of selected aspects of Spanish American literature. Course varies according to topic and may be repeated with permission of advisor. Representative topics include: Literature of the Colonial Period; Nineteenth Century Literature; Spanish American Modernismo; Contemporary Spanish American Fiction; Spanish American Essay; Spanish American Poetry.

SPAN 640 Topics in Spanish Linguistics and Methodology
3 hrs.
The advanced study of selected aspects of Spanish linguistics and methodology. Course varies according to topic and may be repeated with permission of advisor. 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.

SPAN 650 Methods of Teaching College Spanish
3 hrs.
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; examining and testing; and aspects of second language acquisition theory. Participants create and share materials to be used in their own language classrooms. Prerequisite: Acceptance into Spanish M.A. program, or PTG status and permission of instructor.

SPAN 660 History of the Spanish Language
3 hrs.
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. Prerequisite: Open only to graduate students admitted to Spanish curriculum or by permission of Spanish graduate advisor.

SPAN 670 Trends in Literary Criticism
3 hrs.
This course introduces students to significant trends in modern literary theory by focusing on representative theorists and the application of various critical methodologies. Literary genres and texts will be examined in light of specific theoretical writings. Prerequisite: Open only to graduate students admitted to Spanish curriculum or by permission of Spanish graduate advisor.

SPAN 677 Foreign Study
1-12 hrs. Fall, Spring
1-6 hrs. Summer I, Summer II
Student participation in departmentally approved program of study abroad. Repeatable for credit with advisor’s approval for up to 24 credit hours. Prerequisite: Approval of Spanish graduate advisor and departmental chairperson.

SPAN 680 Research and Writing
3 hrs.
A study of the techniques of research and the art of expression, leading to the completion of a scholarly monograph. (Enrollment limited to ten students.)

SPAN 690 Seminar
1-3 hrs.
Intensive study of a particular author or of a literary, linguistic, or cultural topic. Course varies according to topic and may be repeated with permission of advisor.

Open to Graduate Students Only—Please refer to The Graduate College section for course description.

SPAN 710 Independent Research
2-6 hrs.
SPAN 711 Readings in Doctoral Specialization
3 hrs.
SPAN 730 Doctoral Dissertation
15 hrs.

Language Courses (LANG)

Language Teaching Course

LANG 558 Modern Language Instruction (in French, German, Spanish, or other language)
3 hrs.
Required for modern language teaching majors and minors. This course will acquaint prospective language teachers with various approaches and strategies involved in modern language teaching. Specifically, in a performance-oriented program, students will learn theory and practice related to teaching the listening, speaking, reading and writing skills, as well as the culture component. Students must complete this course before beginning directed teaching. Prerequisite: Minimum of four courses including a language at the 316 and 317 level, or equivalent, or permission of instructor.

FOREIGN LANGUAGES FOR SPECIAL PURPOSES

LANG 580 Foreign Language for Special Purposes
1-12 hrs.
The study of or practice in a specialized area in the field of foreign 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. Students may repeat the course for credit, provided the subject matter differs. Prerequisite: Completion of four courses in area of specialization; departmental approval required.
The Department of Statistics offers graduate programs leading to the Master of Science in Biostatistics, the Master of Science in Statistics, and the Doctor of Philosophy in Statistics.

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, 3306 Everett Tower.

Admission Requirements
For admission to this program a student should have completed at least thirty-two credit hours of graduate work, including a complete calculus sequence, a course in linear algebra, and a course in statistical methods, and applied statistics areas. Choices available in the cognate area allow the program to be designed to suit a variety of career interests.

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 training with satisfactory grades as determined by the Doctoral Committee. Upon entrance to the program the student is assigned an advisor who assists him/her in planning his/her program until he/she reaches the stage of having a Dissertation Advisor appointed.

Advising
The Statistics Doctoral Committee will be responsible for advising the student in the statistics doctoral program. Upon entrance to the doctoral program in Statistics, the student will be assigned an advisor by the Statistics Doctoral Committee for planning the student's program until he/she reaches the status of candidate. During the semester in which the student attains the status of candidate, with the approval and advice of the Departmental Doctoral Committee and the Statistics Doctoral Committee, he/she will be assigned a dissertation advisor. The candidate and the dissertation advisor will select, with the approval of the committee, a Dissertation Committee for the candidate. In each of the above situations final appointment is subject to the approval of the Chairperson of the Department and The Graduate College. During the first semester, the student must have a plan of work written by the Statistics Doctoral Committee and approved by the Departmental Doctoral Committee. The selection of preliminary exams shall be included.

Program Requirements
1. As soon as possible, a student must pass the Departmental Graduate Examination in Statistics at the doctoral level. This consists of two, three-hour exams in the areas of theoretical statistics (including probability) and applied statistics from the courses STAT 562, 660, 662, and 664. The Departmental Graduate Examination will be given once a year, usually in the Spring.
2. Course and dissertation work, at least 75 credit hours, including:
   a. STAT 562, 660, 662, 664, 680.
   b. The doctoral preliminary examination for the doctorate: a written examination (STAT 712) in theoretical statistics.
5. Internship Component (5 credit hours): A professional field experience internship with a health-related industry. Normally this is taken as STAT 712.
6. Final Examination: Before beginning the internship, each program must have successfully passed a written comprehensive examination covering the material of STAT 562, 660, 662, and 664.
7._local report: At the completion of the internship, each candidate must submit a final report on the internship project.

Program Requirements
1. The Biostatistics Admission Committee will admit candidates to the program based on the following criteria:
   a. Strength and breadth of the undergraduate course work.
   b. Availability of internships. (Admission to the program is limited by the number of opportunities available.)
2. A promising student may be admitted to the program with deficiencies in the admission requirements and be required to complete this work as extra program requirements.
3. Students are urged to submit scores received on the Graduate Record Exam (GRE).

Program Requirements
2. Biological Sciences Component (6 credit hours): Two approved 500-level biological sciences courses. These courses are chosen to fit a student’s individual interests.
3. Elective Component (3 credit hours): An approved 500-600 level course from Statistics or Biological Sciences.
4. Internship Component (5 credit hours): A professional field experience internship with a health-related industry. Normally taken as STAT 712.
5. Final Examination: Before beginning the internship, each program must have successfully passed a written comprehensive examination covering the material of STAT 562, 660, 662, and 664.
6. Final Report: At the completion of the internship, each candidate must submit a final report on the internship project.

Doctor of Philosophy in Statistics
The Doctor of Philosophy in Statistics is designed to prepare students for careers in teaching and research in 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 cognate area allow the program to be designed to suit a variety of career interests.

Program Requirements
1. As soon as possible, a student must pass the Departmental Graduate Examination in Statistics at the doctoral level. This consists of two, three-hour exams in the areas of theoretical statistics (including probability) and applied statistics from the courses STAT 562, 660, 662, and 664. The Departmental Graduate Examination will be given once a year, usually in the Spring.
2. Course and dissertation work, at least 75 credit hours, including:
   a. STAT 562, 660, 662, 664, 680.
   b. The doctoral preliminary examination component (STAT 712) in theoretical statistics.
5. Internship Component (5 credit hours): A professional field experience internship with a health-related industry. Normally this is taken as STAT 712.
6. Final Examination: Before beginning the internship, each program must have successfully passed a written comprehensive examination covering the material of STAT 562, 660, 662, and 664.
7. Final Report: At the completion of the internship, each candidate must submit a final report on the internship project.
Statistics Courses (STAT)

Open to Undergraduate and Graduate Students

Undergraduates with junior or senior standing and 12 or more credit hours of work in mathematics and statistics may enroll in 500-level courses with prior approval of the department chairperson.

STAT 560 Applied Probability

3 hrs.

A first course in probability for upper division and graduate students interested in applications. Topics will include probability spaces, expectation, moment generating functions, central limit theorems, special discrete and continuous distributions. Applications will include reliability and production problems. Not recommended for students who have taken STAT 362 or 660. Prerequisite: MATH 272.

STAT 561 Applied Multivariate Statistical Methods

3 hrs.

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. Prerequisites: An introductory course in statistics and a course in linear algebra.

STAT 562 Statistical Theory

4 hrs.

A first course in statistical theory. Topics include random variables, distributions of statistics, limiting distributions, and elementary theory of estimation and hypothesis testing. Prerequisites: MATH 230, STAT 364, (560 or 460) or equivalent.

STAT 563 Sample Survey Methods

3 hrs.

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; measurement of survey costs; sample size determination. Real surveys are discussed and actual survey data are analyzed. Prerequisites: An introductory course in statistics and consent of instructor.

STAT 565 Design of Experiments for Quality Improvement

3 hrs.

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. Prerequisite: An introductory course in statistics.

STAT 566 Nonparametric Statistical Methods

3 hrs.

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. Prerequisite: An introductory statistics course.

STAT 567 Statistical Design and Analysis of Experiments

4 hrs.

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 modeled around the complete analysis of good applied problems. Prerequisite: An introductory statistics course.

STAT 588 Regression Analysis

3 hrs.

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. Prerequisite: An introductory statistics course.

STAT 599 Quality Improvement Concepts and Methods

4 hrs.

This is a course on quality technology for application in business and industry involving concepts and methods from Statistics, Management, and Psychology and how they must blend together to obtain results. Topics may include: quality concepts for products and services, Deming philosophy of quality improvement, leadership and management concepts, analytic vs. enumerative studies, theory of variability, the seven tools, exploratory data analysis, statistical graphics, Shewhart control charts, cusum charts, process capability, principles of experimental design, robust product and process design. Prerequisites: An introductory statistics course such as STAT 260 or STAT 364.

STAT 599 Independent Study in Statistics

1-6 hrs.

Advanced students with good scholastic records may elect to pursue independently the study of some topic having special interest for them. Topics are chosen and arrangements are made to suit the needs of each particular student. May be repeated for credit. Prerequisite: Approval of chairperson of department.

Open to Graduate Students Only

STAT 622 Preparation of Large Data Sets for Statistical Analysis

3 hrs.

Students will use standard database software, spreadsheets and relational databases, to learn how to handle large data sets in preparation for statistical analysis. They will learn how to enter and query databases that have already been constructed and be exposed to basics of building relational databases. It is anticipated that Excel, Access, and Oracle are software packages to be used in the course, but choice is dependent on course instructor. Prerequisites: Introductory course in statistics. Experience with spreadsheets and/or programming language is beneficial.

STAT 660 Statistical Inference I

4 hrs.

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. Prerequisite: STAT 562.

STAT 661 Multivariate Statistical Analysis

3 hrs.

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 T2/U2-statistic; Wishart distribution; applications to tests of the mean vector and covariance matrix; principal components; factor analysis; cluster analysis; discriminant analysis. Prerequisite: STAT 663.

STAT 662 Applied Linear Models 3 hrs.
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. Prerequisites: MATH 230, STAT 364, (560 or 460) or equivalent.

STAT 663 Linear Models 3 hrs.
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. Prerequisites: STAT 660 and 662.

STAT 664 Design of Experiments I 3 hrs.
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. Prerequisite: STAT 662.

STAT 665 Statistical Inference II 3 hrs.
Theory of statistical inference are discussed. Topics include [but not limited to] asymptotic theory, sufficiency, maximum likelihood methodology, Bayesian procedures, robust procedures, nonparametric tests, resampling, and asymptotic efficiency. Prerequisite: STAT 660.

STAT 666 Nonparametric Statistical Theory 3 hrs.
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. Prerequisite: STAT 660.

STAT 667 Introduction to Random Processes 3 hrs.
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. Prerequisite: STAT 660 or equivalent.

STAT 668 Categorical Data Analysis 3 hrs.
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 660, 662.

The subject matter for this course is variable. Advanced work is considered and organized around topics not usually considered in the other courses.

STAT 680 SAS Programming 3 hrs.
Students will use SAS to manipulate data, create effective tables and plots, and write programs for nonstandard problems. Prerequisite: STAT 662 or consent of instructor.

STAT 681 Survival Data Analysis 3 hrs.
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 SAS (or comparable statistical packages). 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 Wilcoxon), 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 660 and 662.

STAT 682 Time Series Analysis 3 hrs.
The theoretical development and practical use of seasonal and non-seasonal ARIMA (Auto-regressive 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 BIOMET statistical packages are included. Topics include: autocorrelation function, partial autocorrelation functions, Yule-Walker equations, differencing, stationarity, autocorrelation models, moving average models, seasonality, invertibility, and Box-Pierce tests. Prerequisites: STAT 660 and 662.

STAT 683 Robust Statistical Analysis 3 hrs.
Robust statistical procedures for inference in location, linear and multivariate models are presented. This will include broad classes of robust estimates, including Huber-, M-, and L-type 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. Prerequisites: STAT 660 and 662.

STAT 684 Design of Experiments II 3 hrs.
This course is a continuation of Design of Experiments I. The additional topics include: repeated measurement designs, analysis of covariance designs, response surface designs, partially balanced incomplete block designs, mixture models, analysis of models with missing data using Types I, II, III, and IV SAS sums of squares, analysis of large experiments with many crossed and nested factors, and some Taguchi methods. Prerequisite: STAT 664.

STAT 685 Applied Data Mining 3 hrs.
Examine the philosophy and practice the methods of using gigantic data collections to discern desirable information. Topics include: Statistical evaluation of gigantic data collections; data warehousing; data form; data transformations; missing data; data reduction; application of neural networks, genetic algorithms; and hybrid models. Prerequisite: STAT 464.

STAT 686 Regulatory Environmental Statistics 3 hrs.
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-defective 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. Prerequisites: STAT 562 or 662 or permission of instructor.

STAT 691 Practicum in Statistical Consulting 1 hr.
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 interpretation and effective communication with a client to the production of a final written report on the statistical aspects of the project. May be taken for credit at most three times. Prerequisites: STAT 662 (or concurrent enrollment) and at least one of STAT 563, 566, 567, or 568.

STAT 696 Seminar in Probability and Statistics 1-3 hrs.
May be repeated for credit.

STAT 698 Statistical Consulting Internship 2-6 hrs.
The statistical consulting internship program provides a graduate student with the opportunity to work as a member of the staff in the Statistical Consulting Lab. The student gains considerable experience in all aspects of the consulting experience and the operation of a consulting center. Prerequisite: Consent of Advisor.

STAT 699 Reading and Research 1-6 hrs.
May be repeated for credit.

Open to Graduate Students Only—Please refer to The Graduate College section for course descriptions.

STAT 712 Professional Field Experience 2-12 hrs.

STAT 730 Doctoral Dissertation 2-5 hrs.

STAT 735 Graduate Research 2-10 hrs.

STATISTICS 105
WOMEN'S STUDIES

Dr. Gwen Raaberg, Director
Main Office: 341 Moore Hall
Telephone: 387-2510
FAX: 387-2507

Women's Studies Courses (WMS)

Open to Upperclass and Graduate Students

The prerequisites for admission of undergraduates to 500-level Women's Studies courses are 12 hours of course work from the Women's Studies approved list, including WMS 200, and at least junior level status, or departmental approval.

WMS 500 Seminar in Women's Studies

3 hrs.
A seminar offering variable topics that focus on special problems or issues in Women's Studies. Emphasis will be placed on developing skills in research approaches and on writing a research paper integrating the student's disciplinary training with investigation of an interdisciplinary problem in Women's Studies. May be repeated for credit when topics vary.

WMS 550 Contemporary Feminist Theory

3 hrs.
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. Prerequisite: For undergraduates, WMS 401.

WMS 597 Issues in Women's Studies: Variable Topics

1-3 hrs.
Group study of special issues in 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. Course open to graduate students.

WMS 598 Readings in Women's Studies

1-4 hrs.
Individual study project available to the advanced student by permission of faculty advisor with departmental approval of project application.
HAWORTH COLLEGE OF BUSINESS

The Haworth College of Business is committed to partnerships among students, employers, faculty, alumni, and the business community that advance the achievement of high-quality education. Such active partnerships challenge the foundation of our knowledge and skills and enhance our ability to change. Meeting these challenges requires an evolving combination of teaching, research, and service activities among partners.

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 which is, To provide excellent targeted graduate education and business seminars for constituent groups (primarily working professionals and international students) by the year 2004.

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 Permission to Take Graduate Classes (PTG) status are not eligible for enrollment in graduate business courses. Requests for exception to these enrollment policies must be submitted in writing to the Director of MBA Programs, Haworth College of Business, 2110 Schneider Hall.

Application Procedures

Individuals may obtain an application for graduate business degree programs in the Haworth College of Business through one of the following procedures:

1. Personal visit to the Haworth College of Business Office of Student Development, Room 2130 Schneider Hall on the University campus in Kalamazoo, Michigan.
2. Contacting the Admissions Office of Western Michigan University by (a) visiting the Office of Admissions and Orientation in Room 2240 Seibert Administration Building; (b) requesting an application for admission by writing to the Office of Admissions and Orientation, Graduate Admissions, 1201 Oliver Street, Western Michigan University, Kalamazoo, Michigan 49008-5120; or (c) telephoning the Admissions' Voice Enhanced Request Line, 1-800-400-4968.
3. Personal visit to the Grand Rapids Regional Office at 2333 East Beltline, S.E. in Grand Rapids or telephone the Regional Office, 1-616-771-9478, or a personal visit or telephone call to another Western Michigan University Regional Office in Battle Creek, Holland, Muskegon, Lansing, or St. Joseph, Michigan.
4. Electronic access via the Internet, with access to Western Michigan University's homepage at http://www.wmich.edu, selecting the "Graduate Programs" link and following the steps for an on-line application.
5. Applicants who are not U.S. citizens must contact, in writing, the Office of International Student Services, Room A411 Elsworth Hall, 1201 Oliver Street, Western Michigan University, Kalamazoo, Michigan 49008-5899. International applicants may also E-Mail the Office of International Student Services at oiss.info@wmich.edu, or may telephone the Office at 616-387-5865, or may reach the Office through the Internet at http://www.wmich.edu/oiss and follow the application procedures presented.

Appeals Process

An applicant who has been denied admission to a graduate program in the Haworth College of Business and is choosing to appeal that decision (or whose admission contains conditions that are being appealed) shall contact the Office of Student Development by telephone (616-387-5075) or by mail (Office of Student Development, Haworth College of Business, Western Michigan University, Kalamazoo, Michigan 49008-3899) and request a copy of the College's "Admission Appeal Policy" which provides guidance on the appeal process.

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.
Master of Business Administration

Office of Student Development, Room 2130, Schneider Hall

This professional degree program leading to the Master of Business Administration is designed to prepare graduate students to function effectively in administrative positions. This preparation emphasizes the development of the student's ability to make and execute decisions. The program of study is designed to provide the student with skills and knowledge in the areas of critical analysis, business operations, changing environments, professional development, and specialized professional interests. Students are challenged to develop judgment, discriminating capacity, knowledge, and understanding which will permit them to work effectively in administrative and other leadership roles. Under the guidance of the graduate faculty advisors of the Haworth College of Business, personal programming for the participant is provided.

Admission Requirements

Admission to the MBA Program is based on acceptable grade point average and GMAT scores, references, work experience and satisfactory completion and receipt, if applicable, of a graduate professional degree from an accredited university. GMAT information is available online at www.mbas. A work experience form or a detailed resume can be submitted to MBA Admissions, Office of Student Development. Further information is available on the HCOB website. Appeals or exceptions to the admission standards may be submitted to MBA Admissions, Office of Student Development.

1. To be eligible for admission to the MBA degree, a process managed by the Office of Student Development in the College, an applicant must meet the following criteria:
   a. A grade point average of 2.75 or higher for the last two years in an accredited, undergraduate university program.
   b. A minimum GMAT score of 530.
   c. A minimum verbal score of 24 on GMAT.
   d. A minimum quantitative score of 32 on GMAT.
   e. A minimum GMAT writing score of 3.5.
   f. A minimum full-time post-undergraduate degree professional work experience of 2 years or acceptable alternative for regular MBA admission.
   g. For Western Michigan University international program locations only: In addition to a through f, a review of academic accomplishment, professional business experience, and educational certification—accompanied (if necessary) by personal interviews—will provide the basis for judging a candidate's ability.

2. Applicants who are not U.S.A. residents (international students) may be required to demonstrate English language proficiency with a TOEFL score of not less than 550. An examination of a firm's mission, goals, and business practices and policies are affected by international, cultural, political, legal, social, and economic environments. Viewed from the perspective of corporate managers and entrepreneurs, this course provides a global foundation for other business work; for example, in accounting, information-management, finance, management, and marketing. Additionally, international culture skills required to conduct business successfully in a global environment will be examined. Written and oral reports will be incorporated to provide practical knowledge about intercultural business communication.

Bus 615 Global Business and Intercultural Communication 3 hrs.

This course introduces students to the concepts of social responsibility and ethics in strategic business settings. Coverage includes strategic business concepts and associated legal issues. An examination of a firm's mission, goals, and business strategy will be considered within an ethical and legal framework. 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 emphasis will be on understanding the conceptual tools to analyze behaviors in the context of business decision making.

Bus 616 Business Policy and the Social and Ethical Environment 3 hrs.

This course enables the student to understand the use of information technology as part of a business strategy. Issues surrounding information technology such as information and communications systems and services and enterprise-wide systems—traditional, networked, extended, and virtual—in organizations will be examined. The growing convergence of technologies—computer, video, and telecommunication—within structured information networks will also be examined. Students should gain knowledge about strategic issues involving information technology management rather than the development of specific computer skills.

Bus 699 Business Strategy 3 hrs.

An advanced examination of the tasks of formulating long-run strategy for the organization. Using strategic cases and/or simulations, the course includes methods of (1) developing opportunities from analyses of environmental and market trends, (2) understanding company strengths, weaknesses, and competencies, and (3) directing the integration of strategy with operating plans through formal and informal networks. This is an integrative capstone course designed to provide a total business perspective

Prerequisites: Completion of MBA Business Context and Functional Core courses.

Business Courses (BUS)

Open to Graduate Students Only. Enrollment in HCOB graduate business courses requires admission to the MBA or MS program or the consent of the Director of MBA Programs.

Bus 615 Global Business and Intercultural Communication 3 hrs.

This course enables the student to understand how business practices and policies are affected by international, cultural, political, legal, social, and economic environments. Viewed from the perspective of corporate managers and entrepreneurs, this course provides a global foundation for other business work; for example, in accounting, information-management, finance, management, and marketing. Additionally, international culture skills required to conduct business successfully in a global environment will be examined. Written and oral reports will be incorporated to provide practical knowledge about intercultural business communication.

Bus 616 Business Policy and the Social and Ethical Environment 3 hrs.

This course introduces students to the concepts of social responsibility and ethics in strategic business settings. Coverage includes strategic business concepts and associated legal issues. An examination of a firm's mission, goals, and business strategy will be considered within an ethical and legal framework. 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 emphasis will be on understanding the conceptual tools to analyze behaviors in the context of business decision making.

Bus 618 Information Technology Management 3 hrs.

This course enables the student to understand the use of information technology as part of a business strategy. Issues surrounding information technology such as information and communications systems and services and enterprise-wide systems—traditional, networked, extended, and virtual—in organizations will be examined. The growing convergence of technologies—computer, video, and telecommunication—within structured information networks will also be examined. Students should gain knowledge about strategic issues involving information technology management rather than the development of specific computer skills.

Bus 699 Business Strategy 3 hrs.

An advanced examination of the tasks of formulating long-run strategy for the organization. Using strategic cases and/or simulations, the course includes methods of (1) developing opportunities from analyses of environmental and market trends, (2) understanding company strengths, weaknesses, and competencies, and (3) directing the integration of strategy with operating plans through formal and informal networks. This is an integrative capstone course designed to provide a total business perspective

Prerequisites: Completion of MBA Business Context and Functional Core courses.
Admissions

Admission Requirements

Admission to the program is obtained through the Master of Science in Accountancy Committee of the Department of Accountancy.

1. To be eligible for admission to the Master of Science in Accountancy (MSA) program, an applicant must meet one of the following criteria, which are managed by the Office of Student Development in the College:
   a. A GMAT score of 600 or higher with a grade point average for the last two years in an accredited undergraduate university program of 2.5 or higher.
   b. A GMAT score of 500 or higher with a grade point average for the last two years in an accredited undergraduate degree program of 3.0 or higher; or
   c. An applicant whose native language is not English must achieve a minimum score on the Test of English as a Foreign Language (TOEFL) of 230 or 550.
   d. Each applicant must provide evidence of proficiency in the required basic skills prior to formal graduate program admission. Basic skills are defined as computer literacy, quantitative analysis, statistics, and writing. In the writing skill requirement, the course work will be selected from the areas of financial accounting, cost and managerial accounting, business and to other disciplines is also stressed.

Knowledge and understanding of the theory, literature, and professional practice of accounting are developed. The student's understanding of the relationship of accounting to other fields in business and to other disciplines is also stressed.

Course work will be selected from the areas of financial accounting, cost and managerial accounting, auditing, taxation, not-for-profit, systems, and accounting theory.

Advisors:

Sheldon Langsam, Room 3160, Schneider Hall
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Jack M. Ruhl, Room 3162, Schneider Hall
William C. Morris, Room 3162, Schneider Hall
Jack M. Ruhl, Room 3162, Schneider Hall
Kathleen Sinning, Room 3182, Schneider Hall

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, of which at least 12 hours must be at the 600-level:

ACTY 511 Advanced Accounting
ACTY 513 Advanced Accounting Information Systems
ACTY 514 Governmental and Nonprofit Accounting
ACTY 522 Cost Accounting—Concepts and Practice
ACTY 524 Advanced Tax Accounting
ACTY 610 Financial Accounting and Reporting
ACTY 617 Attention and Assurance Services
ACTY 621 International Accounting
ACTY 622 Seminar in Management Accounting
ACTY 624 Business Tax Planning
ACTY 627 Accounting Fraud
ACTY 642 Special Topics in Accountancy

Each individual program must include at least twenty-one hours of 600- or 700-level courses and must have prior approval of a department advisor. In addition to the major requirements, the student must elect a minimum of nine hours of 600-level courses outside the Department of Accountancy. If a student has not had an undergraduate capstone course, the MGMT 699, Business Strategy, must be selected as one of the non-accounting courses.

The overall 150-hour program must include at least 99 hours outside the Department of Accountancy.

To summarize the requirements:

1. Minimum of 30 hours of graduate course work.
2. Minimum of 15 hours of graduate course work in accounting, of which at least 12 must be at the 600-level.
3. Minimum of 9 hours of non-accounting graduate courses.
4. Minimum of 21 hours at the 600-level or above.
5. Minimum of 39 semester hours of accounting in graduate and undergraduate course work.

An applicant must meet one of the following criteria, which are managed by the Office of Student Development in the College:

a. 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 AASCB accredited business program or (b) has satisfactorily completed a college level undergraduate mathematics course (pre-calculus or calculus).
ACTY 598 Readings in Accounting 1-4 hrs.
Directed individual study of topics not otherwise treated in departmental courses. Prerequisite: Written consent of instructor.

Open to Graduate Students Only. Enrollment in HCOB graduate business courses requires admission to the MBA or MSA program or the consent of the Director of Graduate Business Programs.

ACTY 601 Accountancy 3 hrs.
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 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 cannot receive credit for both ACTY 601 and equivalent courses. Prerequisite: Admission to the MBA or MSA program or consent of the Chair of the Department.

ACTY 610 Financial Accounting and Reporting 3 hrs.
This course examines the pronouncements of authoritative, regulatory organizations, including the American Institute of Certified Public Accountants, the Securities and Exchange Commission, 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. Prerequisite: ACTY 311 or consent of the Chair of the Department or the Director of the MBA Program.

ACTY 611 Managerial Accounting 3 hrs.
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 322 or its equivalent. Prerequisite: ACTY 601 or equivalent.

ACTY 617 Attestation and Assurance Services 3 hrs.
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.

ACTY 621 International Accounting 3 hrs.
The 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. Prerequisite: ACTY 611 or consent of the Chair of the Department.

ACTY 622 Seminar in Management Accounting 3 hrs.
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. Prerequisite: ACTY 322 or ACTY 611.

ACTY 624 Business Tax Planning 3 hrs.
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. Tax problems of corporate acquisitions, reorganizations, liquidations, estates and trusts, partnerships, and capital gains will also be included. Case studies will be used, and research in taxation will be emphasized. The course will be conducted in a seminar setting with group discussion accentuated. Prerequisite: ACTY 324.

ACTY 625 International Taxation 3 hrs.
This course is a study of the concepts and principles that apply to the United States taxation of foreign income earned by U.S. taxpayers and U.S. income earned by foreign taxpayers. Students will learn to analyze and apply fundamental international tax concepts to situations likely to be encountered by businesses and individuals. Prerequisite: ACTY 324.

ACTY 627 Accounting Fraud 3 hrs.
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 specific sequence of content will begin with an introduction to the problem, and then how fraud can be prevented. The course will then proceed to the various methodologies for detection and investigation. Concluding materials will cover resolution attributes and related matters. Prerequisites: ACTY 211 or ACTY 611.

ACTY 642 Selected Topics in Accountancy 3 hrs.
The advanced study of selected topics in accountancy. Course varies according to topic. Prerequisites: MBA admission or consent of the Chair of the Department.

Open to Graduate Students Only—Please refer to The Graduate College section for course descriptions.

ACTY 700 Master’s Thesis 6 hrs.

ACTY 710 Independent Research 2-6 hrs.

ACTY 712 Professional Field Experience 2-12 hrs.

BUSINESS INFORMATION SYSTEMS

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Nancy M. Schullery
Andrew S. Targowski
Mike Tam

Business Communication Courses (BCM)

Open to Upperclass and Graduate Students

BCM 596 Independent Study 1-4 hrs.
A directed independent project in an area of administrative systems or business communication. Prerequisite: Approved application required.

BCM 598 Readings 1-4 hrs.
A series of direct readings in the area of administrative systems or business communication. Prerequisite: Approved application required.

Computer Information Systems Courses (CIS)

Open to Upperclass and Graduate Students

CIS 555 Topics in Computer Information Systems 3 hrs.
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. Prerequisite: CIS 360.

CIS 596 Independent Study 1-4 hrs.
A directed independent project in the area of computer information systems. Prerequisite: Approved application required.

CIS 598 Readings 1-4 hrs.
A series of direct readings in the area of computer information systems. Prerequisite: Approved application required.

Open to Graduate Students Only. Enrollment in HCOB graduate business courses requires admission to the MBA or MSA program or the consent of the Director of Graduate Business Programs.

CIS 600 Seminar in Computer Information Systems 3-4 hrs.
Intensive problem solving in the area of computer information systems. May be repeated for credit.

CIS 620 ERP System Configuration 3 hrs.
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 implement-
This course provides students with an understanding of how to accurately evaluate recommendations about CIS 260, 261, and 360. Emphasizes the administrative aspects of managing data resources in organization. Orientation of the course is towards developing specific skills in MBA students that will empower them to administer challenges of using Data Base Management Systems effectively. Prerequisites: CIS 260, 261, and 360.

CIS 662 Managing the System Development Project 3 hrs. Focuses on project management while reviewing and reinforcing student's understanding of system development methodology. Major emphasis of course will be managing those projects which involved SDL methodology. Prerequisites: CIS 260, 261, and 360.

CIS 664 Knowledge Management 3 hrs. Objectives of course are to familiarize students with artificial intelligence and its applications in knowledge-based systems and knowledge management, and learn how this information technology can be applied to solve common business problems. Designed to show how such systems can assist managers in setting and achieving organizational objectives effectively and efficiently. Prerequisites: CIS 260 and 360.

CIS 666 Managing Data Communications 3 hrs. This course provides students with a managerial perspective of data communication and computer networks. The intent of this course is to provide students with the necessary skills to accurately evaluate recommendations about data communication needs and manage the data communication activities of a business organization. Prerequisites: CIS 360.

CIS 674 Information Systems Planning 3 hrs. Course applies principles of managerial planning to information systems. Covers strategic, tactical, and operational planning of IS, with special emphasis on linkage between strategic plans of the organization as whole and those of IS. Prerequisites: CIS 260, 261, and 360.

Open to Graduate Students Only—Please refer to The Graduate College section for course descriptions.

CIS 710 Independent Research 2-6 hrs.

CIS 712 Professional Field Experience 2-12 hrs.

FINANCE AND COMMERCIAL LAW

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Finance Area

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Craig Peterson
Ajay Samart
Tim F. Scheu
Judith Swisher
Devrim Yaman

Finance Area Courses (FIN)

Open to Graduate Students Only. Enrollment in HCOB graduate business courses requires admission to the MBA or MS programs or the consent of the Director of Graduate Business Programs.

FIN 602 Corporate Finance 3 hrs. This course will introduce students to financial principles and techniques which are essential for understanding the financial management function of a firm.

FIN 612 Financial Management 3 hrs. This course will focus on a contemporary study of issues and problems in financial management. Issues 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. Prerequisite: FIN 602 or equivalent.

FIN 619 Financial Markets and Institutions 3 hrs. 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. Prerequisite: FIN 612.

FIN 622 Financial Restructuring 3 hrs. 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. Prerequisites: FIN 612.

FIN 625 Financial Strategy 3 hrs. 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. Prerequisites: FIN 612.

FINANCE AND COMMERCIAL LAW

FIN 642 International Finance 3 hrs. 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. Prerequisites: FIN 612.

FIN 645 Computer Applications in Finance 3 hrs. 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. Prerequisite: FIN 612.

FIN 654 Investment Analysis and Management 3 hrs. 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. Not open to students with credit earned in FIN 452 or its equivalent. Prerequisite: FIN 612.

FIN 655 Portfolio Theory and Analysis 3 hrs. A study of the theoretical structures (models and their applications). Theoretical concepts are used to study model development and evaluate competing models. Extensive use of market-based data for computer applications of models such as Markowitz analysis, single and multiple index models, simplified techniques, duration and convexity. Prerequisite: FIN 612.

FIN 662 Health Care Financial Management 3 hrs. This course deals with advanced financial management concepts affecting health care institutions. Working-capital management, capital-budgeting, and Medicare reimbursement programs are examined. Prerequisite: FIN 520 or equivalent.

FIN 691 Seminar in Finance 3 hrs. 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. Prerequisite: FIN 612.

FIN 698 Readings and Research in Finance FCL 689 Readings and Research in Finance and Commercial Law 1-3 hrs. Directed individual study of bodies of knowledge not otherwise treated in departmental courses. Prerequisite: Written consent of department chair.

FIN 700 Master's Thesis 6 hrs.
An analysis of the organization and structure of various health care entities. The Medicare concepts such as respondent superior, good Samaritan laws, informed consent, and confidentiality. Organizations in federal legal systems that affect the health care sector. The cases, regulations and statutes in state and national laws affecting foreign investment, licensing, and trade are reviewed. International aspects of business of the laws 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.  

**Law Area Courses (LAW)**

Open to Graduate Students Only. Enrollment in HCOB graduate business courses requires admission to the MBA or MSA program or the consent of the Director of Graduate Business Programs.  

**LAW 604 Legal, Regulatory, and Political Aspects of Business**  
3 hrs.  
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.  

**LAW 681 Legal and Ethical Issues for Nonprofit Organizations**  
2 hrs.  
This course will provide students with the basic understanding and practical applications of the legal framework pertaining to the establishment, operation, and funding of nonprofit organizations. It will also examine ethical behavior in the nonprofit world, provide examples of questionable conduct and unethical behavior, and offer solutions to ethical dilemmas. Not available for credit toward graduate business programs.  

**LAW 682 Managerial Aspects of Labor Law**  
3 hrs.  
Provides an overview of the background and consequences for business of the laws governing collective relationships between employers and employees and their representatives. Special emphasis is given to the interpretation and evaluation of current legislation. Prerequisite: LAW 604.  

**LAW 684 International Business Law**  
3 hrs.  
Private international law and selected regional and national laws affecting foreign investment, licensing, and trade are reviewed. International sales, financing, transportation, intellectual property, and taxation topics are discussed.  

**LAW 686 Legal and Regulatory Issues in Marketing**  
3 hrs.  
This course examines the legal, regulatory, and political issues which affect marketing. The course offers legal and regulatory information that parallels and affects marketing decision making.  

**LAW 688 Health Law Administration**  
3 hrs.  
The course provides a study of the law as it relates to the delivery of health care services. The cases, regulations and statutes in state and federal legal systems that affect the health care professional and institutions are examined. Legal concepts such as respondent superior, good Samaritan laws, informed consent, and confidentiality will be explored. Prerequisite: LAW 380 or 604.  

**LAW 689 Legal Problems of Health Care Organizations**  
3 hrs.  
An analysis of the organization and structure of various health care entities. The Medicare reimbursement program, medical malpractice and risk avoidance concepts will be discussed. Laws affecting the maintenance and disclosure of medical records and organizational certificate of needs will be examined. Prerequisite: LAW 688 or consent of department chair.  

**LAW 698 Readings and Research in Law**  
1-3 hrs.  
Directed individual study of bodies of knowledge not otherwise treated in departmental courses. Prerequisite: Written consent of department chair.  

Open to Graduate Students Only—Please refer to The Graduate College section for course descriptions.  

**LAW 700 Master's Thesis**  
6 hrs.  

**LAW 710 Independent Research**  
2-6 hrs.  

**LAW 712 Professional Field Experience**  
2-12 hrs.  

**General Area Courses (FCL)**

Open to Upperclass and Graduate Students  
FCL 594 International Business Seminar 1-6 hrs.  
A foreign study seminar designed for qualified and capable undergraduate students, graduate students, teachers, and business executives. The seminar introduces participants to a first-hand knowledge of business operations abroad through on-site inspection of foreign manufacturing, marketing, financial, and governmental organization, supplemented by coordinated faculty lectures and assigned readings. Undergraduate or graduate credit of up to six hours, in one or more of the following departments upon consent of department chair: Accountancy, Business Information Systems, Finance and Commercial Law, Management, or Marketing.  

Open to Graduate Students Only. Enrollment in HCOB graduate business courses requires admission to the MBA or MSA program or the consent of the Director of Graduate Business Programs.  

**FCL 600 Seminar in Business**  
3 hrs.  
Intensive problem solving in the primary business fields. Consent of instructor required. May be repeated for credit.  

**Management Courses (MGMT)**

Open to Graduate Students Only. Enrollment in HCOB graduate business courses requires admission to the MBA or MSA program or the consent of the Director of Graduate Business Programs.  

**MGMT 600 Seminar in Management (Topic)**  
3 hrs.  
Intensive problem solving in advanced management topics, including the preparation of a major staff report. Repeatable for different topics.  

**MGMT 610 International Management**  
3 hrs.  
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. Prerequisite: BUS 615.  

**MGMT 614 Business Process Management**  
3 hrs.  
Improving business processes is fundamental to competitive organizations and their significant supply chain partners. Students will be introduced to the increasingly integrated areas of purchasing, operations, and logistics and given an opportunity to examine the fundamental processes that shape business functions. Students will either develop and simulate new systems or improve existing systems within the supply chain of an organization. This course is cross-listed with MKTG 614, Business Process Management.  

**MGMT 617 Managing Human Resources and Behavior**  
3 hrs.  
Work is a dominant theme in the lives of most people. The way people are managed and relate to one another affects the quality of their lives and the effectiveness of their organizations. Understanding individual differences, sources of behavior, choices people make, and how issues come together in groups and organizations is imperative for today's managers. A clear understanding of how diverse managerial approaches positively impact the performance of a diverse workforce is of growing importance. The course instructional technology ranges from lecture to self-directed work. There is, however, an emphasis on participative and experiential learning.  

**MGMT 620 ERP System Configuration**  
3 hrs.  
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 role of the enterprise resource planning system in the organization.
understanding of the nature of these processes. Management issues associated with implement-
ing these packages are also explored. Cross-
listed with IS 620. Prerequisite: ACTY 611, BUS 618, MGMT/ MKTG 617.

MGMT 632 Incentive Compensation
3 hrs.
Incentive compensation covers pay related incen-
tives useful for implementing business strategies. Topics covered include executive compensation (e.g. stock options), special group incentives, gain sharing, and ESOP's. Students are expected to develop an incentive plan for an existing organiza-
tion.

MGMT 641 Business Venturing
3 hrs.
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. Prerequisite: Completion of MBA core or consent of the HCOB Director of Graduate Business Programs.

MGMT 650 Managing Change
3 hrs.
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.

MGMT 652 Strategic Human Resource Management
3 hrs.
The role of HRM in generating sustained competi-
tive advantage is examined. Theory, policies, and practices that guide effective management of diverse human resources are explored. Strategic choices regarding staffing, evaluation, rewards, dismissal, and employment relations in a changing work environment are discussed. Prerequi-
site: Admission to the MBA program or consent of the HCOB Director of Graduate Business Programs.

MGMT 654 Management History and Thought
3 hrs.
A study of the major management theories and execu-
tives and their contributions to the field of management from the start of the twentieth century to date, with primary emphasis on the years before 1980. Covers the contributions of such theorists as Frederick Taylor, Mary Parker Follett, Douglas McGregor, Theodore Levitt, and Peter Drucker, as well as of executives such as Henry Ford, Alfred Sloan, Chester Barnard, and Thomas J. Watson, Jr. Also includes a summary of the major labor acts such as the Wagner Act (1935) and how they influenced the development of management practice and labor relations in the United States. Prerequisite: MGMT 617.

MGMT 655 Organization Theory
3 hrs.
Theories, models, and applications relevant to the structure of complex organizations and their subunits. Emphasis on alternative designs, their causes and consequences.

MGMT 658 International Human Resource Management
3 hrs.
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.

MGMT 661 Introduction to Management Science
3 hrs.
A systematic study and application of the scient-
ific method to management decision-making, introduction to techniques of linear programming, inventory theory, scheduling theory, and other optimizing decision models. For students who will take more specialized courses as well as those in other disciplines desiring a limited exposure to the field. Prerequisite: MATH 216 or equivalent.

MGMT 680 Management of Innovation and Technology (MOIT)
3 hrs.
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 technol-
ogy 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.

MGMT 685 Quality Management Strategies
3 hrs.
The purpose of this course is to investigate stra-
tegic quality management issues as they apply to the management of businesses in today's competi-
tive environment where customer satisfaction and continuous improvement have become requirements. Topics covered will include product and process quality, leadership, benchmarking, employee participation and empowerment, qual-
ity function deployment, and process innova-
tion. Students will be assigned materials from the latest textbooks and journals. Practices and application will result from participation in group projects conducted in local firms. Prerequisites: MGMT 614 and MKTG 614.

MGMT 695 Advanced Independent Study
3 hrs.
Independent study of current trends and advanced problems in the organization and management of complex organizations. May be repeated for credit. Prerequisite: Consent of department chairman.

MGMT 696 Policy Formulation and Administration
3 hrs.
This course focuses on the job of the general manager in making short and long run stra-
ty. Using cases drawn from actual situations, the course develops ways of (1) perceiving specific opportunities from an analysis of evolving environmental trends, (2) understanding company strengths and (3) integrating strengths and opportunities in setting strategy and detailed operating plans. This is an integrative capstone course in that the tools and skills learned in other core courses are needed to develop practical, company-wide general management decisions. Prerequisite: Completion of MBA core courses.

Open to Graduate Students Only.—Please refer to The Graduate College section for course descriptions.

MGMT 700 Master's Thesis
6 hrs.

MGMT 710 Independent Research
2-6 hrs.
MGMT 712 Professional Field Experience
2-12 hrs.

MARKETING

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Marketing Courses (MKTG)

Open to Graduate Students Only. Enrollment in HCOB graduate business courses requires admission to the MBA or MSA program or the consent of the Director of Graduate Business Programs.

MKTG 613 Customer-Driven Marketing Management
3 hrs.
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, imple-
mentation, and evaluating customer-driven market-
ing strategies to respond effectively to complex global, cultural, technological, competitive, and other market or environmental factors.

MKTG 614 Business Process Management
3 hrs.
Improving business processes is fundamental to competitive organizations and their sig-
nificant supply chain partners. Students will be introduced to the increasingly integrated areas of purchasing, operations, and logistics and given an opportunity to examine the fundamental pro-
cesses that shape business functions. Students will either develop and simulate new systems or improve existing systems within the supply chain of an organization. This course is cross-listed with MGMT 614, Business Process Management.

MKTG 661 Healthcare Marketing
3 hrs.
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, key point and boundary analyses for healthcare services.

MKTG 663 Electronic Marketing
3 hrs.
Electronic marketing links customers directly with companies, suppliers, and other participants for the development and delivery of products and services. This course examines electronic market-
ing 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 plat-
forms. Prerequisites: BUS 618, MKTG 615.
MKTG 671 Applied Marketing Research
3 hrs.
Applications of marketing research methods for marketing management using a variety of analytical techniques. Required for all MBA marketing concentrations; may be waived for those having MKTG 471, or its equivalent, with a grade of "B" or better.

MKTG 672 Distribution Strategy
3 hrs.
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. Prerequisite: MKTG 613.

MKTG 673 New Product Management
3 hrs.
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. Prerequisite: MKTG 613.

MKTG 674 Integrated Marketing Communications Strategy
3 hrs.
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. Prerequisite: MKTG 613.

MKTG 675 Services Marketing
3 hrs.
The study of services marketing with an emphasis on service quality and customer satisfaction. Topics will include the nature and environment of services, customer expectations and satisfaction, TQM, competitive benchmarking, service quality measurement and gap analysis, relationship marketing, and strategy planning for services.

MKTG 676 Multinational Marketing Management
3 hrs.
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. [Not recommended for students who have completed a recent undergraduate course in international marketing.]
Prerequisites: BUS 615 and MKTG 613.

MKTG 677 Buyer Behavior
3 hrs.
This course presents the theoretical and practical foundations of consumer and organizational behavior from a managerial perspective. Student will develop an understanding of why consumers and organization 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. Prerequisite: MKTG 613.

MKTG 678 Special Topics in Marketing
3 hrs.
Critical examination of advanced topics within the marketing discipline. The course topic will be indicated in the student record. Repeatable for different topics. Prerequisite: MKTG 613.

MKTG 679 Market Planning and Strategy
3 hrs.
Emphasis on developing comprehensive consumer-driven marketing strategies and plans within dynamic competitive environments. Experiential application of advanced marketing concepts and techniques to marketing problem-solving situations. Prerequisite: MKTG 613.

MKTG 680 Global Sourcing and Logistics
3 hrs.
This course will examine concepts in international purchasing and logistics to provide an in-depth understanding of the international supply chain. This course will examine how sourcing and logistics activities change and become more complex in the global environment. These aspects will be discussed in terms of opportunities, challenges and changing customer requirements presented by trading blocs, emerging markets and developing countries. Prerequisite: BUS 615.

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MILITARY SCIENCE

Military Science is an undergraduate program only. Please refer to the 2003—2005 Undergraduate Catalog for more information.
The Ph.D. in Educational Leadership is targeted toward professionals working in the areas of K-12, Higher Education, Career Technical Education, or other environments engaged in education or adult learning. It is a college-wide degree, administered principally by the faculty unit(s) offering the predominance of the core courses in a topical "concentration." At present, the degree program has four topical concentrations, three principally administered by the Educational Leadership faculty unit in the Department of Teaching, Learning, and Leadership and one administered principally by the Career and Technical Education faculty unit in the Department of Family and Consumer Sciences in collaboration with the Educational Leadership faculty unit. The four concentrations are 1) Higher Education Leadership, 2) K—12 Leadership, 3) Organizational Analysis, and 4) Career and Technical Education. The program requirements specific to each concentration are listed below.

Key program goals include preparing individuals to become transformation leaders, ready to help educational or other institutions 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, including:

1. Bachelor's degree from an accredited institution, indicated on an official transcript.
2. For students who have completed at least twenty 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
   • Score on the GRE General Test
   • Graduate Application
   • Two official transcripts from each institution attended since high school
   • Autobiographical Statement that shows a clear and complete statement of that person's professional goals, and how these goals relate to the doctoral program

All required forms will be available from the Department of Teaching, Learning, and Leadership's website http://www.wmich.edu/tll/docinfo.htm. Each student 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 Leadership Unit. 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 accepted in any given year will depend upon the quality of individual applicants, as well as available resources to support the program.

HIGHER EDUCATION LEADERSHIP CONCENTRATION
The Higher Education Leadership concentration is designed to provide a terminal degree for administrators, faculty, and others working within institutions of higher education or other adult learning environments and/or those aspiring to work within such institutions.

Students must complete a minimum of 42 graduate credits at Western Michigan University (30 credit hours of coursework 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.

Leadership Core (9 hrs.)
EDLD 602 Introduction to Leadership (3 hrs.)
EDLD 606 Systems Thinking (3 hrs.)
EDLD 609 Theories of Leadership (3 hrs.)

Professional Inquiry, Research, and Dissertation Core (33 hrs.)
Professional Inquiry
EDLD 686 Doctoral Studies Seminar (3 hrs.)
EDLD 712 Professional Field Experience Seminar (3 hrs.)
Research Methods
EDLD 712 Professional Field Experience (3 hrs.)
Dissertation
EDLD 655 Research Design (3 hrs.)
EDLD 656 Dissertation Seminar (3 hrs.)
EDLD 730 Doctoral Dissertation (12 hrs.)

Higher Education Core (24 hrs.)
Required Courses
EDLD 687 Governance and Financing in Universities and Community Colleges (3 hrs.)
EDLD 688 Higher Education and the New Technological Frontier (3 hrs.)
EDLD 689 University and Community College Topical Seminar (3 hrs.)
CECP 625 Legal Issues in Higher Education (3 hrs.)

Elective Courses
Choose 12 hrs. from following list, or equivalents approved by advisor
EDLD 665 Personnel Administration
EDLD 673 Supervision

Special Interest Cognate and Electives (24 hrs.)

(A) Additional Requirements for Endorsement
- Central Office Administrator (COA)
  EDLD 683 The Superintendency (3 hrs.)
- Chief School Business Official (CSBO)
  EDLD 663 Personnel Administration (3 hrs.)
- Computer Applications in Education
  EDLD 662 Computer Applications in Education (3 hrs.)
- School Facilities Planning (3 hrs.)
  EDLD 685 School Facilities Planning (3 hrs.)
- Superintendents' (SUPT)
  EDLD 663 Personnel Administration (3 hrs.)
- EDLD 680 The Superintendency (3 hrs.)
- Computer Application in Administration (3 hrs.)
  EDLD 682 Computer Application in Administration (3 hrs.)
- EDLD 665 School Facilities Planning (3 hrs.)

(B) Research Methods
Students could take additional methods courses in qualitative and/or quantitative research, such as EMR 641, 642, 650, 652, 638, 665, or other methods courses.

(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.

Leadership Core (9 hrs.)
EDLD 606 Introduction to Leadership (3 hrs.)
EDLD 608 Systems Thinking (3 hrs.)
EDLD 609 Theories of Leadership (3 hrs.)

Professional Inquiry, Research, and Dissertation Core (33 hrs.)
Professional Inquiry
EDLD 688 Doctoral Studies Seminar (3 hrs.)
EDLD 712 Professional Field Experience Seminar (3 hrs.)
EDLD 712 Professional Field Experience (3 hrs.)
Research Methods
EMR 645 Elementary Statistics (3 hrs.)
EMR 648 Qualitative Methods (3 hrs.)
EMR 655 Research Design (3 hrs.)
 Dissertation
EDLD 695 Dissertation Seminar (3 hrs.)
EDLD 730 Doctoral Dissertation (12 hrs.)

Organizational Analysis Core (24 hrs.)
Required Courses
EDLD 681 Policy Development (3 hrs.)
EDRD 642 Program Evaluation (3 hrs.)
EDRD 643 Personnel Evaluation (3 hrs.)
EMR 650 Survey Research (3 hrs.)
Elective Courses
Choose 12 hrs. from following list, or equivalents approved by advisor
EDRD 663 Personnel Administration (3 hrs.)
EDLD 673 Supervision (3 hrs.)
EDLD 698 Readings in EDLD (3 hrs.)
EMR 641 Measurement Techniques in Education (3 hrs.)
EMR 658 Qualitative Research Practicum (3 hrs.)
EMR 665 General Linear Modeling (3 hrs.)
CECP 641 Fundamentals of Needs Analysis (3 hrs.)
CECP 642 Evaluation of HRD Transfer and Impact (3 hrs.)
CECP 644 Learning and Organizational Effectiveness (3 hrs.)
PADM 608 Organizational Theory and Behavior (3 hrs.)

MGMT 650 Managing Change (3 hrs.)
GRAD 711 Readings in Doctoral Specialization (3 hrs.)

Special Interest Cognate and Electives (24 hrs.)
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.

CAREER AND TECHNICAL EDUCATION CONCENTRATION

The Career and Technical Education 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.

Leadership Core (9 hrs.)
EDLD 602 Introduction to Leadership (3 hrs.)
EDLD 606 Systems Thinking (3 hrs.)
EDLD 609 Theories of Leadership (3 hrs.)

Professional Inquiry, Research, and Dissertation Core (33 hrs.)
Professional Inquiry
EDLD 688 Doctoral Studies Seminar (3 hrs.)
EDLD 698 Doctoral Studies Seminar (3 hrs.)
EDLD 698 Doctoral Field Experience Seminar (3 hrs.)
EDLD 712 Professional Field Experience (3 hrs.)
Research Methods
EMR 645 Elementary Statistics (3 hrs.)
EMR 648 Qualitative Methods (3 hrs.)
EMR 655 Research Design (3 hrs.)
Dissertation
EDLD 665 Dissertation Seminar (3 hrs.)
EDLD 730 Doctoral Dissertation (12 hrs.)

CTE Core (24 hrs.)
CTE 604 Administration and Supervision of CTE (3 hrs.)
CTE 616 Occupational Selection and Training (3 hrs.)
CTE 643 Measurement and Evaluation in CTE (3 hrs.)
CTE 645 Organization of Employment and Training Systems (3 hrs.)
CTE 646 Leadership Development in CTE (6 hrs.)
CTE 648 Adult Education in CTE (3 hrs.)
CTE 650 Business/Industry/Education Work-based Learning (3 hrs.)

Specialty Cognates (minimum of 12 hrs.)
Students may choose one of the following four course areas based upon career goals in CTE.

(A) Curriculum
ED 602 School Curriculum (3 hrs.)
ED 628 Curriculum Theory (3 hrs.)
EDLD 664 Curriculum Development (3 hrs.)

(B) Educational Leadership
EMR 642 Program Evaluation (3 hrs.)
EDLD 663 Personnel Administration (3 hrs.)
EDLD 667 The Principalship (3 hrs.)
EDLD 672 School Finance (3 hrs.)

(C) Instruction
Focuses on further technical knowledge in particular CTE discipline, (e.g., Business or Marketing Education, Family and Consumer Sciences, Industrial Technology, Information Technology). May include graduate courses from outside College of Education intended to enhance technical content needed as a CTE instructor, in an adult, secondary, or post-secondary institution.
The Doctor of Philosophy in Evaluation is a response to society's growing need for Ph.D.-level advisor approval addressing educational leader sciences, and health and human services to courses and other learning experiences. The CTE 612 Studies in Technology (1-4 hrs.) and, in general, maintain accountability. CTE 512 Principles in CTE (3 hrs.) CTE 617 Seminar in Education (1-6 hrs.) CTE 513 Technical Education Methods (3 hrs.) CTE 615 Grant Writing in CTE (1-3 hrs.) CTE 542 Advanced Curriculum Development (3 hrs.) CTE 543 Work-site Based Education Programs (3 hrs.) CTE 612 Studies in Technology (1-4 hrs.) CTE 615 Trends and Development in CTE (2 hrs.) CTE 617 Seminar in Education (1-6 hrs.) Other elective courses can be substituted with advisor approval addressing educational leadership, evaluation, measurement, or research design.

Doctor of Philosophy in Evaluation

The Doctor of Philosophy in Evaluation is a collaborative effort of four colleges—Arts and Sciences, Education, Engineering and Applied Sciences, and Health and Human Services to address society's growing need for Ph.D.-level evaluation expertise who can serve effectively in a variety of disciplines. Society's organizations need evaluation 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.

Graduating students will receive their degree from one of the participating colleges, usually the one where their major advisor resides. Each student will have an advisory committee that will tailor that student's program of study to meet that student's 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 improvement.

Admission Requirements

1. To go to the WMU Admissions Office website and request an admission packet for the program. Alternatively, you can call the office (269-387-2003) or e-mail them, tell them you want to apply for the new interdisciplinary Ph.D. in Evaluation, and ask them to send you the self-managed application package.
2. On the application for the program of study desired,” write “IEV” (this is the code for Interdisciplinary Evaluation). Otherwise, just follow all instructions. If you have questions, please direct them to the Admissions Office.
3. The admissions application packet includes instructions for sending materials to two locations: The Admissions Office and the program. The application going to the Admissions Office should be completed as stated in the instructions. Students who are currently at WMU do NOT need to send in transcripts, or GRE scores—if they are already on file.
4. The application form coming to the department should be addressed to: Ph.D. in Evaluation (Interdisciplinary), The Evaluation Center, Western Michigan University, Kalamazoo, MI 49008-5237. Students must indicate any degree(s) completed (official transcripts should go in the packet to the Admissions Office)

5. The departmental application form should contain:
   - A completed WMU application form (included in the self-managed application packet)
   - A completed program application form (available in Word or PDF)
   - Photographs or unofficial copies of graduate and undergraduate transcripts—these must indicate any degrees completed (official transcripts should go in the packet to the Admissions Office)
   - A current curriculum vitae
   - GRE general scores (if you have taken the GRE in the past and still have an official copy of your scores, you may submit that; scores are not less than 5 years old). Please note that there is no waiver of this requirement even if you are applying for a graduate degree from a U.S. university. There is no minimum GRE score required; however, entry into the program will be competitive and will be based partially on GRE scores. If you feel that one or more of your scores is not an adequate gauge of your ability, please submit additional supporting evidence (e.g., a writing sample or technical report).
   - Please see the ETS Website for information about scheduling and taking the GRE.
   - A 1,000-word essay outlining your career goals and/or your interest in the program, including any preferences for advisors you would particularly like to work with.
   - A recent writing sample on which you are the sole or first author (e.g., a technical paper, a publishable paper, or a class project). It is helpful if this provides additional evidence of the abilities we use to judge applications (see the list of selection criteria above)
   - Three letters of recommendation from academic and professional sources (preferably in sealed envelopes with the recommendation writer's signature across the envelope seal; please ask your referees to address the selection criteria above)
   - If you are seeking financial support, include a completed doctoral associateship application form and/or a one-page application letter for a research assistantship (please indicate your areas of interest, skills, and knowledge; and availability for work)

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 coursework 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).
2. Passed both written and oral comprehensive exams (covering the competencies listed on this page).
3. Completed successfully 12 hours of doctoral dissertation study, plus an optional 3 hours of independent study in preparation for oral qualifying exams.
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 methods tools for this program: needs assessment tools and research tools. Students will fulfill this requirement by completing an entire evaluation of a program, policy, system, organization, intervention, or specification agreed to with their advisory committee. This requirement will usually be fulfilled as part of the practical experience; however, other options are possible in exceptional cases.)
6. Completed with the permission of the Program director, or the program will be competitive and will be based partially on GRE scores. If you feel that one or more of your scores is not an adequate gauge of your ability, please submit additional supporting evidence (e.g., a writing sample or technical report).
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, measurement, and practical 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. scoring vs. sorting, subjective vs. objective criteria)

• 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 (pricing, 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 needs, appropriate communication strategies for different audiences, report writing and laying out, oral presentation skills, linking evaluation to decision making, maximizing evaluation utilization)

• Metaevaluation and Evaluation Standards (use of professional standards and checklists for evaluation and metaevaluation)

• History and Nature of the Evaluation Profession (the roots of the evaluation profession, its development to date, future directions)
COUNSELOR EDUCATION AND COUNSELING PSYCHOLOGY

Dr. Joseph R. Morris, Chair
Main Office: 3102 Sangren Hall
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Lonne E. Duncan
John S. Geisler
Arlen R. Hovestadt
Suzanne M. Hedstrom
Alan J. Hovestadt
Philip D. Johnson
Norman M. Kiracofe
Kathy A. McDonnell
Jerry E. McLaughlin
Joseph R. Morris
Patrick H. Meyy
Eric M. Sauer
Donna M. Talbot
Jennifer L. Wiebold

Master's Programs

Four 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 Marriage and Family Therapy prepares graduates to be eligible for a license as a Marriage and Family Therapist in the state of Michigan, and the Master of Arts in Counseling Education, with four program options, prepares graduates to be eligible for a license as a professional counselor. Additionally, the Master of Arts in Human Resources Development prepares graduates to provide direction, through leadership and consultation, for organizational learning and development in business, government, education, and healthcare settings.

Master of Arts in Counseling Psychology

Advisors:

Department Office, Room 3102, Sangren Hall
Telephone: 387-5100 FAX: 387-5090

The four program options leading to a Master of Arts in Counseling 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 four options are:

1. Community Counseling* with formal specializations in gerontology, substance abuse, holistic health, and study in marriage and family therapy.
2. School Counseling: Elementary or Secondary School Counseling
3. Career Development Specialist* in Blind Rehabilitation.
4. Rehabilitation Counseling* offered as part of the Rehabilitation Counseling/Teaching program (RCT) which is jointly administered by the Department of Counseling Education and Counseling Psychology and the Department of Blind Rehabilitation.

* Leads to Michigan license as a counselor.
** Leads to endorsement as a counselor on a current, valid Michigan teaching certificate.

All master's options above (except Rehabilitation Counseling) are accredited by the Council for the Accreditation of Counseling and Related Educational Programs.
Admission Requirements
Admission to one of the four options above is based on academic background, counseling and/or student affairs 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 materials may also be required.

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, which serves as the application for candidacy, be completed during the first semester of enrollment. Application deadlines are January 15 for the ensuing Fall semester and August 1 for the Spring semester. Applications materials may be obtained from the Office of Admissions and Orientation.

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
All program options require a minimum of forty-eight semester hours of course work. The program of study for each of the options includes seven, three-semester-hour core courses and an opportunity to choose additional courses emphasizing counseling under the advisement of an advisor. 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 is earned through this option.

The Student Affairs in Higher Education (Administration of College Student Affairs) option focuses on college student development, philosophy of student affairs, legal and ethical issues, college populations and educational environment, communication skills, and administration of student affairs and higher education.

The Student Affairs in Higher Education (Counseling in Higher Education) option accords college student development, individual and group counseling, ethics, testing, philosophy of student affairs, and student service delivery systems in higher education. This option leads to a professional counselor's license.

The Rehabilitation Counseling option is offered in conjunction with the Master of Arts in Blind Rehabilitation Counseling option. In certain circumstances the rehabilitation counseling option of the Master of Arts in Counseling Education may be earned independently. Application for the dual Master of Arts degree in rehabilitation counseling (RCT) is made through the Department of Blind Rehabilitation. Upon completion of the RCT program, the individual earns a Master of Arts in Counseling (Rehabilitation Counseling concentration) and a Master of Arts in Rehabilitation Teaching.

Master of Arts in Human Resources Development
Advisors: Nicholas Annaedis, Robert Brinkerhoff, Joseph Morris
Department Office, Room 3102, Sangren Hall.

The Master of Arts in Human Resources Development (HRD) provides graduate preparation for persons seeking entry into, or advancement in, a career in human resources development (also known as staff development, employee training, etc.) in business, government, education, and healthcare settings. This program prepares leading-edge HRD practitioners who are able to provide effective direction, through leadership and consulting roles, to assure that organizational learning and development functions are linked to produce, and can demonstrate worthwhile organizational and individual performance results.

Admission Requirements
Admission to the Master of Arts in Human Resources Development is based upon grade point average, educational background, professional work experience, and 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.

Application deadlines are January 15 for the ensuing Fall semester and August 1 for the Spring semester. Applications materials may be obtained from the Office of Admissions and Orientation. 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, which also serves as the application for candidacy, 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 Human Resources Development program requires a minimum of thirty-six semester hours, including seven, three-semester-hour core courses. A curriculum guide for the program is available from the department office.

The Human Resources program provides a flexible course of study that is used to meet the interest and needs of the student. In addition to the core courses, students must, with approval of advisor, select courses for an option in human resources development. The options are: Human performance technology and management, counseling and organizational psychology, organizational communication and development, instructional design and technology, and public administration and leadership.

1. CECP Core (9 hrs.)
   - CECP 601 Research Methods (9 hrs.)
   - CECP 602 Psychoeducational Consultation (3 hrs.)
   - CECP 607 Multicultural Counseling and Psychotherapy (3 hrs.)

2. Program Concentrations (15 hrs.)
   - CECP 640 Principles of Human Resources Development (3 hrs.)
   - CECP 641 Fundamentals of Needs Analysis (3 hrs.)
   - CECP 642 Evaluation of Human Resources Development Transfer and Impact (3 hrs.)
   - CECP 643 Project Management in Human Resources Development (3 hrs.)
   - CECP 710 Independent Research- Capstone Project (3 hrs.)

3. Electives (12 hrs.)
   Students, in consultation with advisor, will pursue one of the following HRD specialty options from which a minimum of 12 hours of course work is selected:
   - Human Performance Technology and Management
   - Counseling and Organizational Psychology
   - Organization Communication and Development
   - Instructional Design and Technology
   - Public Administration and Leadership

Master of Arts in Marriage and Family Therapy
Advisors: Gary Bischof, Karen Blaisure, Alan Howestadt, Joseph Morris
Department Office, Room 3102, Sangren Hall.

The Master of Arts in Marriage and Family Therapy provides students with academic course work and clinical practice designed to prepare individuals for entry level positions as family therapists in medical and private practice settings, and in public, private non-profit, and private agencies. Students who complete the program will have met the academic degree requirements to be eligible to apply for licensure as a Marriage and Family Therapist in the state of Michigan and Clinical Membership in the American Association for Marriage and Family Therapy. The program is offered in collaboration with the Department of Family and Consumer Sciences.

Admission requirements
Admission to the Master of Arts in Marriage and Family Therapy is based upon undergraduate and graduate grade point average, educational background, and related professional and volunteer experience. Prior to consideration by the admissions committee, applicants are required to complete and return a graduate admission application and program prerequisites from all institutions of previous study, letters of recommendation, and a professional goals statement. Based upon a review of the application materials, students desiring advanced standing will receive selected applicants to campus for interviews. Application deadline is January 15 for enrollment in the ensuing fall semester.

Application materials may be obtained from the Office of Admissions and Orientation. Upon admission, each student is assigned an advisor who will assist in preparing a program of study. It is expected that the program option of study which also serves as the application for candidacy, be completed during the first semester 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 marriage and family therapy program requires a minimum of fifty-one semester hours of course work, including substantive study of family processes, various family forms, individual and family life cycle issues, as well as significant training in clinical assessment and treatment. Specific Marriage and Family Therapy program content areas include theoretical foundations, assessment and treatment of couples and families, human development and family studies, ethics and professional issues, research methods, and supervised clinical practice.

Students are expected to work with advisors in order to be informed of policies, course offerings, electives, and prerequisites. A student's performance and progress will be evaluated throughout the program; at the conclusion of each semester of practicum, after the awarding of a grade below a "B" in any course, and final evaluation prior to graduation. The student is referred to the Department's Policy on Retention.

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 Counseling Education leads to a Doctor of Philosophy (Ph.D.) and is accredited by the Council of 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 Orientation 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 and underrepresented student populations by 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.

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 the 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 various 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 psychological 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 hrs.)
   a. Research methods (6 hrs.)
   b. Statistics (6 hrs.)
   c. Biological basis of behavior (3 hrs.)
   d. Cognitive-affective basis of behavior (3 hrs.)
   e. Social basis of behavior (3 hrs.)
   f. Individual behavior and human development (6 hrs.)
   g. History and systems of psychology (3 hrs.)

2. Specialization in Counseling Psychology (42 hrs.)
   a. Counseling Psychology (24 hrs.)
   b. Human Development and Family Studies (6 hrs.)
   c. Supervised Practica (12 hrs.)
   d. Recommended Electives (3 hrs.)
   e. Doctoral Dissertation (12 hrs.)
   f. Pre-doctoral Internship (4 hrs.)
   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.

Doctor of Philosophy in Counselor Education

The doctoral program in Counselor Education is designed to provide advanced—level preparation for careers in educational and 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 addresses the importance 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 master's 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 hrs.)
   a. Professional Seminar Counseling Education (3 hrs.)
   b. Advanced Counseling Theory and Practices (3 hrs.)
   c. Supervision in Counseling & Psychotherapy (6 hrs.)
   d. Doctoral Practicum: Clinical Supervision (4 hrs.)
   e. Doctoral Practicum in Counseling Education (4 hrs.)
   f. College Teaching in Counseling (3 hrs.)
   g. Vocational Development Theory (3 hrs.)
   h. Advanced Multicultural Counseling (3 hrs.)
   i. Internship in Counseling Education (4 hrs.)

2. Scientific Inquiry Core (27 hrs.)
   a. Research Design and Analysis (6 hrs.)
   b. Qualitative Research (3 hrs.)
   c. Elective in Research Design or Data Analysis (3 hrs.)
   d. Communication Skills Research Tool Competency
   e. Dissertation Seminar (3 hrs.)
   f. Doctoral Dissertation (12 hrs.)
   g. Specialization (12 hrs.)

Courses focused around a theme or particular interest approved by the student's doctoral committee. These specializations may include, but are not limited to: School Counseling, Community Counseling and Student Affairs.

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.

Counselor Education and Counseling Psychology Courses (CECP)

Open to Upperclass and Graduate Students

CECP 520 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.

CECP 580 Principles of Counseling and Guidance

This course is designed to provide an overview of the basic principles underlying school guidance programs and related service delivery systems. Open to all students, but is not intended for counseling majors.

CECP 583 Workshops in Counseling Education and Counseling Psychology

Workshops designed to enhance skill development related to Counseling Education and Counseling Psychology practices. Open to all students, but is not intended for counseling majors. May be repeated for credit.

Open to Counseling Education and Counseling Psychology Graduate Students Only.

CECP 601 Research Methods
CECP 602 Group Dynamics and Procedures
3 hrs.
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.

CECP 603 Tests and Measurement
3 hrs.
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.

CECP 604 Counseling Techniques
3 hrs.
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, states of clients, and their social, economic, cultural, and ethnic backgrounds. Graded on a Credit/No Credit basis.

CECP 605 Professional Issues and Ethics
3 hrs.
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 review of case studies applicable to an understanding of current issues, multicultural concerns, legal decisions, and ethics in the field.

CECP 607 Multicultural Counseling and Psychology
3 hrs.
The 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. Prerequisites: CECP 604 and 611.

CECP 608 Counseling Across the Life Span: A Family Systems Perspective
3 hrs.
The course describes counseling implications for assessing and enhancing human development across the life span from a family systems perspective. The content includes: (a)—theories of human development; (b)—the stages of family development; (c)—factors which influence family system patterns (e.g., race, socioeconomic status, sexual/affectional orientations, childhood experiences, genetic endowments, or divorce or blending of families); and (d)—implications for assessing and enhancing the development of family members and family systems within each stage.

CECP 610 Career Development: Theory and Practice
3 hrs.
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 relevant to career choice; and (4)—an exploration of the needs and concerns of clients from a variety of cultural backgrounds.

CECP 611 Theories of Counseling
3 hrs.
The nature, rationale, development, research and use of theories in counseling are studied. Major points of view including the psychodynamic, the cognitive, the behavioral the phenomenological, and the existential are studied and compared.

CECP 612 Counseling Practicum
4 hrs.
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 course studies. Each student, by participation and observation, will be expected to work with clients from differing social, economic, cultural, and ethnic backgrounds. Graded on a Credit/No Credit basis. Approved application required.

CECP 613 Field Practicum
2-6 hrs.
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. Graded on a Credit/No Credit basis. Prerequisite: Consent of advisor.

CECP 614 Student Personnel Administration Practicum
4 hrs.
This course emphasizes practical application of the principles of school psychology. Relevant experiences are provided under supervision in order for students to acquire and develop skills learned in previous studies. Students practice in a school setting and work with a variety of present problems, educational staff, and school-aged youth.

CECP 615 Practicum in School Psychology
3 hrs.
This course emphasizes practical application of the principles of school psychology. Relevant experiences are provided under supervision in order for students to acquire and develop skills learned in previous studies. Students practice in a school setting and work with a variety of present problems, educational staff, and school-aged youth.

CECP 621 Psychopathology: Classification and Treatment
3 hrs.
Basic concepts of history, current paradigms, and assessment of psychopathology with special emphasis on APA diagnostic classification system and counseling/clinical approaches to treatment.

CECP 622 Psychoeducational Consultation
3 hrs.
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-educative education and primary prevention.

CECP 623 College Student Development
3 hrs.
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.

CECP 624 College Students and the Educational Environment
3 hrs.
This course is designed to help participants understand the impact of campus environments on students, faculty, and staff. Theories and concepts to assist student affairs professionals with understanding the interaction between students (and others) and collegiate environments will be presented. Opportunities for theory-to-practice experiences will be provided. Prerequisites: CECP 623 and 633 or permission of the instructor.

CECP 625 Legal Issues in Higher Education
3 hrs.
The litigious nature of American (U.S.) society has made knowledge of legal issues related to liability, contracts, hiring and firing, free speech, disabilities, discrimination and many other topics a necessary skill for college administrators. Legal issues, legal enactments and precedents, constitutional provisions, court decisions and case law that impact higher education will be the focus of this course. Current legal issues affecting higher education will be monitored and discussed throughout the course. Prerequisites: CECP 623 and 633 or permission of the instructor.

CECP 626 Applications of Student Affairs Administration
3 hrs.
This course is designed to acquaint participants with a broad range of policies and procedures of administration and selected principles in program evaluation drawn from various organizational settings. The history, role and function of counselors and counseling psychologists will be analyzed. Evolving directions in the field of counselor education/counseling psychology will be considered.

CECP 629 Organization and Principles of Elementary School Guidance
3 hrs.
A thorough investigation of philosophical concepts and principles underlying counseling and pupil personnel programs in elementary schools. The history, organization, and administration of the program services are surveyed and practical application of concepts are required.

CECP 630 Organization and Principles of Secondary School Guidance
3 hrs.
Enables students to understand, apply, and formulate programs of guidance as they apply to secondary schools, in particular the history, philosophy, role, function, organization, administration, and development of guidance and counseling examinations in depth so that the counselor in preparation will have the necessary skills to assume an entry level position in secondary education.

CECP 631 Seminar in Substance Abuse I
3 hrs.
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. In part, the seminar will be used to elaborate upon the specific principles to the problems of substance abuse. This course is cross-listed with ADA 631 and SWRK 663.

CECP 632 Seminar in Substance Abuse II
3 hrs.
Continuation of CECP 631. This course is cross-listed with ADA 632 and SWRK 665.

CECP 633 Student Affairs in Higher Education
4 hrs.
The introductory course in student affairs will include a section on the history and development of U.S. higher education. The second phase of the course will focus on the following areas in student affairs: (1)—history of the profession; (2)—philosophical foundations; (3)—professional organizations; and (4)—functional areas.
CECP 640 Principles of Human Resources Development 3 hrs.
The course provides an overview of the human resource development (HRD) function in an organization. This includes the role of the HRD professional, the creation of theories and methods, 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. The course is a prerequisite for all HRD concentration students, and is intended for every other person who wishes to gain a critical understanding of the HRD staff development, in-service education) function.

CECP 641 Fundamentals of Needs Analysis 3 hrs.
Development of skills in identifying organizational needs for performance improvement related to human resources development. The course is intended for persons whose current or future professional roles involve them in the development of learning strategies that will impact individual and organizational change. The course will emphasize a holistic, performance-oriented problem-solving approach to needs analysis. The goals are to 1) familiarize students with principles and strategies related to needs analysis, and 2) to provide students with opportunities to develop skills in applying needs analysis concepts and methods.

CECP 642 Evaluation of Human Resources Development Transfer and Impact 3 hrs.
The course addresses the theories, methods, and issues associated with human resources development (HRD) practitioners as they recommend, design, install, and assess HRD interventions to meet needs in organizations. Evaluation of HRD interventions is viewed from a macro level versus the micro (instructional design) level to help students develop an understanding of the larger range of organizational and human performance factors that impinge on successful HRD efforts. Students analyze one or more major HRD interventions for a real or hypothetical organization, including plans for creating the pre- and post-training organizational environments needed to impact effective performance, and design and evaluation approach to assure and assess the quality of the intervention.

CECP 643 Project Management in Human Resources Development 3 hrs.
This course responds to both general project management concerns as well as the particular demands and problems associated with managing human resources development and other educational projects. Students will develop an understanding of project management needs, problems, concepts, and strategies. They will be introduced to and practice particular project management skills, such as project definition, work flow analysis, dependency charting, budgeting, planning, etc. Emphasis in the course is on acquisition of practical skills and knowledge. The course is intended especially for persons who have recently or will in the near future assume responsibility for managing a project and have little previous management experience.

CECP 644 Learning and Organizational Effectiveness 3 hrs.
Characterization of educational effectiveness that can be positively impacted by educational concepts and interventions, with special attention to the roles of individual and organizational learning in organizational effectiveness. Development of skills in contextualizing, planning, and designing the use of human resources development (HRD) to improve organization effectiveness efforts in real and hypothetical settings. Prerequisite: Completion of HRD required core course or permission of instructor.

CECP 645 Practicum in Human Resources Development 3 hrs.
This course is a supervised practicum integrated with a class meeting component. Students work together on human resources development projects with real clients in the Kalama area. The bulk of work takes place in the field, in project work and client contact. Class meeting sessions will be devoted to project reviews and group problem solving. Students will develop consultation skills and gain experience in solving HRD application problems.

CECP 650 Intellectual Assessment 3 hrs.
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. Prerequisite: CECP 603.

CECP 651 Personality Assessment 3 hrs.
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 Milon, 16-PF, CPI, and other measures. Prerequisite: CECP 603.

CECP 654 Psychoeducational Assessment 3 hrs.
This course combines lecture and laboratory experience in psychoeducational assessment with particular emphasis on academic learning problems. Diagnostic assessment of reading, math written language, perceptual-motor, adaptive behavior, and social problems behavior is presented. Standardized screening and diagnostic instruments are examined. Particular emphasis is given to accuracy of administration, scoring and interpretation via oral or written reports. Seminar and laboratory procedures designed to link assessment to intervention more effectively are also examined. Prerequisites: CECP 603 and 650.

CECP 656 Seminar in School Psychology 3 hrs.
This course examines current professional practice in school psychology. Specific issues include the history of the profession, role and function of school psychologist, research methodology applied in the field, and issues surrounding professional conduct, ethics, and the legal regulation of school psychology. More advanced issues address psychological assessment, legal regulation of school psychology, consultation and intervention, organizational development in schools, and multiculturalism.

CECP 661 Foundations of Systemic Family Therapy 3 hrs.
An in depth focus on the theoretical foundations of family therapy. Emphasis is placed on systems theory and recent theoretical developments. Normative 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.

CECP 662 Couple Interaction and Therapy 3 hrs.
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. Prerequisite: CECP 661.

CECP 663 Family Interaction and Therapy 3 hrs.
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. Prerequisite: CECP 661.

CECP 664 Advanced Family Therapy 3 hrs.
This is an advanced didactic and experiential course in marital and family therapy. Goals include the assimilation, integration, and application of the major approaches to the field. Further emphasis is placed on the development of the student's therapeutic expertise in MFT interventions and strategies. Course content may include use of exemplary cases, video tapes, role playing, and possible instructor participation in counseling as a consulting therapist. Prerequisites: CECP 661 and either CECP 662 or 663, or permission of instructor.

CECP 665 Sex Therapy 3 hrs.
The subject of human sexuality is examined from a variety of social, psychological, 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. Prerequisites: CECP 661 and 662, or permission of instructor.

CECP 667 Practicum in Couple and Family Therapy 1-4 hrs.
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 couples 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. This course is cross listed with ECEP 667. Prerequisite: Permission of instructor.

CECP 668 Advanced College Student Development Theory 3 hrs.
The course continues the examination of student development theories and their application to student affairs practice. The course will increase the complexity of understanding about the development of college students. Traditional theories and new theories will be critically reviewed for their inclusion of diverse populations and their applicability to the range and diversity of current and future students. Prerequisite: CECP 600 or equivalent.

CECP 674 Psychological Developmental Theory 3 hrs.
The course surveys theories of psychological development from a variety of perspectives such as analytic, humanistic, socio-cultural, behavioral, and constructivist 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.

CECP 675 Counseling Theories and Practices 3 hrs.
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. Prerequisites: for the class include one formal course exposure to counseling theory, supervised laboratory work, and experience in the field of counseling. Prerequisites: CECP 611, 612, or equivalents.

CECP 680 Professional Seminar in Counseling Psychology Issues and Ethics 3 hrs.
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. Prerequisite: Admission to the doctoral program in Counseling Psychology.

CECP 681 Professional Seminar in Counselor Education 3 hrs.
This seminar explores current professional issues such as professional identity, career options, professional organizations, and professional practice literature for doctoral students in Counselor Education. Prerequisite: Admission to the Counselor Education doctoral program or permission of instructor.

CECP 682 Advanced Multicultural Counseling 3 hrs.
The 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. Prerequisite: Admission to the Counselor Education doctoral program and CECP 697 or permission of instructor.

CECP 684 College Teaching in Counseling 3 hrs.
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. Prerequisite: Admission to the Counselor Education doctoral program or permission of instructor.

CECP 686 Topical Seminars 1-4 hrs.
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. May be repeated for credit.

CECP 688 Advanced Multicultural Counseling Psychology 3 hrs.
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. Prerequisites: Admission to the Counseling Psychology doctoral program. CECP 607, 612, or an equivalent.

CECP 691 Supervision in Counseling and Psychotherapy 3 hrs.
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. Prerequisite: CECP 693 or permission of the instructor.

CECP 692 Advanced Practicum in Counseling and Psychotherapy 4 hrs.
An advanced practicum designed to increase the competency of experienced counselors and therapists. Staffing conference approach to the analysis of counseling cases presented by the participants will be combined with taped and live demonstrations of advanced techniques. In addition to four hours of group supervision sessions, students are also required to engage in counseling psychotherapy and individual supervision for six clock hours per week. Graded on a Credit/No Credit basis. Prerequisite: Permission of instructor.

CECP 693 Doctoral Practicum 1-4 hrs.
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.

CECP 694 Vocational Development Theory 3 hrs.
An advanced course that involves the critical examination of existing theories of vocational development, the motivation to work and their components of their application to the counseling therapeutic process. Research pertaining to vocational development and the world of work will be analyzed. Prerequisite: CECP 610.

CECP 695 Doctoral Practicum in Counselor Education 4 hrs.
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. Prerequisites: Admission to the Counselor Education doctoral program or permission of instructor.

CECP 698 Readings in Counseling Education and Counseling Psychology 1-4 hrs.
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. May be selected more than once; total may not exceed four hours.

CECP 699 Dissertation Seminar 3 hrs.
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. Graded on a Credit/No Credit basis.

Open to Graduate Students Only. Please refer to The Graduate College section for course descriptions.

CECP 700 Master's Thesis 6 hrs.

CECP 710 Independent Research 2-6 hrs.

CECP 712 Professional Field Experience 2-12 hrs.

CECP 725 Doctoral Research Seminar 2-6 hrs.

CECP 730 Doctoral Dissertation 12 hrs.

CECP 732 Doctoral Clinical Internship 1-4 hrs.

CECP 735 Graduate Research 2-10 hrs.
Educatioal Studies

The Department of Educational Studies offers five master's programs, one graduate certificate program, and two doctoral programs. These programs include the Master of Arts in Educational Technology, Master of Arts in Evaluation, Measurement, and Research; Master of Arts in Socio-Cultural Foundations and Educational Thought; Master of Arts in Special Education; Master of Arts in Teaching Children Who Are Visually Impaired; the Graduate Certificate Program in Educational Technology; the Doctor of Philosophy in Educational Technology; and the Doctor of Education in Special Education.

Master of Arts in Educational Technology

Advisors: George Haus, Tracy DuBay, Robert Leneway
Room 3506, Sangren Hall

The Master of Arts in Educational Technology is designed to prepare educators for the integration of educational technology into academic programs of kindergarten through 12th grade schools. The degree program prepares educators for various school-based technology roles, including technology coordinators, technology instructional consultants/teachers, and special education technology consultants/teachers. A majority of the courses in the Master of Arts in Educational Technology are offered via Extended University Program's distance education program means that include two-way video classes, Internet conferencing, and other online teaching/learning methods. Other courses will be offered as residential courses taught in traditional computer labs and classrooms at Western's Kalamazoo campus as well as at various regional centers located in southwestern Michigan. Students should be prepared to handle 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 email, use of listservs, web browsing, and submission of assignments via file transfer procedures. An online application and additional information can be found at http://www.wmich.edu/edtech

Admission Requirements

In addition to meeting the requirements of The Graduate College, all applicants must possess a baccalaureate degree in education or a related field, 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 30-33 credit hours of course work with an overall grade point average of 3.0 or better. The degree course work requires a fifteen credit hour Major Technology Core selected from one of two approved Technology Core Areas: Technology Coordinator or Special Education Technology. Students will select the Major Technology Core with the approval of an academic advisor. The course work also requires a nine hour Minor Technology Elective Core that is related to the career goals of the student and approved by an academic advisor. The minor core must be different from the major core and have at least two of the three courses at the 600-level.

I. Major Technology Core (15 hrs.)
Select 15 hours from either Option A or Option B.

Option A: Technology Coordinator

EDT 541 Telecommunications for Teaching and Learning (3 hrs.)
EDT 542 Teaching with Technology: Design and Development for Learning (3 hrs.)
EDT 644 Advanced Information Technologies for Instructional Technology (3 hrs.)
EDT 645 Technical/Operational Issues of Educational Technology (3 hrs.)
EDT 648 Designing Staff Development for Educational technology (3 hrs.)
EDT 649 Planning and Implementing of District Level Educational Technology (3 hrs.)

Option B: Special Education Technology

SPED 537 Technology in Special Education (3 hrs.)
SPED 601 Acquisition and Critical Analysis of Information in Special Education (3 hrs.)
SPED 603 Disseminator of Special Education Information (3 hrs.)
SPED 680 Instructional Software in Special Education (3 hrs.)
SPED 681 Assistive Technology (3 hrs.)
SPED 682 Recent Research in Special Education Technology (3 hrs.)
SPED 712 Professional Field Experience in Special Education Technology (3 hrs.)

II. Technology Minor Elective Core (9 hrs.)
Select 9 hours from courses related to the technology career goals of the student and approved by an academic advisor. One 500- or 600-level course (3 hrs.) One 600-level course (3 hrs.) One 800-level course (3 hrs.)

III. Educational Research (3 hrs.)
EMR 640 Fundamentals of Evaluation, Measurement, and Research (3 hrs.)
OR
EDT 710 Independent Research: Capstone Research Project (3 hrs.)
IV. Culminating Learning Activity (3 or 6 hrs.)
Select one of the two courses below.

EDT 710 Independent Research: Capstone Research Project (3 hrs.)
EDT 700 Master's Thesis (6 hrs.)

The culminating learning activity allows students to demonstrate their comprehensive knowledge of educational technology in either a research study or in the development of a curriculum or instructional technology product. Students seeking advanced degrees beyond the master's level are encouraged to complete a master's thesis. Other students will select the capstone course with an advisor-approved technology research, application, or curriculum development project that includes a minimum of 120 hours of effort.

Master of Arts in Evaluation, Measurement, and Research

Advisors: Brooks Applegate, JianPIng Shen, Lilliana Rodriguez-Campos
Room 3506, Sangren Hall

The Department of Educational Studies 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 request a Master's Degree Program Application packet from the Department of Educational Studies. Applicants must follow all instructions on the Graduate Self-Managed Application form and send all supplemental materials to the Department of Educational Studies.

Program Requirements

This thirty-six credit hour master's program requires the satisfactory completion of EMR 640 Fundamentals of Evaluation, Measurement, and Research, EMR 641 Fundamentals of Measurement in the Behavioral Sciences, EMR 642 Program Evaluation, EMR 643 Personnel Evaluation, EMR 645 Elementary Statistics, EMR 648 Qualitative Research Methods, EMR 650-Survey Research, EMR 659 Contemporary Trends in Research, and EMR 679 Capstone Portfolio Project. In addition, 8 credit hours are chosen from courses outside the EMR program such as sociology, psychology, or other area approved by the advisor.

Master of Arts in Socio-Cultural Foundations And Educational Thought

Advisors: Paul Farber, Gunilla Holm, G. Thomas Ray, Gerald Pillsbury, Elena Lisovskaya
Room 3506, Sangren Hall

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. Education and Professional Development Core (9 hrs.)
   ED 601 Introduction to Research in Educational Settings (3 hrs.)
   ES 633 Human Nature and Diversity (3 hrs.)
   ES 634 Culture and Politics of Educational Institutions (3 hrs.)
2. Program Concentration (15 hrs.)
   Select three courses in socio-cultural foundations from the following:
   ES 603 Social and Philosophical Foundations (3 hrs.)
Master of Arts in Special Education

Advisors:
George Haus, Paula Kohler, Sarah Summy, Elizabeth Whitten, Shaila Riao, Kretal Ehrhardt
Room 3506, Sangren Hall

The Master of Arts in Special Education prepares students to locate, organize, critically evaluate, and use research-based practices to provide quality education services to students with disabilities. Collaborate with other educators, families, and service providers to solve problems in the field of special education; and to produce new information related to the field. Students develop competencies in information literacy, assessment, curriculum development, collaboration, transition education, and leadership through a curriculum aligned with professional standards established by the Council for Exceptional Children.

Admission Procedures, all options

Students seeking admission to the Master of Arts in Special Education program should request a Master’s Degree Program Application packet from the Department of Educational Studies. They must follow all instructions on the Graduate Self-Managed Application form and send the following supplemental materials to the Department of Educational Studies: 1) Department of Educational Studies Master’s Degree Program Application, 2) copy of teaching certificate/endorsement(s), 3) current resume, 4) written statement of experience and professional goals, and 5) two-reference forms. Completed files are reviewed on a rolling basis. Applications are evaluated on the basis of: 1) undergraduate grade point average (a graduate grade point average may be used if at least 15 hours of recent and relevant coursework have been completed), 2) Graduate Record Examination (GRE) scores - verbal, quantitative, and analytic, 3) special education experience, 4) congruence of goals and requested program option, 5) writing skills, and 6) references.

Program Requirements, all options

All students who receive a Master of Arts in Special Education must complete the following requirements:
1. A minimum of thirty-seven semester hours of prescribed graduate level work with a point-hour ratio of at least 3.00. Advisors will designate specific course and hour requirements for each option described below.
2. A comprehensive written examination. This examination may be taken after the student has completed a minimum of twenty semester hours. Responsibility for scheduling this examination is assumed by the graduate student after consulting with the program advisor.

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 continue to pursue advanced graduate preparation beyond the master’s degree. Additional special education teaching endorsements that can be earned through this option are Emotionally Impaired, Learning Disabled, Mentally Impaired, and Visually Impaired.

Prerequisites
1. Michigan Teaching Certificate or equivalent
2. Endorsement in at least one area of Special Education
3. Admission by Department of Educational 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: Emotionally Impaired, Learning Disabled, Mentally Impaired, or Visually Impaired.

Prerequisites
1. Michigan Teaching Certificate or equivalent
2. Admission by Department of Educational Studies

SPECIAL EDUCATION TECHNOLOGY OPTION

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 Educational 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 State of Michigan Central Office Administrator Certification and approval as either a Director of Special Education or a Supervisor of Special Education.

Prerequisites
1. Michigan Teaching Certificate or equivalent
2. Endorsement in at least one area of Special Education
3. Admission by Department of Educational Studies

Master of Arts in Teaching Children Who Are Visually Impaired

Advisors: Annette Skellenger
Room 3506, Sangren Hall

This fifty-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 Educational Studies.

Program Requirements

The program requires the satisfactory completion of BLS 588 (2 hrs.), BLS 594 (3 hrs.), BLS 584 (3 hrs.), BLS 591 (2 hrs.), BLS 593 (2 hrs.), BLS 590 (2 hrs.), BLS 592 (2 hrs.), BLS 605 (1 hr.), BLS 606 (1 hr.), BLS 670 (1 hr.), FCS 636 (4 hrs.), BLS 595 (4 hrs.), BLS 604 (1 hr.), BLS 592 (2 hrs.), SPED 601 (3 hrs.), SPED 637 (3 hrs.), SPED 610 (1 hrs.), SPED 632 (4 hrs.), SPED 544 (3), SPED 661 (3 hrs.), SPED 712 (2 hrs.), and SPED 674 (6 hrs.). In addition, students will complete a four-hour comprehensive exam as their capstone requirement.

Master of Arts in Teaching Children Who Are Visually Impaired/Orientation and Mobility for Children

Advisors: Annette Skellenger
Room 3506, Sangren Hall

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 Educational Studies. This sixty-five-hour degree program prepares a dual competency practitioner who is able to serve in schools 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 Educational 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 588 (2 hrs.), BLS 604 (3 hrs.), BLS 591 (2 hrs.), BLS 593 (2 hrs.), BLS 590 (2 hrs.), BLS 592 (2 hrs.), BLS 605 (1 hr.), BLS 606 (1 hr.), FCS 636 (4 hrs.), BLS 595 (4 hrs.), BLS 604 (1 hr.), BLS 592 (2 hrs.), SPED 601 (3 hrs.), SPED 637 (3 hrs.), SPED 610 (1 hrs.), SPED 632 (4 hrs.), SPED 544 (3), SPED 661 (3 hrs.), SPED 712 (2 hrs.), and SPED 674 (6 hrs.). In addition, students will complete a four-hour comprehensive exam (each program requires a comprehensive exam) as their capstone requirement.

Certificate Program in Educational Technology

Advisors: Robert Leneway, Tracy DuBay
Room 3506, Sangren Hall

This graduate certificate program provides a strong framework for the development of educational technology competencies for individuals who are employed or seek professional employment in the field of education as technology specialists. The audience for the program is...
anticipated to be inservice teachers interested in educational technology in the classroom, inservice teachers with more advanced technology knowledge interested in competencies and responsibilities required for building level technology specialists, inservice teachers or individuals who desire or assume the position of district technology coordinator, and district administrators and staff who desire advanced skills in the area of educational technology coordination.

Admission Requirements
In addition to meeting the requirements of The Graduate College, all applicants must possess a baccalaureate degree in education or a related field, 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 15-21 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 EDT 540, Introduction to Computing and Technology for Productivity; EDT 541, Telecommunications for Teaching and Learning; EDT 542, Design of Technology: Design and Development for Learning; EDT 644, Advanced Information Technologies for Instructional Technology; EDT 645, Technical Operational Issues of Telecommunications; EDT 646, Designing Staff Development for Educational Technology; and EDT 649, Planning and Implementing District Level Educational Technology. Students who demonstrate prior competence in each of the performance outcomes required for successful completion of EDT 540 will start the program with EDT 541 or EDT 542. Students who demonstrate prior mastery of the knowledge and skills in EDT 541 and EDT 542 will have other course choices available.

Descriptions of all courses required in the Certificate Program in Educational Technology may be found below under the heading Educational Technology Courses.

Doctor of Education in Special Education
Advisors: George Haus, Dona Iacobone, Paula Kohler, Sarah Summy, Elizabeth Whittem, Kristal Erhardt Room 3506, Sangren Hall

The Doctor of Education in Special Education is designed to prepare an individual to serve as a college teacher in a special education program and as an administrator of educational programs for learners with disabilities. 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 individuals 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 Department of Educational Studies. Application materials are available from the Office of Admissions and Orientation and from the Department of Educational Studies.

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 core work, the student will complete an internship in college teaching and an optional internship in administration of programs 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 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 complete successfully an oral defense of the dissertation as per Graduate College policy.

Doctor of Philosophy in Evaluation, Measurement, and Research
Advisors: Brooks Appligle, Jianping Shen, Lilianna Rodriguez-Campos Room 3506, 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 request a Doctoral Degree Program Application packet from the Department of Educational Studies. Applicants must follow the instructions on the Graduate Self-Managed Application form and send all supplemental materials to the Department of Educational Studies.

Program Requirements
The following requirements and courses will lead to a Doctor of Philosophy in Evaluation, Measurement, and Research (93 hours minimum):

EDM 640 Fundamentals of Evaluation, Measurement, and Research; EDM 641 Fundamentals of Measurement in the Behavioral Sciences; EDM 642 Program Evaluation; EDM 643 Personnel Evaluation; EDM 645 Elementary Statistics; EDM 648 Qualitative Research Methods; EDM 649 Philosophy of Science and Scientific Inquiry; EDM 650 Survey Research; EDM 651 Advanced Applications of Measurement Methods; EDM 652 Evaluation Practicum; EDM 655 Research Design; EDM 658 Qualitative Research Practicum; one of the Advanced Seminars (EMR 660, 661, 662); EDM 665 General Linear Models; EDM 712 Professional Field Experience; EDM Comprehensive Examination; and EDM 730 Doctoral Dissertation. In addition, 18 hours of advisor-approved courses must be completed. Students must also have a minimum grade point average of 3.5 in the Doctoral Dissertation.

Educational Studies Courses (ES)
Open to Graduate Students Only

ES 603 Social and Philosophical Foundations 3 hrs.

A cultural approach to the development of American educational practice in its broad social 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 interpretation of current educational issues and the alternative solutions of present educational problems.

ES 629 Culture and Schooling 3 hrs.

The purpose of this course is for students to examine culture as a system for organizing thought and perception and to explore 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 school experiences.

ES 630 History of Education in the United States 3 hrs.

Development of educational thought, practice, and social change in the United States. Opportunity to examine 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 will be emphasized. Consideration is given to the review of previously held conventional thinking about schooling in America will be addressed.

ES 631 Comparative Education 3 hrs.

This course provides an overview of comparative education, a field concerned with schooling within different national and historical contexts. Educational patterns and their societal determinants around the world will be examined. Selected problems and patterns of American education will also be highlighted from comparative perspectives. It will explore major theories and methodological approaches in comparative educational research as well as examine representative cross-national issues and themes.

ES 633 Human Nature and Diversity 3 hrs.

This course examines practical and theoretical issues in the definition of desirable educational ends and practices as related to the perceived needs, interests, and potentials of those involved. The course places the process of defining aims and practices in social, cultural, and historical perspective, with particular attention to the influence of historical human nature and diversity. Prominent views of human nature and diversity that have influenced the course of American schooling will be examined. This course provides basis for ongoing professional inquiry concerning the fit between educational practices and the diverse needs of those subject to them, and the ways educational practices facilitate the inculcation of cultural assumptions regarding human nature, interests, and potential.

ES 634 Culture and Politics of Educational Institutions 3 hrs.

This course examines practical and theoretical issues concerning learning organizations. It examines the ways educational aims and practices relate to wider patterns of belief, value, and controversy, and how these emerge and change in organizational settings. It includes consideration of the organizational dynamics of institutionalized educational practices, and explores how cultural assumptions influence educational content and method. The course also examines the roles of professional educators in effecting organizational change. Prerequisite: ED 633.

ES 673 Class, Ethnicity, and Gender in Education 3 hrs.

This course centers on the significance of social class, race, gender, and ethnicity in educational aims, processes, and outcomes. Social identity and cultural diversity are explored in relation to classroom communication patterns, teacher expectations, and student achievement. Patterns of bias and discrimination will be examined, as well as current issues, challenges, and opportunities of education with respect to student diversity.

ES 675 Multicultural Education 3 hrs.

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.

Educational Technology Courses (EDT)
Open to Upperclass and Graduate Students
EDT 503 Educational Technology Academy 1-3 hrs.
This course is designed to permit students to update knowledge and skills in current educational technology and apply this learning for use in educational programs for students in pre-kindergarten through college. Such applications include methods of using computers, video and audiovisual technologies in literacy development, content areas programs, instructional management, and the use as well as others appropriate to preservice and inservice professions. Participation in the course presumes subject matter knowledge and basic computer literacy on the part of the student. Final course outcomes include application of material to the classroom/workplace. These ETA offerings bring students with specific needs, instructors with unique expertise, and facilities with appropriate resources together for intensive and highly-focused learning experiences. May be repeated.

EDT 540 Introduction to Computing and Technology for Productivity 3 hrs.
This course is a basic introduction to computing and technology for productivity software. Designed for the beginning computer user, this course covers necessary information for the student to operate successfully a computer and other technology devices (CD-ROM, laser disc, player, etc.). Operation includes running programs, accessing information, data manipulation, and output. A variety of computer software programs that enhance personal productivity will be presented. Students will be provided with basic "hands-on" activities with many different software applications. Upon completing this course, the student will have a solid understanding of computer components and terminology. The student will be aware of the various types and purposes of software for learning and productivity and will be able to evaluate educational software for classroom application.

EDT 541 Telecommunications for Teaching and Learning 3 hrs.
The course focuses on the implementation of telecommunications for teaching and learning. Telecommunication technologies widely used in the field of education and emerging technologies will be presented. Students enrolled in this course will learn to operate various telecommunication tools to support their own personal productivity, teaching, and instruction. Students will also be equipped with skills necessary to review studies pertaining to the application of technology in education. Many of the telecommunication methods presented in this course will be used to deliver the course material. Prerequisite: EDT 540 or equivalent.

EDT 542 Teaching with Technology: Design and Development for Learning 3 hrs.
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. On 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, WWW, etc.) based upon learning theory and instructional design principles. Prerequisite: EDT 540 or equivalent.

EDT 550 Photography and Multimedia Workshop 1-3 hrs.
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 in educational settings. 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 equipment and software. May be repeated up to a total of six hours. Prerequisite: EDT 542 or equivalent experience/skills.

Open to Graduate Students Only
EDT 641 Instructional Development 3 hrs.
This course is intended for human resources development specialists, media specialists, and experienced teachers. This course employs an accountability model for application of media research and technology to actual courses and units of instruction. Students follow a systematic instructional development procedure from task analysis to evaluation, working together with their own students or as assistants and with other professionals. Prerequisite: EDT 540 or equivalent.

EDT 644 Advanced Information Technologies for Instructional Technology 3 hrs.
This course provides a detailed review of the latest technological advancements and their potential impact on educational institutions. 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. Introduction to management issues with educational technology at the building level will be presented. This course focuses on two primary areas: 1) equipment and costs necessary to implement these systems and 2) the impact these technologies have on an instructional system. Students will acquire skills that will enable them to connect, configure, troubleshoot, and maintain a variety of advanced technology systems. Prerequisite: EDT 542 or equivalent.

EDT 645 Technical/Operational Issues of Educational Technology 3 hrs.
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 for a school district. 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 issues including hardware, software, Internet connectivity, and troubleshooting issues will also be addressed. Prerequisite: EDT 542 or equivalent.

EDT 646 Studies in Educational Technology 1-3 hrs.
Explores theory and innovative developments in educational technology and suggests practical, instructional applications. Such topics as the following may be considered: Design and Analysis of Individualized Instruction, Instructional Simulations, Computer Applications in Instruction, and Diffusion and Adoption of Innovative Practices in Education. This course may be repeated for credit as different topics are offered. Prerequisite: EDT 542 or equivalent experience.
EMR 645 Elementary Statistics
3 hrs.
The study of the principles of research design and data analysis is pursued at both the conceptual and applied levels. Emphasis is on the development of the conceptual skills of design analysis and interpretation as well as the statistical analysis and the use of computer programs for data analysis. Prerequisite: EMR 640.

EMR 648 Qualitative Research Methods
3 hrs.
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 naturalistic study reports. Prerequisite: EMR 640.

EMR 649 The Nature of Science and Scientific Inquiry
3 hrs.
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 legitimacy of the scientific enterprise. 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 positivism, postpositivist conceptions of scientific inquiry and, in light of these, questions about objectivity, relativism, and value neutrality in scientific inquiry, 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.

EMR 650 Survey Research
3 hrs.
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 of interest, and to critique survey studies and findings. Prerequisite: EMR 640, 645.

EMR 651 Advanced Applications of Measurement Methods
3 hrs.
In-depth 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. Prerequisites: EMR 640, 641, and 655.

EMR 652 Evaluation Practicum
3 hrs.
Practiced 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. Prerequisites: EMR 640 and (EMR 642 or EMR 643).

EMR 655 Research Design
3 hrs.
A continuation of the study of the principles of research design and data analysis techniques. Advanced skills in design and analysis are developed in addition to an examination of design issues in educational settings. Skills in the use of computer programs for data analysis are required. Statistics for experimental and quasi-experimental designs of independent variables. Review of t-test, introduction to analysis of variance, including one way and factorial designs, repeated measures, and post hoc comparisons among means. All topics will be taught from an applied perspective, which will include statistical computing using a mainframe or PC environment and interpretation of statistical output. Prerequisites: EMR 640, 645.

EMR 658 Qualitative Research Practicum
3 hrs.
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 658 is the practicum experience: Each student will carry out a small-scale research project. If we combine EMR 649 and EMR 658, 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. Prerequisites: EMR 640, 648.

EMR 659 Contemporary Trends in Research
3 hrs.
This course is intended to develop awareness of current issues 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. Prerequisites: EMR 640, 641, 645, 648, 649, and 655.

EMR 660 Advanced Seminar in Research
3 hrs.
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. Prerequisites: EMR 640, 641, 645, 648, 649, 655, 658, and 659.

EMR 661 Advanced Seminar in Measurement
3 hrs.
A seminar for students seeking advanced theoretical understanding of the principles of measurement. Theorist presentation will focus on construction beyond classical test theory (e.g., item response theory and generalizability theory) are applied to instruments relevant to education. Prerequisite: EMR 640, 641, 651, 655.

EMR 662 Advanced Seminar in Evaluation
3 hrs.
An advanced seminar for the study of theoretical and practical problems in evaluation. Issues of ethics and evaluation rationales are addressed. Prerequisite: EMR 640, 642 or EMR 643.

EMR 665 General Linear Models
3 hrs.
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. Advanced skills in design and analysis are developed in addition to an examination of design issues in educational settings. 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 T, MANOVA, MANCOVA, logistic and non-linear regression, principal component analysis, canonical correlation, discriminate function analysis, and 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. Prerequisites: EMR 640, 645, 655, and 665.

EMR 675 Applied Multivariate Statistics
3 hrs.
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 T, MANOVA, MANCOVA, logistic and non-linear regression, principal component analysis, canonical correlation, discriminate function analysis, and 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. Prerequisites: EMR 640, 645, 655, and 665.

EMR 677 Ethnography of Schooling
3 hrs.
This course is an in-depth exploration of the use of ethnography in the study of teaching and schooling. Participant observation, in-depth interviewing, and document analysis are the main data gathering techniques studied. Students will design and execute a small-scale ethnographic study focused on an aspect of schooling. The course will be taught as a seminar where methodological issues, such as reliability and validity, will be discussed as they arise in the work of students. Ethnographic research on educational issues, with an emphasis on teaching, will be read concurrently.

EMR 679 Capstone Portfolio Project
3 hrs.
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 a presentation 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 the student's graduation date. Graded on a Credit/No Credit basis. Prerequisite: Completion of all M.A. in EMR course work.

EMR 687 Special Topics in EMR
1-6 hrs.
This is a variable topics course designed to provide instructors and students with a mechanism to explore current topics in evaluation, measurement, and research. The course may be repeated up to six times and may be offered at between 1 and 6 credits. Prerequisite: EMR 640, 641, 642, and 645.

Open to Graduate Students Only—Please refer to The Graduate College section for course descriptions.

EMR 710 Independent Research
2-6 hrs.
Prerequisite: EMR 640, 641, 642, and 645.

EMR 712 Professional Field Experience
3-6 hrs.
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 the 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 registering. Prerequisite: Completion of the Doctoral Core requirements.

EMR 730 Doctoral Dissertation
15 hrs.
Special Education Courses (SPED)

Open to Upperclass and Graduate Students

SPED 500 Topical Issues in Educating Learners with Disabilities
1-4 hrs.
This course provides a survey or in-depth coverage of current issues directly related to the education of learners with disabilities. The course may be repeated for credit. Prerequisite: Consent of department.

SPED 504 Teaching Practicum in Special Education
1 hr.
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. Prerequisites: Consent of department and concurrent enrollment in SPED 533 and 534.

SPED 512 In-Service Professional Development
1-4 hrs.
This course is designed for teachers, counselors, psychologists, social workers, and others interested in studying selected aspects of special education at appropriate locations, such as state hospitals and special schools. A variety of instructional experiences is provided, including conferences. Credit not applicable toward a graduate degree in Special Education.

SPED 515 Introduction to Early Childhood and Special Education
1 hr.
This course will provide an introduction to information related to early development and special education from birth to 8 years of age. Content will include laws specific to the education of young children with disabilities, discussion of early developmental milestones, impact of early development on later functioning, and recommended practices for education of young children with disabilities.

SPED 525 Introduction to Transition Issues for Students with Disabilities
2 hrs.
This course provides an introduction to transition issues for students with disabilities. The purpose of the course is to increase the student's awareness of effective transition practices in grades K-12 and to help the student identify strategies for implementing such. Course topics include transition-related assessment, self-determination, curriculum for transition, and support services.

SPED 527 Learners with Disabilities in General Education and Middle School Programs
3 hrs.
This course is designed for prospective and practicing elementary and middle school teachers. Emphasis is placed on meeting the needs of learners with disabilities in elementary and middle school programs. Required adaptations and modifications, and available resources and services for these learners are stressed. Prerequisite: Consent of department. Not acceptable for Special Education majors.

SPED 529 Learners with Disabilities in General Education and Secondary Programs
3 hrs.
This course is designed for prospective and practicing middle school and secondary teachers. Emphasis is placed on meeting the needs of learners with disabilities in middle school and secondary programs. Required adaptations and modifications, and available resources and services for these learners are stressed. Prerequisite: Consent of department. Not acceptable for Special Education majors.

SPED 530 Introduction to Special Education 3 hrs.
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: Consent of department.

SPED 531 Classroom Practicum in Special Education
1 hr.
This course provides students with an opportunity to work in an elementary, middle school, or secondary classroom with learners who have disabilities. It is intended to provide students with an awareness of the nature and needs of these pupils and the role of the teacher in working with such learners. Graded on a Credit/No Credit basis. Prerequisites: Consent of department and concurrent enrollment in SPED 530.

SPED 533 Assessment and Prescription in Special Education
3 hrs.
The major focus of this course is understanding the Clinical Teaching Model. Emphasis is placed on the relevance of assessment and prescription to the teaching of learners with disabilities. Prerequisites: Consent of department and concurrent enrollment in SPED 504 and 534.

SPED 534 Curriculum and Instruction in Special Education
3 hrs.
This course focuses on application of the Clinical Teaching Model to the education of learners with mild and moderate disabilities. Emphasis is placed on implementation and evaluation activities. Additional topics include: service delivery systems, roles of teachers and ancillary personnel, legal requirements, and major issues confronting the field of special education. Prerequisites: Consent of department and concurrent enrollment in SPED 504 and 533.

SPED 537 Technology in Special Education
3 hrs.
This course is designed to provide specific information, exposure, and experience related to a variety of ways that current and emerging technologies may be used to improve the education and lives of learners with disabilities. This course is not open to undergraduate majors in special education. Prerequisite: Consent of department.

SPED 538 Introduction to Classroom Management
3 hrs.
This course deals with methods of managing classroom behavior and dealing with specific behavior problems. Classroom management strategies will be discussed and related to the establishment of a positive classroom climate. Diagnostic and prescriptive techniques will be applied to problems of aggression, conduct, withdrawal, hyperactivity, distractibility, and impulsivity. Prerequisite: Consent of department.

SPED 539 Consultation and Communication in Special Education
3 hrs.
This course will provide an introduction to consultation and communication skills needed by special educators as they work with other professionals and parents. Prerequisite: Consent of department.

SPED 540 Introduction to Mental Retardation
3 hrs.
This course provides an introduction to the field of mental retardation. Historical perspectives, definitions, service delivery systems, evaluation procedures, and major issues are examined. Prerequisites: Consent of department and concurrent enrollment in SPED 545.

SPED 541 Practicum with Learners with Mental Impairments
1 hr.
This course provides students with an opportunity to work 6 hours per week (in two three-hour blocks) in an elementary, middle school, or secondary classroom with learners with mental impairments. It is intended to build upon experiences from SPED 531 and allow students to more fully participate in classroom teaching activities. Graded on a Credit/No Credit basis. Prerequisites: Consent of department and concurrent enrollment in SPED 540 and 545.

SPED 542 Introduction to Severe Impairments
3 hrs.
This course provides basic knowledge about individuals with severe mental, physical, emotional, and/or sensory disabilities. Biomedical, legal, sociological and educational perspectives are examined. Special emphasis is placed on organization and management of educational programs, as well as assessment and instruction of pupils. Prerequisite: Consent of department.

SPED 544 Educating Individuals with Severe Impairments
3 hrs.
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, sensory, motor development, self-help skills, cognition, and adaptive behavior. Prerequisite: Consent of department.

SPED 545 Education of Learners with Moderate and Severe Retardation
3 hrs.
This course focuses on understanding the ways in which teachers organize curriculum and implementation assessment and instruction to insure maximum learning for students with moderate and severe mental retardation. Prerequisites: Consent of department and concurrent enrollment in SPED 542.

SPED 570 Introduction to Emotional Impairments
3 hrs.
This course provides an introduction to the field of emotional impairments. Historical perspectives, definitions, service delivery systems, evaluation procedures, and major issues are examined. Prerequisites: Consent of department and concurrent enrollment in SPED 575.

SPED 571 Practicum with Learners with Emotional Impairments
1 hr.
This course provides students with an opportunity to work 6 hours per week (in two three-hour blocks) in an elementary, middle school, or secondary classroom with learners with mental impairments. It is intended to build upon experiences from SPED 531 and allow students to more fully participate in classroom teaching activities. Prerequisites: Consent of department and concurrent enrollment in SPED 570 and 575.

SPED 575 Education of Learners with Emotional Impairments
3 hrs.
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. Prerequisites: Consent of department and concurrent enrollment in SPED 570.

SPED 580 Introduction to Learning Disabilities
3 hrs.
This course provides an introduction to the field of learning disabilities. Historical perspectives, definitions, service delivery systems, evaluation procedures, and major issues are examined. Prerequisite: Consent of department and concurrent enrollment in SPED 585.
SPED 581 Practicum with Learners with Learning Disabilities
1 hr.
This course provides students with an opportunity to work 6 hours per week (in two- three-hour blocks) in an elementary, middle school, or secondary classroom with learners with mental impairments. It is intended to build upon experiences from SPED 531 and allow students to more fully participate in classroom teaching activities. Prerequisite: Consent of department and concurrent enrollment in SPED 580 and 585.

SPED 585 Advanced Theory and Practice in Learning Disabilities
3 hrs.
This course examines several theoretical perspectives which attempt to explain why students with learning disabilities fail to learn. Within each perspective, the application of selected theories to the Clinical Teaching Model is addressed. Emphasis is placed on the validity of interventions derived from each theory. Prerequisite: Consent of department and concurrent enrollment in 580.

SPED 591 Braille and Other Communication Methods
2 hrs.
This course provides students with a basic knowledge of the Braille literary code—reading and writing, and an overview of other communication methods available to students with visual impairments. Prerequisite: Consent of department.

SPED 593 Methods and Techniques of Teaching Braille and Other Areas of Communication
3 hrs.
This course explores various methods and techniques of teaching essential communication skills—Braille, typing, social communication, handwriting, abacus computation, the use of electronic devices and other media to students with visual impairments. Opportunity for supervised practical application of methods are afforded to the students. Prerequisite: Consent of department.

SPED 598 Readings in Special Education
1-4 hrs.
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: Consent of department.

Open to Graduate Students Only

SPED 601 Acquisition and Analysis of Special Education Information
3 hrs.
This course is designed to develop skills in information processing techniques in special education. The course will present an information processing model emphasizing methods and techniques for locating, accessing, and organizing text and media source material. The course will require students to develop skills to apply the processes of information synthesis, inductive and deductive reasoning, critical analysis, and hypothesis generation. Students will apply the course content to current issues and trends in the field of special education. Prerequisite: Consent of department.

SPED 603 Special Educator as Information Disseminator
3 hrs.
This course is designed to prepare the special educator to use information to form judgments, make decisions, substantiate positions, persuade others, and/or to demonstrate or explain. The processes will be directly related to a variety of special education problems and/or issues. Students will learn to apply the processes through demonstrations, guided instruction, small group activities, and individual assignments. Special Education domains targeted by this course are: Parent Relations, Collaboration, Community Resources, Advocacy, Interdisciplinary

SPED 603 Education of Gifted and Talented Children and Youth
2 hrs.
This course is designed for regular classroom teachers, administrators and other personnel. The characteristics of gifted and talented learners will be discussed. Personal, social, and multi-cultural factors which directly or indirectly influence the growth and development of these individuals will be considered. Attention will be given to methods and criteria used in identifying and programming for gifted, talented, and creative individuals. Prerequisite: Consent of department.

SPED 636 Topical Seminar in Special Education
1-4 hrs.
This course provides a survey or in-depth coverage of topics directly related to the roles of learners with disabilities. The course may be repeated for credit. Prerequisite: Consent of department.

SPED 637 Research and Evaluation Techniques in Special Education
3 hrs.
This course is designed to provide students with fundamental knowledge and skills in research and evaluation in special education. Topics include the use of the scientific approach, research and evaluation designs, observations and measurement instruments, statistical analysis, and report writing. Students will be expected to design and carry through a small research project. Prerequisites: SPED 603 and consent of department.

SPED 638 The Application of Behavior Theory to Classroom Teaching
3 hrs.
This course examines the principles of behavior theory as related to academic and non-academic behaviors of learners with disabilities. General and specific methods for generating, strengthening, maintaining desirable behavior, and methods for weakening undesirable behavior are presented. Prerequisite: Consent of department.

SPED 640 Organization and Administration of Services for Learners with Disabilities
3 hrs.
This course examines the principles and practices of organization and administration of special education programs at the state, intermediate, and local levels. Prerequisite: SPED 603 and consent of department.

SPED 641 Supervision of Special Education Programs and Services
3 hrs.
This course is designed to provide the experienced special educator with specific knowledge and skills necessary for school 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: SPED 603 and consent of department.

SPED 643 Legal and Financial Aspects of Special Education
3 hrs.
The current legislative and financial basis for special education national, state, and local levels will be examined in relation to the development and modification of special education programs. The basic concept of budgeting of resources and expenditures will be discussed. Prerequisite: SPED 603 and consent of department.

SPED 650 Seminar on Special Education in Higher Education
3 hrs.
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
SPED 656 Seminar: Current Issues in Special Education
3 hrs.
This course is designed to provide an in-depth examination 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 601, 602, and 603, students will be expected to review, evaluate, and present information on the various topics considered. Prerequisites: SPED 603 and consent of department.

SPED 659 Application of Learning Theories to Educational Programming for Learners with Disabilities
3 hrs.
This course provides an overview of theories of learning as they apply to learners with disabilities. An in-depth analysis of selected theories is conducted in order to compare and contrast the relationship of each to the development of long-term goals for learners with disabilities. Prerequisites: SPED 603 and consent of department.

SPED 661 Transdisciplinary Teaming
3 hrs.
This course is designed to provide students with the information needed for effective collaboration and interactive teaming in school and agency settings. Emphasis is placed on transdisciplinary teaming which will include components of effective communication, problem-solving, and the various direct and indirect service delivery models that can be used by collaborative team members to facilitate the success of all students in the mainstream. Prerequisite: SPED 603 and consent of department.

SPED 662 Service Delivery Models that Foster Collaboration
3 hrs.
This course is designed to acquaint students with the service delivery models that foster collaboration presently in the schools as well as rural and urban communities. Students will demonstrate collaboration and teaming skills through urban and rural field experiences. Prerequisites: SPED 603 and consent of department.

SPED 663 Professional Field Experience in Collaboration
3 hrs.
This course will provide students with hands-on, field experience in the use of collaboration for interagency teams in urban and rural settings. Students will be placed in a school or agency serving students with special needs and participate in the facilitation of a transdisciplinary approach to problem solving.

SPED 674 Intern Teaching in Special Education
6 hrs.
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. This course is graded on a credit/no credit basis. Prerequisite: Consent of department.

SPED 675 Internship in College Teaching
3 hrs.
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: SPED 603 and consent of department.

SPED 680 Instructional Software in Special Education
3 hrs.
This course will examine strategies for evaluating, modifying, and designing computer-assisted instruction for students with learning problems. The course will also address the integration of CAI into the special education curriculum and explore how technology tools can assist teachers. Prerequisites: SPED 537 or equivalent and consent of department.

SPED 681 Assistive Technology for Persons with Physical, Sensory, and Cognitive Impairments
3 hrs.
This course will examine assistive technology, including both hardware and software, to remove barriers to independence and education for persons with motor, visual, hearing, and cognitive impairments. Prerequisites: SPED 537 or equivalent and consent of department.

SPED 682 Current Research in Special Education Technology
3 hrs.
This course will examine current research topics in special education technology. As technology rapidly changes, this course will allow students to examine current issues and trends in technology integration, training, and development. Prerequisite: SPED 537 or equivalent and consent of department.

SPED 683 Authoring and Multimedia Systems
3 hrs.
In this course the student will learn how to use authoring systems for development of special education computer-assisted instruction (CAI) and multimedia. Students will create multimedia instructional materials incorporating text, graphics, sound, animation, and video using a variety of Macintosh and IBM-compatible hardware and software. Prerequisites: SPED 537 or equivalent and consent of department.

SPED 700 Master’s Thesis
6 hrs.
Open to Graduate Students Only—Please refer to The Graduate College section for course descriptions.

SPED 710 Independent Research
2-6 hrs.

SPED 712 Professional Field Experience
2-12 hrs.

SPED 730 Doctoral Dissertation
15 hrs.
The Master of Arts in Family and Consumer Sciences is designed for the person with a Bachelor of Science or Arts in Family and Consumer Sciences or a home economics-related program of study. Because of the diversity of the field and the unique needs of those desiring graduate training, an individualized program plan is designed for each student within the parameters of the program requirements.

The degree may be used as a foundation for continued graduate work leading to a doctoral degree at another institution.

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 two 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, wordprocessed 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. Fifteen of which must be in courses at the 600- or 800-level, and at least two hours of FCS 710. Independent Research.
2. A total of twenty hours in Family and Consumer Sciences must be completed in graduate level courses, planned in consultation with departmental advisor.
3. Assistantships may be available to those wishing to pursue full-time graduate study.

Career and Technical Education Courses (CTE)
Open to Upperclass and Graduate Students

CTE 510 Special Populations in Career and Technical Education 3 hrs.
Special populations enrolled in Career and Technical Education programs and the identification of appropriate teaching strategies, materials, and support services for effective teaching and learning.

CTE 512 Principles of Career and Technical Education 3 hrs.
Explanation, identification, investigation of the history, philosophy, principles, programs, and services in career and technical education.

CTE 513 Teaching Methods in Career and Technical Education 3 hrs.
Analysis and methods of organizing instruction in career and technical education. Included is a review of instructional theory and practice in career and technical education, the development of lesson plans, the selection and use of instructional methods, and the presentation of content using various methods of delivery.

CTE 514 Workshop in Career and Technical Education 3 hrs.
Investigation, research, and development of a particular topic or area of interest in career and technical education. (Students may enroll for more than one topic, but in each topic only once, to a maximum of three hours credit.) Prerequisite: Vocational certification or consent.

CTE 515 Grant Writing for Career and Technical Educators 3 hrs.
Analysis of the grant writing process, including the identification of a sponsor, development of an idea and plan, and completion of a proposal.

CTE 542 Curriculum Development in CTE 3 hrs.
Principles of analyzing, selecting, and arranging curriculum for instructional purposes in career and technical education.

CTE 543 Work-site Based Education Programs 3 hrs.
Study of work-site based education programs, including the organization and establishment of training programs, supervision of trainees on the job, 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 Career and Technical Education.

Open to Graduate Students Only

CTE 612 Studies in Technology 1-4 hrs.
Open 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. Prerequisite: Consent of instructor and department chair prior to registration.

CTE 614 Administration and Supervision of Career and Technical Education 3 hrs.
Emphasizes functions of administration and supervision, and problems involved in organizing and operating career and technical education programs. For teachers, administrators, and supervisors of career and education programs and those preparing for such positions.

CTE 615 Trends and Developments in Career and Technical Education 2 hrs.
A review and exploration of contemporary trends and developments in career and technical education.

CTE 616 Occupational Selection and Training 3 hrs.
Primarily designed for career and technical education teachers and administrators. Special emphasis on adapting instruction to individual needs.

CTE 617 Seminar in Career and Technical Education 2-6 hrs.
An intensive study of issues and initiatives related to career and technical education. Topics vary from semester to semester, and a student may take more than one topic up to a maximum of six hours. Prerequisites: If student is enrolled in the M.A. in CTE program, FCS 525, ED 617, CTE 510, 512, 513, and 542 prior to intern teaching are required. If student elects course as part of the post baccalaureate certification program, CTE 617 must be elected concurrently with FCS 622.

Preparing and using written performance and alternative assessments for career and technical education.

CTE 645 Organization of Employment and Training Systems 3 hrs.
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.

CTE 649 Leadership Development in Career and Technical Education 3-6 hrs.
An intensive study of the required leadership skills to perform the major duties and tasks of secondary and post secondary postsecondary 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.

CTE 648 Adult Education in Career and Technical Education 2-3 hrs.
Influence of developmental needs of adults and changes in society affecting families and institutions in developing adult programs in career and technical education.

CTE 650 Business/Industry/Education Work-based Learning 3 hrs.
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 school-community relations to work programs. Prepares the student to develop and evaluate transition models between secondary and post secondary institutions, business, industry and the community.

Family and Consumer Sciences Courses (FCS)
Open To Upperclass and Graduate Students

FCS 520 Insurance Education Seminar 1-2 hrs.
Fundamental principles of consumer insurance; overview of insurance availability; family insurance issues involving automobile and home (property and casualty insurance); methods of teaching insurance education in diverse curricula; review and analysis of insurance policies; research in insurance education, and careers in insurance and the insurance industry.

FCS 622 Topics in Family and Consumer Sciences 1-3 hrs.
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.

FCS 624 Socio-Psychological Aspects of Dress 3 hrs. Winter—Even Years
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.

FCS 525 The Adolescent in Development 3 hrs.
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.

FCS 535 Communication Skills for Working with Families across the Lifespan 3 hrs.
Labatory 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.

FCS 565 Problems in Nutrition 3 hrs.
A discussion of current problems in nutrition. Not open to dietetics majors. Prerequisite: FCS 260 or equivalent.

FCS 568 Gender, Culture, and Families 3 hrs.
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.

FCS 575 Administration of Child Development Centers 3 hrs.
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. (Cross-listed with ED 575.)

FCS 590 Project/Problems in Family and Consumer Sciences 1-6 hrs. Fall, Winter, Spring, Summer
Directed independent project in specialized curricula within Family and Consumer Sciences. Prerequisite: Department approval.

FCS 598 Independent Study in Family and Consumer Sciences 1-6 hrs. Fall, Winter, Spring, Summer
Directed independent advanced study in subject matter area not otherwise treated in departmental courses. Department approval required prior to enrollment.

Open to Graduate Students Only

FCS 600 Clothing Techniques 2 hrs.
Meets the needs of the advanced student in clothing construction techniques.

FCS 601 Basic Research Methods and Design 3 hrs.
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. Prerequisite: Acceptance in FCS or CTE Master of Arts program.

FCS 610 Nutrition Across the Lifespan 3 hrs.
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. Prerequisite: FCS 460 or 565.

FCS 614 Nutrient Metabolism I 3 hrs.
Study of the functions, requirements, and interrelationships in metabolism of energy, protein, carbohydrate, and lipids.

FCS 615 Nutrient Metabolism II 3 hrs.
Study of the functions, requirements, and interrelationships in metabolism of vitamins and minerals.

FCS 616 Consumer Education 3 hrs.
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.

FCS 618 Teaching of Specific Subjects in Family and Consumer Sciences 2-4 hrs.
Intensive study of teaching techniques unique to specialized subject matter offered in variety of curricula in Family and Consumer Sciences.

FCS 622 Practicum in Family and Consumer Sciences 2-6 hrs.
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 full time employed. Each credit hour requires 100 hours of on-site experience. Prerequisite: Admission to the M.A. in Family and Consumer Sciences or the M.A. in Career and Technical Education.

FCS 636 Teaching for Independent Living 4 hrs.
Provides a practical background and a basic understanding of skills and problems of the homebound and visually impaired.

FCS 652 Family Life Education 3 hrs.
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.

FCS 655 Adult-Child Relationships 3 hrs.
Theories and strategies for promoting children's developmental needs and building strong adult-child relationships in therapeutic, school, or home settings.

FCS 656 Family Law, Ethics, and Professional Issues 3 hrs.
Areas of study include the therapist's and family life educator's legal responsibilities and liabilities and 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.

FCS 660 Studies in Family Relationships 3 hrs.
The course will focus on family dynamics (i.e., family processes, communication skills, conflict management, stress, and family crises) and interpersonal relationships with specific attention given to translating this knowledge and these skills into family life education programming.

FCS 666 Studies in Family and Consumer Sciences 2-6 hrs.
Investigation of certain areas in family and consumer sciences selected to meet individual needs of the students. May be taken more than once if subject matter is different. Maximum credit is six hours.

FCS 667 Practicum in Couple and Family Therapy 1-4 hrs.
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. This course is cross-listed with CECP 667. Prerequisite: Permission of instructor.

FCS 690 Seminar in Family and Consumer Sciences 2 hrs.
Investigation and discussion of current research and literature in specified family and consumer sciences topics.

Open to Graduate Students Only—Please refer to The Graduate College section for course descriptions.

FCS 700 Master's Thesis 6 hrs.

FCS 710 Independent Research 2-6 hrs.
Master of Arts in Physical Education

Advisors:
- Debra S. Berkey
- Room 4021, Student Recreation Center
- Jody Brylinsky
- Room 4024-8, Student Recreation Center
- Ray Cool
- Room 4024-19, Student Recreation Center
- Lee deLisle
- Room 4024-18 Student Recreation Center
- Allison McFarland
- Room 4024-11, Student Recreation Center
- Timothy Michael
- Room 1052, Student Recreation Center
- Michael Miller
- Room 1043, Student Recreation Center
- Jabei Zhang

The Department of Health, Physical Education, and Recreation offers a Master of Arts in Physical Education® which prepares teachers, coaches, supervisors, and administrators to assume leadership roles in the following: Athletic Training, Exercise Science, Pedagogy, Special Physical Education Activities; Therapeutic Recreation; Supervision and Self Assessment in Physical Education.

HPER 510 Modern Health for Teachers and Health Professionals
- 3 hrs.
This course, designed for teachers and health professionals who have need of current knowledge in health science, surveys topics such as mental health, nutrition, substance abuse, physical fitness, chronic diseases, and stress management. Consideration is given to psychological, sociological, and cultural factors that influence health improvement. Attention is given to special factors of health and illness of children and adolescents. This course is not open to Health Education majors and minors.

HPER 512 Principles, Practices, and Methods in Health Education
- 3 hrs.
This course surveys the history, philosophy, and methods of health education. The philosophical and practical bases and practices of health education are discussed in terms of needs and capabilities of people and factors that influence their development and actualization. Emphasis is placed on the promotion of health and prevention of disease, disability, and premature death. Curriculum development and teaching methods focus on content and strategies considered most effective in teaching disease prevention, health promotion, and self-actualization.

HPER 514 Methods and Materials in Health Education
- 2 hrs.
Lectures and demonstrations with emphasis on effective health supervision of school children, principles and practices of health teaching in the various grades, and interrelation of the teaching with that of other subjects in the curriculum.

HPER 516 Issues in Health Education
- 1-2 hrs.
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; Sexuality Transmitted Diseases; Stress Management; Wellness and Lifestyle.

HPER 530 Practicum in Teaching and Coaching
- 1-2 hrs.
Demonstrations, participation, and evaluation on teaching and coaching fundamentals in selected sports. A graduate student may apply a maximum of four credits from 530 courses toward the master's degree program. Sports include: Archery; Badminton; Basketball; Football; Golf; Gymnastics; Ice Hockey; Judo; Karate; Soccer; Swimming; Track and Field; Volleyball; Wrestling; Yoga.

HPER 540 Movement Education
- 2 hrs.
A concept in physical education which deals with the way children learn the basic principles of how their bodies move.

HPER 580 Studies in Athletic Training
- 1-2 hrs.
Listed with various topics. A lecture/demonstration course concerned with the prevention, diagnosis, and treatment of sports type injuries. Prerequisites: BIOC 211, 240, HPER 380.

HPER 591 Evaluation in HPER
- 2 hrs.
Acquaints students with the theory, selection, construction, administration, interpretation of appropriate tests in the field. Class activity will include study and discussion of selected tests, application, scoring, interpretation, and construction of tests.

HPER 598 Readings in HPER
- 1-2 hrs.
Advanced students with good academic records may elect to pursue independently a program of readings in areas of special interest. Prerequisite: Approval of graduate director in Physical Education.

Open to Graduate Students Only
HPER 621 Physical Activities for Exceptional Children
- 3 hrs.
Physical and recreational activities and games used in corrective, adaptive, and general physical education programs for special education children.

HPER 622 Programming in Special Physical Education
- 3 hrs.
A study of physical education programs for children with disabilities. Emphasis will be placed on individualized, humanistic, developmental, functional, adapting, behavioral, sensori-motor, perceptual-motor, aquatic, fitness, movement, and inclusive programs.

HPER 625 Assessment in Special Physical Education
- 3 hrs.
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. Prerequisites: HPER 621, 622.

HPER 630 Advanced Coaching
- 1-2 hrs.
Advanced theories of conditioning, training, practice organization, scouting, game and tournament planning, skill analysis and correction, defensive and offensive strategies, safety procedures, purchases and care of equipment, public relations, and promotion specific to each sport. A graduate student may apply a maximum of eight hours credit from HPER 530 and 630 combined toward the master's degree program.

HPER 631 Factors Influencing Human Performance
- 3 hrs.
This is a survey course that will cover many of the scientific aspects of sport performance. The scientific concepts covered will be used to discuss what may hinder sport performance, as well as, what may enhance sports performance.
This course is designed as an introduction to all facets of the strength and conditioning field for the health, physical education, and recreation professional.

**HPER 632 Theories of Strength and Conditioning**

This course is designed to provide students with the knowledge, skills, and attitudes of proper nutrition relevant to managing health and body weight for optimal physical performance. Course content is designed to assist coaches, exercise science practitioners and youth sport administrators 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 and weight management; assist in timing and selection of food and hydration options to fuel optimal athletic performance in practice and contests; provide accurate, current and timely information about body composition and weight management.

**HPER 640 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 and select appropriate commercial instructional resources; (4) evaluate and select appropriate instructional approaches; (5) develop strategies to assess the progress of students effective instruction program; and (6) devise an effective public relation plan to promote physical activity within a school setting.

**HPER 641 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: HPER 640 or permission of instructor.

**HPER 642 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.

**HPER 643 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 processing, and the study of physical aspects of the human motor learning.

**HPER 644 Program Evaluation in Physical Education**

This course facilitates the evaluation of physical education programs using state, national, and international standards. Course content includes the process of evaluation involving school, community, and personnel as well as the product of evaluation associated with the preparation of application materials to submit for specific accreditation. Prerequisite: HPER 645 or permission of instructor.

**HPER 645 Curriculum Development in HPER**

This course is an interdisciplinary approach to the development of curriculum reflecting local, national, and international standards and trends associated with the HPER 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).

**HPER 648 Advanced Studies in Motor Development**

A series of advanced seminars dealing with specific topics in motor development 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.

**HPER 660 Governance and Administration of Sport**

This course serves as an introduction to the management, governance, and leadership of interscholastic, collegiate, 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 Sport Management master's degree concentration by providing a conceptual foundation for future courses in financial management, personnel management, risk management, and facility and event management and promotion.

**HPER 661 Problems and Trends in HPER**

Deals with modern trends and with instructional and supervisory problems involved in conducting an effective program in physical activity and sport. Emphasis includes a critical analysis of present practices.

**HPER 662 Legal Issues in Sport**

This advanced studies in administration course is designed to help the HPER professional become more conscious of legal responsibilities in the physical activity 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.

**HPER 663 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, and systematic approach to utilizing 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 physical activity setting. Content will include description of the "great games" and application of the guides to right actions in sport.

**HPER 664 Promotion and Marketing in Sport**

This course is designed to provide an introduction to the marketing and promotion of sport products and services. Course content will include, but not be limited to a discussion of contingency framework for strategic sport marketing; understanding sport consumers; segmentation, targeting, and positioning; promotion mix elements; sponsorship programs; and product distribution and pricing.

**HPER 665 Financial Management 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.

**HPER 666 Personnel Evaluation and Supervision**

This course focuses on the management of human resources in intercollegiate, collegiate, 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.

**HPER 667 Public Relations in Sport**

This course is designed to acquaint the sport management student policies and procedures critical to the promotion of sport. Topics will include, but not be 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.

**HPER 668 Advanced Studies in Administration of Physical Education and Athletics**

A series of advanced seminars dealing with specific topics in administration of physical education and athletics. 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: Administration of Athletic Programs; Business Procedures; Ethics in Sport; Legal Liability; Planning Facilities; Public Relations and Promotion; Sport Management.

**HPER 669 Management and Planning of Sport Facilities**

This course provides students vision and maintenance of recreational and sport facilities. Special attention will be paid to the planning elements involved in facility design; available literature related to facility management; and issues such as ADA compliance, fiscal management, maintenance and safety factors, and current trends in facility design.

**HPER 670 Exercise Physiology I**

This course is the first of a series of two courses that will give the graduate student an overview, 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.).
HPER 671 Exercise Physiology II
3 hrs.
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.).

HPER 672 Laboratory Techniques in Exercise Science
3 hrs.
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 quantify exercise and sport performance. Prerequisite: Permission of instructor.

HPER 673 Biomechanics
3 hrs.
This course consists of an in-depth discussion of biomechanics as it is applied to sports and other related physical activities.

HPER 674 Advanced Principles of Exercise Testing and Prescription
3 hrs.
Presentation and discussion of the practical and theoretical aspects of prescribing and evaluating exercise in healthy and diseased populations. Special attention will be given to cardiac rehabilitation. The course is centered on the knowledge, skills, and abilities needed, as determined by the ACSM, to become a certified ACSM Exercise Specialist. Prerequisite: Permission of instructor.

HPER 676 Exercise Science Seminar
3 hrs.
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 research designs used by researchers in the field. Prerequisite: Permission of instructor.

HPER 681 Sports Medicine: Applied Anatomy and Physiology
3 hrs.
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.

HPER 682 Medical Diagnostics and Evaluation of Injuries
3 hrs.
This course will offer comprehensive material regarding assessment and diagnostics of musculoskeletal and medical conditions of the physically active. Application of advanced clinical techniques and theory will be emphasized.

HPER 683 Advanced Techniques in Therapeutic Rehabilitation
3 hrs.
This course will offer comprehensive material regarding rehabilitation techniques for athletic related injuries. Advanced clinical application and theory of joint mobilizations, myofascial and muscle energy techniques, strength training and conditioning, and aquatic therapy will be emphasized.

HPER 684 Pharmacology for Sports
3 hrs.
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. Prerequisite: Enrollment in athletic training graduate program or by instructor permission.

HPER 685 Advanced Techniques in Therapeutic Modalities
3 hrs.
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. Prerequisite: Enrollment in graduate athletic training program.

HPER 687 Administration of Athletic Training
3 hrs.
This course will offer comprehensive material pertinent to the administration of athletic training programs in high school, college/university, and private clinical settings. Management, supervision, and administrative skills will be the focus of this course.

HPER 688 Emergency Procedures and Orientation
2 hrs.
This course will offer comprehensive material covering life threatening situations in sports medicine, including assessment, treatment and transportation. Establishing (orienting) a training room or site complete with procedures, supplies, and scheduling will also be addressed.

HPER 690 Research Procedures in HPER
3 hrs.
Research procedures utilized in health, physical education, exercise science, recreation, and sport. This course introduces principles scientific inquiry, research methods applicable to the HPER fields, evaluation of published research, and procedures for developing a research design using a quantitative or qualitative approach.

HPER 691 Psychological Foundations in HPER
3 hrs.
An overview of the application of psychology to physical education and sport with special emphasis on transcendent experiences in sports and the consciousness of sports.

HPER 692 Analytical Techniques in HPER
3 hrs.
This course is designed to allow the student to develop the knowledge and skills necessary for the effective analysis of qualitative and quantitative data specific to the fields of physical education, exercise science, sports studies, recreation, and health. Prerequisite: HPER 690.

HPER 693 Socio-Cultural Foundations in HPER
3 hrs.
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.

HPER 694 Technology in HPER
3 hrs.
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.

HPER 696 Advanced Studies in Exercise Science
2 hrs.
A series of advanced seminars dealing with specific topics in exercise science. Emphasis will be placed on in depth study of theories, problems, and issues with appropriate lectures and experiences leading toward the development of a research project or a master's thesis.

Open For Graduate Students Only—Please refer to The Graduate College section for course descriptions. Prerequisite: Approval of graduate director in Physical Education.

HPER 700 Master's Thesis
6 hrs.

HPER 710 Independent Research
2-6 hrs.

HPER 712 Professional Field Experience
2-12 hrs.
The Department of Teaching, Learning, and Leadership offers the Master of Arts in Education and Professional Development provides a comprehensive professional development program with six distinct areas of concentration: 1. Early Childhood Education 2. Elementary School Teaching and Learning 3. Reading 4. Teaching at the Middle Level

The Master of Arts in Education and Professional Development is designed to enhance the student's ability to develop knowledge and skill of reflective practitioners for a variety of educational settings. It is our belief that teachers ought to be developed as 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 Education and Professional Development is predicated on the assumption that theory, research, policy, and practice must be integrated on an equal plane to provide innovative models that lead to the improvement of teaching, learning, and reflective practice.

Reflective practice suggests that teachers should be able to demonstrate professional expertise appropriate for their level of experience. They need to have 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. Undergraduate grade point average of 3.0 (4.0 = A); graduate grade point average may be accepted upon review of recent and relevant coursework 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. Congruence of applicant’s goals and requested program concentration.
4. Two letters of recommendation from persons able to judge the applicant’s potential to succeed in a graduate program.
5. Experience working in a professionally-related setting.

Additional requirements, such as possession of a valid Michigan Teaching Certificate or equivalent at the appropriate level, may be required for some areas of concentration.

Candidates who meet all admissions criteria will be considered for admission to the program by the appropriate departmental unit. Because admission to some areas of concentration is governed by the number of available openings, the admission criteria listed above should be considered as minimum standards.

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 Education and Professional Development with advisor approval.

ELEMETARY SCHOOL TEACHING AND LEARNING, 36-39 hrs.
Advisors:
Lynn Biene, M. Arthur Garmon, Paul Vellom, Alison Young
Room 2112, Sangren Hall

Program Requirements
1. Education and Professional Development Core (9 hrs.)
ED 601 Introduction to Research in Educational Settings (3 hrs.)
ES 633 Human Nature and Diversity (3 hrs.)
ES 634 Culture and Politics of Educational Institutions (3 hrs.)
2. Program Concentration (18 hrs.)
ED 600 Fundamentals of Measurement and Evaluation (3 hrs.)
ED 602 School Curriculum (3 hrs.)
ED 636 Advanced Instructional Strategies (3 hrs.)
Electives, 9 hrs.

Advisors approved courses to be selected from three of the following five areas:
Area 1. Reading Strategies
Area 2. Science Methods
Area 3. Mathematics Methods
Area 4. Social Studies Methods
Area 5. Socio-Cultural Studies
3. Electives (6 hrs.). In consultation with a faculty advisor, the student will select 6 additional courses from the elective option areas or a course from a content area.

Capstone Research Project or Master’s Thesis (3-6 hrs.)
ED 679 Capstone Research Project (3 hrs.)

DR 611 Informal Approaches to Studying Young Children’s Development (3 hrs.)
ED 614 Parent Education for Teachers of Young Children (3 hrs.)
ED 615 Play and Cognition in Early Childhood (3 hrs.)
3. Elective (3 hrs.): Each student, with advisor approval, will choose a course from an extensive list of options including, but not limited to, the following:
ED 610 Montessori Education (3 hrs.)
ED 616 Piaget and Young Children (3 hrs.)
ED 652 Onacy and Literacy (3 hrs.)
ED 670 School Climate and Discipline (3 hrs.)
ES 675 Multicultural Education (3 hrs.)
ED 697 Special Topics in Reading (3 hrs.)
SPED 530 Education of Exceptional Persons (3 hrs.)
4. Capstone Research Project or Master’s Thesis (3-6 hrs.)
ED 679 Capstone Research Project (3 hrs.)
Or
ED 700 Master’s Thesis (6 hrs.)

Should additional experience in working with young children be necessary (as determined by the work history statement on the program application form), the student will complete an internship under ED 712 Professional Field Experience (3 hrs.).

EDUCATION, LEARNING, AND LEADERSHIP 137

The Department of Teaching, Learning, and Leadership offers the Master of Arts in Education and Professional Development (with five concentrations), and the Specialist in Education in Educational Leadership. The requirements for each of the programs are listed below, following the program descriptions. Descriptions for EMR courses may be found below, following the program descriptions. Descriptions for EMR courses may be found below, following the program descriptions. Descriptions for EMR courses may be found below, following the program descriptions.
Program Requirements

1. Education and Professional Development Core (9 hrs.)
   ED 601 Introduction to Research in Educational Settings (3 hrs.)
   ES 633 Human Nature and Diversity (3 hrs.)
   ES 634 Culture and Politics of Educational Institutions (3 hrs.)
2. Program Concentration (21 hrs.)
   Required, 15 hrs.
   ED 516 Professional Symposium in Reading (3 hrs.)
   ED 619 Clinical Studies in Reading (3 hrs.)
   ED 620 Education Therapy in Reading (3 hrs.)
   ED 652 Onramp and Literacy (3 hrs.)
   ED 666 Creating and Administering a Balanced Literacy Program (3 hrs.)
   Electives, 6 hrs.
   Select one of the following focus areas:
   - Early Literacy
     ED 680 Early Literacy Learning (3 hrs.)
     ED 681 Reading and Writing with Young Children (3 hrs.)
   - Elementary
     ED 597 Reading and Related Language Experiences (3 hrs.)
     ED 612 Strategic Learning Through Texts for Elementary Teachers (3 hrs.)
   - Middle/High School
     ED 617 Reading in the Content Areas (3 hrs.)
   - and either
     ED 625 Reading at the Middle Levels (3 hrs.)
     or
     ED 687 Strategic Learning through Texts for High School Teachers (3 hrs.)
   - Clinical/Special Services
     ED 643 Practicum in Clinical Studies in Reading (3 hrs.)
     ED 653 Practicum in Reading Therapy (3 hrs.)
   3. Electives (6 hrs.)

Master of Arts in Educational Leadership

Advisors:

Program Requirements

1. Education and Professional Development Core (9 hrs.)
   ED 601 Introduction to Research in Educational Settings (3 hrs.)
   ES 633 Human Nature and Diversity (3 hrs.)
   ES 634 Culture and Politics of Educational Institutions (3 hrs.)
2. Program Concentration (21 hrs.)
   ED 621 The Early Adolescent Learner (3 hrs.)
   ED 622 Middle Level School Structures and Pedagogy (3 hrs.)
   ED 624 Middle Level School Curriculum (3 hrs.)
   ED 625 Reading at the Middle Level (3 hrs.)

ED 664 Curriculum Development, EDLD 673 Supervision, and EMR 640 Introduction to Research or ED 601 Introduction to Research in Educational Settings. Courses required in the "specialty core" are EDLD 664 Curriculum Development, EDLD 673 Supervision, EDLD 674 School Community Relations, EDLD 661 School Law, EDLL 682 School Business Management, EDLD 667 The Principalship, EDLL 682 School Business Management, ES 627 Superintendence, and EDLD 679 Capstone Experience. Students who complete this concentration are eligible to receive a "K-12 Central Office Administration Leadership" endorsement from the university.

K-12 CURRICULUM AND INSTRUCTION LEADERSHIP, 33 hrs.

This concentration is designed to prepare students for a leadership role in curriculum instruction. Often this includes teachers who do not wish to become administrators, but desire to take on curriculum and instructional leadership activities. The three required courses in the "leadership core" include EDLD 602 Educational Leadership, EDLD 606 Systems Thinking, and EMR 640 Introduction to Research or ED 601 Introduction to Research in Educational Settings. Courses required in the "specialty core" are EDLD 664 Curriculum Development, EDLD 673 Supervision, EDLD 674 School Community Relations, EDLD 661 School Law, EDLL 682 School Business Management, EDLD 667 The Principalship, EDLL 672 School Finance, and EDLD 663 Personnel Administration, and EDLD 679 Capstone Experience. Students who complete this concentration are eligible to receive a "K-12 Curriculum and Instruction Leadership" endorsement from the university.

ORGANIZATIONAL ANALYSIS LEADERSHIP, 33 hrs.

This concentration is designed for graduate students who desire to develop and enhance their leadership skill in areas outside of K-12 education. It is designed for students who work in nonprofit organizations, government agencies, universities, and other organizations in which "educational" activities occur. The three required courses in the "leadership core" include EDLD 602 Educational Leadership, EDLD 606 Systems Thinking, and EMR 640 Introduction to Research.
or ED 601 Introduction to Research in Education, within the "Specialty core," or ED 505 Adult Learning, EMR 643 Personnel Evaluation, EMR 642 Program Evaluation, EDDL 663 Personnel Administration, EDDL 679 Casperton Experience, and nine credit hours of electives that meet student needs and leadership goals.

Specialist in Education in Educational Leadership

Advisors:
Anna Beach, Louann Berleen Palmer, Walter Stu, Van Cooley, Joseph Kvetovic, Jianping Shu, Charles Warfield, Gary Wegenke, Sue Pop-ink, Patricia Reeves

The Specialist in Education (Ed.S.) prepares persons for leadership roles in educational administration positions. The Ed.S. is a terminal degree appropriate for students wishing to earn a post-master's, but not doctoral, degree. Persons seeking admission to the Ed.S. program should be definite 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 must submit application materials to the Office of Admissions and Orientation, Graduate Admissions, and designate Educational Leadership. In addition to the Graduate College requirements, the Department requires the submission of an autobiography, 3 graduate reference forms, completion of a Resume of Leadership Experience form (available from the Educational Leadership office), an interview with at least two members of the Educational Leadership faculty, and review and acceptance by the faculty as a whole at a meeting scheduled for student admission. The admission meetings are held in November and March.

Program Requirements

A program of study consists of a minimum of 66 credit hours beyond the baccalaureate degree and leads to an Ed.S. degree and endorsement as a central office administrator or superintendent. If the electives are completed as specified, and includes the following courses: EDDL 602, Educational Leadership; EMR 640, Introduction to Research; EDDL 665, Elementary Administration; EDDL 686, Secondary Administration; EDDL 661, School Law; EDDL 662, School Business Management; EDDL 673, Supervision; EDDL 674, School Community Relations; EDDL 680, The Superintendent; EDDL 712, Professional Field Experience (6 credit hours); and EDDL 720, Specialist Project (6 credit hours).

In addition, 24 semester credit hours of elective courses will be selected, with advisor approval, which will complement and broaden strengths and skills already acquired. Contact the Teacher Certification Officer at Western Michigan University to be sure you meet the State of Michigan requirements for Certification beyond satisfactory completion of the course work required. Persons wishing additional information are urged to speak with an advisor or with the Educational Leadership Department office.

Teaching, Learning, and Leadership Courses (ED)

Open to Upperclass and Graduate Students

ED 500 In-Service Professional Development I 3 hrs.

This course develops specific professional skills related to current school responsibilities of teachers and other school personnel. Final course outcomes need to have demonstrated application to the classroom/workplace. May be repeated. Credit hours may be applied to teacher certification programs with approval of the Teacher Certification Office, but will not be applicable to graduate programs within the Department of Education and Professional Development. Graded on a Credit/No Credit basis.

ED 501 In-Service Professional Development II 2-3 hrs.

This course develops specific professional skills over an extended period of time related to current school responsibilities of teachers and other school personnel. Final course outcomes need to have demonstrated application to the classroom/workplace. May be repeated, but only three credit hours may be applied to graduate programs within the Department. Topics included in a department program must be approved in advance of registration by the program advisor.

ED 502 Curriculum Workshop 1-6 hrs.

Opportunity provided for teachers, supervisors, and administrators in selected school systems to develop programs of curriculum improvement. This may include short-term offerings to resolve a particular curricular problem, as well as long-range curriculum studies. A wide variety of resources is used for instructional purposes, including several specialists, planning and laboratory facilities, field trips, and departmental materials, and the like. Each offering of 502, Curriculum Workshop, will be given an appropriate subtitle, which will be listed on the student's official transcript. Students may earn up to three hours of credit for any given subtitle. No more than six hours of 502 may be applied toward a master's degree with advisor's approval.

ED 504 Adult Development 3 hrs.

This course provides an in depth look at each age and stage in the life cycle. It explores such problems as the changing role of parents and siblings, the changing social pressures on teachers, new adult life-styles, mid-life career changes, the changing roles of males and females, and unique health stresses. Emphasis will be placed on the identification of patterns of lifelong learning leading to a more fruitful and fulfilling life.

ED 505 The Adult Learner 3 hrs.

This course provides an in depth look at the teaching learning from approximately age 22 through old age while special emphasis on human vari- ability, unique learning styles, and characteristics of the adult learner. Theories of adult learning, studies of intelligence and memory, learning ca- pabilities, abilities, approach, and speed of learning will be considered. Motivation as prerequisite for high-level well-being and problem-solving will be studied.

ED 506 Teaching in Adult Education 3 hrs.

This course is designed to provide teachers with a knowledge of special situations incurred in the teaching of adults. Included also are techniques of interpersonal communication with adults, as well as practice in the designing of learning experiences for adults. Extensive use will be made of audiovisual media, and computers, experts in the field, and field observation in adult learning activities. Professional development course should be helpful to administrators in planning inservice programs for their own staff.

ED 508 Seminar in Parent Education 2 hrs.

Emphasis is placed on cooperative problem-solving between parents and teachers of school-age children and youth. Problems considered will include such topics as grief and loss through death, divorce, or separation; special needs and contributions of multicultural parents; parents as resource persons and paraprofessionals in the schools; and problems identified by members of the seminar. Members of the seminar will report on the current literature available through libraries and community resources and work toward potential solutions of problems.

ED 516 Professional Symposium in Reading 3 hrs.

This course is designed to be the initial course in the graduate program in reading. It is designed to present the basic concepts concerning the nature of the reading process and the teaching of reading. Emphasis will be placed on reading as a thinking process and on factors affecting reading performance. Special emphasis will be placed on child development; language development; concept development; physical, psychological, and environmental factors affecting a child's literacy development. In addition, the course will provide a brief overview of the delivery systems and procedures used in the U.S. to teach reading. This will involve an historical overview as well as current and potential future practices.

ED 575 Administration of Child Development Centers 3 hrs.

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. (Cross-listed with FCS 675.)

ED 597 Reading and Related Language Experiences 3 hrs.

A study of the current research on language related skill acquisition and literacy development.

ED 598 Selected Reading in Education 1-4 hrs.

Designed for highly qualified students who wish to study in depth some aspect of their field of specialization under a member of the departmental staff. Prerequisite: Written consent of departmental advisor and instructor.

Open to Graduate Students Only

ED 600 Fundamentals of Measurement and Evaluation in Education 3 hrs.

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.

ED 601 Introduction to Research in Educational Settings 3 hrs.

This course is intended to provide students with an overview of major forms of research models used in educational settings and to provide them with skills in interpreting and evaluating educational research studies. Emphasis is placed on careful reading and critique of current studies that are representative of the various models.

ED 602 School Curriculum 3 hrs.

This course, designed for teachers and administra- tors at all levels, analyzes the decision factors stemming from societal forces, psychological, cultural, and developmental needs and percep- tions of learners; and internal structures of the discipline as guidelines for a curriculum emerging from and serving a democratic society.

ED 604 Psychological Foundations of Education 3 hrs.

An overview of the psychological forces that influence learners in their educational settings, with special emphasis on the nature and signific- ance of human variability, development of self, measurement and evaluation, and a consideration and application of principles of learning in classroom situations.
ED 605 Teaching of Social Studies in the Elementary Schools
3 hrs.
This course is designed to help teachers understand the role of the social studies in the elementary school, gain insight into important considerations in the selection of content, and discover how to guide and assess the learning of children in this field. Planning social studies experiences and ways of teaching with children in a classroom setting will be emphasized.

ED 606 Early Childhood Workshop: Learning and Curriculum
6 hrs.
This workshop promotes an understanding of how the young child learns; students will use these learning principles as bases for curriculum development. Students will construct materials and equipment and develop curriculum plans. Portions of the course can be designed to meet the individual needs of students. These will be taught by experts from appropriate fields within and outside of the University. Prerequisites: Admission to the master's program in Early Childhood Education and permission of instructor.

ED 607 Research Methods in Early Childhood Education
3 hrs.
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. Prerequisites: ED 606 and permission of instructor.

ED 608 Seminar in Early Childhood Development
3 hrs.
The content of this seminar may vary each semester depending on the interests and needs of the students, but is invariably designed to provide an in-depth exploration of some facet of development in young children. Each student is expected to conduct a search of the literature on a specific topic. Topics may include child-rearing practices, sex-role identification, cognitive development, language acquisition, psychomotor development, and parent education. Prerequisites: ED 606, ED 607 or ED 601, and permission of instructor.

ED 609 Early Childhood Education in Perspective
3 hrs.
A study of the history of the education of young children with emphasis on the philosophies, social settings, and people who have influenced the movement. Prerequisites: ED 606, ED 607 or ED 601, ED 608, and permission of instructor.

ED 610 Montessori Education
3 hrs.
This course is an introduction to the philosophy of Dr. Maria Montessori for teaching the child "for life" and its application to classroom practice. Students will become familiar with the life and work of Dr. Montessori and their influence on her philosophy of education. Students will study the techniques and the learning materials she developed and consider their universal applicability.

ED 611 Informal Approaches to Studying Young Children's Development
3 hrs.
This course helps teachers observe, evaluate, and guide young children's growth while developing their skill in informal observation techniques. Teachers will learn about the children from new perspectives, recognizing and meeting children's needs. Evaluation procedures will help account for children's psychological and social growth while creating classroom conditions to maximize this growth.

ED 612 Strategic Learning Through Texts for Elementary Teachers
3 hrs.
This course is designed to assist elementary classroom teachers and those interested in literacy for early elementary 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 young children. Prerequisite: ED 611.

ED 613 Early Childhood Problems and the Teacher
3 hrs.
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.

ED 614 Parent Education for Teachers of Young Children
3 hrs.
Presents a variety of techniques for teachers to use in working together with parents. Teachers will study child-care factors which parents must know. The course will help teachers develop their own record-keeping systems, ways of involving parents in their children's education, and ways of communicating meaningful reports to parents. The education of parents as aids is included.

ED 615 Play and Young Children's Learning
3 hrs.
Students will develop understanding and appreciation of the nature of play in human life, and of the relationship of play to humanity's artistic endeavor, invention, and problem-solving, and will look at play from historical and anthropological points of view. Emphasis will be placed on the stages of play in young children, and on the intimate relationship between play and young children's cognitive and affective development. Students will make practical application to their own curriculum for children.

ED 616 Piaget and Young Children
3 hrs.
This course examines significant contributions of Piaget to our understanding of young children's learning. Knowledge of how young children think will be applied to early childhood curriculum. Teachers will apply Piagetian tasks and will be able to improve curriculum for young children with growing understanding of these children's minds.

ED 617 Reading in the Content Areas
3 hrs.
Designed to acquaint elementary, middle school and high school teachers with reading strategies used in the process of reading to learn. Participants will consider the text factors which affect student learning, and develop and evaluate strategies and materials to enhance their students' learning in specific content areas.

ED 619 Clinical Studies in Reading
3 hrs.
This course is intended to provide the basic informational need 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 nonstandardized reading tests. Emphasis will be placed on producing a practical bibliography of measurement instruments and materials. Prerequisite: ED 312 or 322.

ED 620 Educational Therapy in Reading
3 hrs.
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 disabilities is approached through working with disabled readers. Students will become familiar with testing instruments, their use, administration, and interpretation. Students will also learn techniques for recognizing those factors necessary for effective therapy. Prerequisites: ED 312 or 301 and 619.

ED 621 The Early Adolescent Learner
3 hrs.
Theoretical background and research related to the intellectual, emotional, 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.

ED 622 Middle Level School Structures and Pedagogy
3 hrs.
The purpose of this course is first for graduate students to review the developmental issues studied in ED 621 and to bring these perspectives to bear on the historical, philosophical, theoretical, and socio-political, and practical aspects of developing effective middle level school structures and classroom pedagogy. Graduate students will be involved in an analysis of some current structural and/or pedagogical elements of the schools and classrooms where they teach which will include the redeline of those elements toward greater responsiveness to the developmental and educational needs of the early adolescent learner. In addition, the instructor will conduct a formal analysis of each course participant's pedagogy during their instructional time in a middle level setting. Prerequisite: ED 621.

ED 624 Middle Level School Curriculum
3 hrs.
This course examines the historical, philosophical, and theoretical foundations of school curricula in general and of middle level school curricula specifically. The importance and function of developmental responsiveness in the curriculum content and design is examined along with the critical role of interdisciplinary thematic instruction and the dynamic interplay between the early adolescent learner, middle level school structure and the curriculum. Prerequisites: ED 621 and 622.

ED 625 Reading at the Middle Levels
3 hrs.
This course is designed to assist teachers who are instructing at the middle level in the 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. Prerequisite: ED 621, 622.

ED 628 Curriculum Theory
3 hrs.
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 practice.

ED 635 Children, Science, and Technology
3 hrs.
The course is intended to help elementary and middle school teachers capitalize on children's natural interest. In this course, students will explore a number of inexpensive and practical
activities that teachers can use to encourage children to explore. The activities teach science processes, that is, they involve the children in processes of gaining knowledge similar to what scientist use in their development of scientific knowledge. The processes will include observing, measuring, classifying, recording, and problem solving. The course will explore different uses for computer technology including the World Wide Web. The course will also cover assessment issues for activity oriented science learning.

ED 636 Advanced Instructional Strategies for Elementary Teachers
3 hrs.
This is an advanced course on teaching strategies at the elementary grade levels. The course focuses on interdisciplinary work. The course is intended to help teachers develop advanced strategies for making instructional connections among the basic disciplines of the elementary classroom. In addition, the course includes technology and multicultural issues in teaching.

ED 643 Practicum in Clinical Studies in Reading
3 hrs.
This course is intended to give students experience in employing informal and formal standardized procedures necessary for the diagnosis and treatment of the disabled reader. The course emphasizes the use of various measurements pointing out their capabilities and limitations. The role of oral language, applied linguistics, and dialects is studied and applied to the literacy process.

ED 653 Practicum in Reading Therapy
3 hrs.
This course affords students the opportunity to build on competencies attained in ED 643. Reading therapy is offered on a one student to client basis under the direction of a trained clinical therapist. The course serves as an instructional internship for preparation of pupils with learning dyslexia in reading and related areas. This course will provide graduate students practice in setting up prescriptive instructional objectives, selecting materials, and conducting treatment sessions, and carefully designing instructional procedures for disabled readers.

Prerequisites: ED 619, 620, 643.

ED 656 Creating and Administering a Balanced Literacy Program
3 hrs.
This course affords an opportunity to investigate and explore procedures to organize and administer elementary and secondary reading programs. The course will have students examine existing programs and study models of balanced literacy programs to improve upon existing programs. This course is intended to employ the best practices in the literacy research to create and administer a balanced literacy program. Kindergarten through adult basic education.

ED 670 School Climate and Discipline
3 hrs.
This course is designed for teachers and administrators who wish to develop a school or classroom climate which maximizes learning and minimizes discipline problems. Emphasizes new approaches to working successfully with problem students and classes.

ED 671 Structuring Classroom Dialogue
3 hrs.
This course is designed to assist teachers in the development of their ability to conduct dialogue in a classroom. Each student prepares lessons, presents them to a small group of students, and is videotaped and critiqued with each presentation. Some ethnographic research methods are presented and practiced in this course. The course will cover the use of field notes, journals, and transcription as well as observation and self-assessment methods. In addition, the course is designed to instruct the student about the ancient historical roots of dialogue, its transmission throughout the history of the western world, and the role that dialogue has played and continues to play in human interaction and learning. Students must be teaching or have access to a classroom for necessary application of course content.

ED 676 Teaching Thinking in the School
3 hrs.
This course investigates the issues involved in teaching thinking in classrooms. The focus is on the wide variety of current programs and materials and their underlying concepts. Students will learn to use the thinking of higher level thinking skills into the curriculum.

ED 679 Capstone Research Project
3 hrs.
Completion of an advisor-approved research, application, and curriculum project related to the student's concentration. Students attend class sessions designed to discuss education issues and project progress. Students present their projects for critical review and analysis. Prerequisite: ED 693.

ED 680 Early Literacy Learning
3 hrs.
Focused on literacy acquisition, this course explores how the young learner creates a network of competencies which generate subsequent independent literacy learning. Explanations of change over time in a child's control of literacy learning from school entry until the independence at the third year of schooling are emphasized. This cognitive view of literacy processes in a developmental perspective will explore different programmatic emphases which enable the young reader to extend the range and effectiveness of strategic reading.

ED 681 Reading and Writing with Young Children
3 hrs.
Reviews the developmental aspects of early writing and reading with young children providing insights for the creation of programs in early literacy development. Students will develop understandings of the early literacy process, helping teachers create an environment in which learners interrelate oral language learning, learning to read, and learning to write. The relationship of early writing to early reading is examined, and a model of interactive assessment with the teaching and learning cycle is stressed. Emphasis in this course will focus primarily on young children, with a subordinate role for reading instruction.

ED 687 Strategic Learning through Texts for High School Teachers
3 hrs.
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 516.

ED 693 Middle School Education Seminar
3 hrs.
This seminar serves as the capstone experience for the Teaching at the Middle Level master's program. It provides a forum for synthesizing and integrating the content of prior course work, further examining current research and exploring middle level education issues. Students examine current issues with an emphasis on integrative approaches to organizing knowledge and then identify topics for study based on their professional interests and goals. These topics are explored along with a variety of middle level education issues and their policy implications. Students identify a culminating project and conduct a review of literature pertaining to the project. Projects are completed in ED 694.

ED 694 Middle School Project
3 hrs.
Students continue their investigation of middle level education issues identified in ED 693. The main focus of the course is the completion of the projects identified in the preceding project. Students work independently on their projects with periodic class sessions designed to discuss education issues and project progress. Students present their projects for critical review and analysis. Prerequisite: ED 693.

ED 695 Reading Seminar
3 hrs.
This course is designed to be the culmination of the reading course each in the training stream in the master's program in reading and is designed to acquaint teachers, reading specialists, and administrators with the current research and literature pertinent to their areas of specialization. Students should be able to demonstrate an ability to design reading research studies which contribute to the body of knowledge in reading. As this course is intensive, it must be taken in the last six hours of graduate work.

ED 697 Special Topics in Reading
1-3 hrs.
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.

ED 698 Resolving Educational Problems in the Schools
1-6 hrs.
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, and teachers and administrators will be applied to actual school or classroom situations. The topics 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 698 may be applied toward a graduate degree.

Open to Graduate Students Only—Please refer to The Graduate College section for course descriptions.

ED 700 Master's Thesis
6 hrs.

ED 710 Independent Research
2-6 hrs.

ED 712 Professional Field Experience
2-12 hrs.

Educational Leadership Courses (EDLD)
Open to Graduate Students Only

EDLD 600 Academy
1-4 hrs.
Topics of interest to professionals in the field of educational leadership are examined in academies offered by the department. May be repeated. Total credits earned in academies applicable to degree programs not to exceed four hours. Graded on a Credit/No Credit basis.
EDLD 601 Workshop Seminar
1-4 hrs.
Specialized 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. May not be applied to degree programs in educational leadership. Total credits not to exceed six hours.

EDLD 602 Educational Leadership
3 hrs.
This course is an introduction to educational leadership, its components, 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, organizing change and renewal, and consensus building and conflict resolution.

EDLD 604 Contemporary Educational Scene
3 hrs.
Study and critical analysis of issues and trends influencing design, funding, and delivery of educational programs. Special emphasis on changes in services and priorities, impact and values. Discussion of multicultural and international issues and needs of special populations and groups. Prerequisite: EDLD 602.

EDLD 606 Systems Thinking
3 hrs.
This course will focus on steps that leaders take in developing and maintaining a learning organization. The emphasis will be on providing students with tools to develop productive inter-organizational relationships that contribute to worker satisfaction and increased worker commitment. Students will be required to provide a rationale for systems thinking, 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. Prerequisites: EDLD 602 and EMR 640 or ED 601.

EDLD 609 Theories of Leadership
3 hrs.
Critical examination of principles of leadership theory, instruction, and development of skills in evaluating contending theoretical perspectives regarding leadership. Prerequisite: Admission to the doctoral program.

EDLD 660 Site Based Budgeting
3 hrs.
Development of knowledge and skills needed in decentralized (site-based) budgeting. Topics include budgeting theories and budgeting processes. The course examines the impact of processes on the budgetary decisions of revenue, expenditure, balance, and implementation. Advantages and disadvantages of site based budgeting are examined as well as issues of accountability and equity. Prerequisites: Recommended EMR 640 and EDLD 602 or equivalent.

EDLD 661 School Law
3 hrs.
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 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 legal provisions for student participation, student and parent rights, torts, and liabilities. Enrollment of EDLD 661 before enrollment in EDLD 661 is recommended.

EDLD 662 School Business Management
3 hrs.
Development of knowledge and skill in management of business aspects 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. Prerequisite: EDLD 602.

EDLD 663 Personnel Administration
3 hrs.
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. Prerequisites: EDLD 602 and 640.

EDLD 664 Curriculum Development
3 hrs.
This course will introduce an understanding of the principles of curriculum and instructional alignment, design, implementation, and evaluation. There will be a strong emphasis on the foundations and history of curriculum inquiry and school reform, 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 a curriculum aligned with standards, benchmarks, and standardized tests. In addition, students will be required to demonstrate knowledge of ideological critique, effective instructional strategies, the use of technology, and curriculum evaluation. Prerequisites: EDLD 602 and EMR 640 or ED 661.

EDLD 667 The Principalship
3 hrs.
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, 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 principals. Prerequisites: EDLD 602 and EMR 640 or ED 601.

EDLD 672 School Finance
3 hrs.
Instructional instruction and critical discussion of policies and practices 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, 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 principals. Prerequisites: EDLD 602 and EMR 640 or ED 601.

EDLD 673 Supervision
3 hrs.
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 support of to within organizational contexts. Prerequisites: EDLD 602 and EMR 640 or ED 601.

EDLD 674 School Community Relations
3 hrs.
This course will provide 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 and school district. 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, evaluation of school-community relations. Prerequisite: EDLD 602.

EDLD 679 Capstone Experience
1-3 hrs.
This course provides students an opportunity to merge educational leadership theory with practices toward the development of transformational leaders. This will be accomplished through the use of discussions, case studies, field-based assignments, and the ultimate completion of a Performance-Driven Leadership Handbook. Prerequisites: Unless offered as an initial one-credit course, students must have completed all but one of their required classes in their Master of Arts in Educational Leadership prior to registering for EDLD 679, and they must be enrolled concurrently in that last required class at the time EDLD 679 is taken.

EDLD 680 The Superintendent
3 hrs.
Examination of the line and staff roles involved in the superintendent with emphasis on the role of the superintendent of schools as the chief executive officer in school and school-related organizations. Prerequisites: Master of Arts in Educational Leadership or equivalent and permission of advisor.

EDLD 681 Policy Development
3 hrs.
The content of 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 and permission of advisor.

EDLD 682 Computer Applications in Administration
3 hrs.
Study, design, and application of computer technologies in performance of administrative functions and tasks in educational organizations. Prerequisite: Permission of advisor.

EDLD 685 School Facilities Planning
3 hrs.
This course will provide a study in evaluation, design, and planning of the present and future facilities 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 reflective to facilities development. Consideration 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 examined as they relate to new facilities and to remodeling of current facilities. Prerequisites: EDLD 602 and 640.
EDLD 686 Doctoral Studies Seminar  
3 hrs.  
Viewed as 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. Prerequisite: Admission to the educational leadership doctoral program.

EDLD 687 Governance and Financing in Universities and Community Colleges  
3 hrs.  
Analysis of the key administrative and financing structures used within various types of higher education institutions. Examines the impact of social, political, economic, and legal environments on such structures, and the challenges faced by higher education leaders within these areas.

EDLD 688 Higher Education and the New Technological Frontier  
3 hrs.  
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.

EDLD 689 University and Community College Topical Seminar  
1-4 hrs.  
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.

EDLD 690 Professional Development Seminar  
3 hrs.  
Field-based and performance-based application of knowledge to major function/task areas of leadership in organizations with emphasis on schools as organizations. Emphasis on career planning and placement for persons enrolled. May be repeated. Total credits not to exceed six hours. Prerequisite: EDLD 602 or permission of instructor.

EDLD 695 Dissertation Seminar  
3 hrs.  
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. Graded on a Credit/No Credit basis. Prerequisites: Successful completion of departmental core comprehensive examination, simultaneous registration in one hour of EDLD 730, and approval of advisor.

EDLD 698 Readings in Educational Leadership  
1-4 hrs.  
Directed individual study of topics or bodies of knowledge not otherwise treated in department courses. A maximum of four hours earned in EDLD 698 is applicable on degree programs. Prerequisite: Permission of advisor.

Open to Graduate Students Only—Please refer to The Graduate College section for course descriptions.

EDLD 700 Master's Thesis  
6 hrs.

EDLD 710 Independent Research  
2-6 hrs.

EDLD 712 Professional Field Experience  
2-12 hrs.
The College of Engineering and Applied Sciences offers a variety of ... abilities we use to judge applications (see the list of selection criteria above)

3. Three letters of recommendation from academic or professional sources (preferably in sealed envelopes with the recommendation writer's signature across the envelope seal; please ask your referees to address the selection criteria)

4. If you are seeking financial support, include a completed doctoral associateship application form and/or a one-page application letter for a research assistantship (please indicate your areas of interest, skills, and knowledge, and availability for work)

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 coursework 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:

- 16-21 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 courses; and 9 hours of practical evaluation experience
- Passed both written and oral comprehensive exams (covering the competencies listed later on this page).
- Completed successfully 12 hours of doctoral dissertation study, plus an optional 3 hours of independent study in preparation for oral qualifying exams.
- Written and successfully defended a dissertation that advances the theory, methodology, and/or practice of evaluation.
- 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 their advisory committee. This requirement will usually be fulfilled as part of the practical experience; however, other options are possible in exceptional cases.)
- Complied with the program's residency enrollment requirements (i.e., 2 semesters of enrollment in at least 6 units of course work per semester within one 12-month period).
- 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, method data, drawing explicitly evaluative conclusions, setting standards, use of evaluative rubrics, synthesis of findings on multiple criteria, ranking vs. grading vs. scoring, subjectivity/abundance 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 (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 laying out, oral presentation skills, linking evaluation to decision making, maximizing evaluation utility)
- Metaevaluation and Evaluation Standards (use of professional standards and checklists for evaluation and metaevaluation)
- History and Nature of the Evaluation Profession, Plus the roots of the evaluation profession, its development to date, future directions)

Project Work

Students must complete 9 credit hours of practical evaluation experience (usually all EVAL 712; may include 3 units of EMR 652). 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 will be able to "hit the ground running" as competent practitioners.

Evaluation Courses (EVAL)

Open to Graduate Students Only

EVAL 600 Foundations of Evaluation 3 hrs.

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 will include an introduction to evaluation theory and models, needs assessment, the generation of comprehensive criterion checklists, setting standards, collecting and synthesizing method data, drawing explicitly evaluative conclusions, and the basics of presenting evaluation findings to different client audiences.

EVAL 601 Interdisciplinary Seminar in Evaluation 1 hr.

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 will include: the history and nature of the evaluation profession, evaluation standards, meta-evaluation, 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. May be repeated for credit up to a maximum of 4 credits.

EVAL 697 Advanced Evaluation: Variable Topics 1-3 hrs.

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 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. May be repeated for credit with a different topic. Prerequisite: Permission of instructor: Prerequisites: SPED 537 or equivalent and consent of department.

EVAL 710 Independent Research 2-6 hrs.

EVAL 711 Readings in Doctoral Specialization 3 hrs.

EVAL 712 Professional Field Experience 2-9 hrs.

EVAL 730 Doctoral Dissertation 1-12 hrs.
CIVIL AND CONSTRUCTION ENGINEERING

James K. Nelson, Jr., Chair
Osama Al-Ahmad
Jawahar Nesan
Jun-Seok Oh
Shenil Yehia

The Department of Civil and Construction Engineering offers the Master of Science in Construction Management. Courses are offered at times to enable working students to study without quitting their jobs. The program is designed to enable qualified full-time students to complete their studies within two years and fully employed students within three years.

Master of Science in Construction Management

Advisor: James K. Nelson
Room G-253 Parkview Campus

The principal objective of persons working in the field of construction management is to facilitate completion of each construction project on time and within budget while maintaining an acceptable level of quality. Other objectives include the maintenance of good safety records, efficient operations, quality workmanship, and proper and adequate labor relations with other employees.

Western Michigan University’s Master of Science in Construction Management is aimed at graduates of engineering and technology programs who want to play an active role in the management of local, state, national, or international construction. It provides advanced instruction and training for working construction professionals, as well as broad preparation for those who have recently completed their bachelor’s degree.

Students may choose to work on an industrial project or participate in either basic or applied research. They also have the option of emphasizing one of the following areas: Information Management and Computer Applications in Construction; Quantitative Tools for Construction Project Management; and Constructability, Quality, and Safety Issues on Construction Projects.

Admission Requirements

1. Bachelor of Science in Civil Engineering, Construction Science and Management, Construction Engineering and Management, Architecture, Architectural Engineering, or a related discipline. Applicants with other majors aspiring to enter the program are encouraged to apply, but may be required to take prerequisite courses, depending on their background.

2. Grade point average of 3.0 (A = 4.0) or better in the last two years of undergraduate work. Applicants with less than the required academic record, or with need to elect more than three prerequisite courses, may seek Permission to Enter Graduate Courses (PTGC) status or apply for probationary admission status and then complete the prerequisite course work and secure a grade of "B" or better in each course in the first nine hours of graduate work to establish regular admission status.

Program Options and Requirements

PROJECT OPTION

The Project Option is intended primarily for students who plan to work in the industry after graduation. Choosing to do an industry-supported project will prepare students for future jobs by integrating classroom knowledge and real-life experiences.

Program Requirements:

1. An approved program with a minimum of 34 semester hours of courses and an overall average grade of "B" or better.

2. The 34 semester hours must be completed as follows:
   a. 12 semester hours of core course requirements (CCE 530, 630, 631, and 633);
   b. 4 semester hours of CCE 710, Independent Research, which requires a written report and a presentation;
   c. 18 semester hours of approved electives (not more than three hours of CCE 639 can be applied).

THESIS OPTION

The Thesis Option is intended primarily for research-oriented students and those planning to pursue a doctoral degree. But the Thesis Option also serves students pursuing industry jobs, because engineers with a master’s degree are often expected to conduct applied research.

Program Requirements:

1. An approved program with a minimum of 30 semester hours of credit and an overall average grade of "B" or better.

2. The 30 semester hours must be completed as follows:
   a. 12 semester hours of core course requirements (CCE 530, 630, 631, and 633);
   b. 6 semester hours of CCE 700, Master’s Thesis, which requires a written thesis meeting Graduate College requirements and an oral examination in defense of the thesis;
   c. 12 semester hours of approved electives (not more than three hours of CCE 639 can be applied).

Civil and Construction Engineering Courses (CCE)

Open to Undergraduate and Graduate Students

CCE 530 Construction Project Delivery Systems 3 hrs.

This course addresses various quality management courses 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. Prerequisites: CCE 431, 436, and 438, or equivalent, and departmental approval.

CCE 531 Advanced Construction Project Management 3 hrs.

This course will build on the information that is normally provided to students in the undergraduate construction management courses on planning and control of construction projects. The focus of this course will be to provide the students with knowledge of quantitative tools that can be used in planning and controlling construction projects. Topics to be covered will include cash flow forecasting, site planning, site administration, cost analysis, contract documents, and contracts administration. Advanced planning tools such as line of balance, velocity diagrams, time-cost trade off, resource planning with applications to construction projects will also be discussed. Prerequisites: CCE 431, 436, and 438, or equivalent, and departmental approval.

Open to Graduate Students Only

CCE 630 Computer-Aided Construction 3 hrs.

This course will allow graduate students to explore the recent advancements in the area of Construction Engineering and Management. A series of presentations by the graduate students, industry experts, visiting researchers, and the Construction Engineering and Management faculty will provide a broad information base to the students enrolled in this course. The course is repeatable. Prerequisite: Departmental approval.

CCE 696 Advanced Topics in Construction Management 1-3 hrs.

New or special topics on advanced developments in different aspects of construction will be provided. Specific topics and prerequisites
COMPUTER SCIENCE

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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, computational geometry, computer architectures, computer graphics, computer networking, data warehousing and mining, distributed and mobile data bases, expert systems, formal specifications, human-computer interaction and visualization, knowledge-based systems, language and automata theory, mathematical and computer modeling, multimedia databases and systems, neural networks, parallel and sequential algorithms, pattern recognition and image processing, scientific computing and numerical analysis, simulation, and software engineering. The program also permits student to acquire expertise in closely related fields such as computer engineering and mathematics.

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 sixteen months. However, it is not uncommon for a student to take somewhat longer.

Admission Requirements

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 education. Applicant should have earned or expect to earn an undergraduate degree in a program with significant computer science and mathematics content.
   a. In computer science: Computer assembly language, computer organization, data structures, object-oriented and structured programming, file structures, and logic design.
   b. In mathematics: Calculus (2 semesters), linear algebra, and discrete structures.

The department welcomes applications to the master's program from students who do not have a computer science undergraduate degree but have completed at least two calculus courses and two programming courses at the university level prior to applying.

A student applying without a computer science undergraduate degree may be given conditional admission and asked to complete with a grade of B or better designated undergraduate courses from the following list:

a. CS 111 Computer Science I
b. CS 112 Computer Science II
c. CS 223 Computer Organization and Assembly Language
d. CS 224 Systems Programming Concepts
f. ECE 250 Data and File Structures
i. ECE 250 Digital Logic I
g. MATH 122 Calculus
h. MATH 133 Calculus II
l. MATH 145 Discrete Mathematical Structures
j. MATH 230 Elementary Linear Algebra

Due to the sequential order in which some of the prerequisite courses must be taken, students admitted on a conditional basis may 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 examination result is required for international students.

Program Requirements

Each student must complete an approved program consisting of at least 33 hours of graduate work including the following:

1. CS 531 (3 hours)
2. CS 580 (3 hours)
3. CS 691 (1–3 hours)
5. At least fifteen of the program hours must be at the 600-level or higher.
6. No more than 3 credit hours combined of independent research or independent study courses (such as CS 599 or CS 710) may be counted toward the degree, and then only with approval of the student's advisor.
7. With approval, a student may elect to write a master's thesis, in which case the student will register for 6 credits of work in CS 700.

Financial Assistance

Students accepted into the master's program may apply for one of the department's graduate teaching and research assistanitations. 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. The forms and instructions for applying 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.

Doctor of Philosophy in Computer Science

The doctoral program in computer is designed to develop computer scientists with research expertise in computer science. Specific areas of emphasis include algorithmic complexity theory,
artificial intelligence, computational geometry, computer architecture, computer graphics, computer networking, data warehousing and mining, database and datalog, databases, expert systems, foreign language, computer interaction and visualization, knowledge-based systems, language and automated theory, mathematical and computational foundations, numerical analysis, simulation, and software engineering. The program also permits 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 in three years. However, it is not uncommon for doctoral programs to take somewhat longer.

Admission Requirements
A successful applicant to the doctoral program in computer science must satisfy:

1. All of the general admission criteria identified in the Graduate Catalog.
2. Submission of transcripts of prior education.
3. Submission of results of the verbal, quantitative, and analytical sections of the Graduate Record Examination (GRE).
4. Submission of three letters of reference from persons able to assess the candidate's qualifications for doctoral-level study and likelihood of success; the student and referees would use the forms and procedures available from the department.
5. A resume that includes a description of academic background and professional experience.
6. Submission of an essay describing the applicant's academic and professional objectives.
7. For international students, the submission of the TOEFL examination result.

Program Requirements
The plan of study allows for considerable variety of emphasis; student can take advantage of the strengths of the department in matching their interests. A successful candidate for the Ph.D. in Computer Science will have completed 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 program in computer science.

1. A student having prerequisite requirements, as a condition of admission must complete all prerequisites before being considered to have entered the doctoral program.
2. The Ph.D. in Computer Science requires beyond the student's master's degree the completion of at least 30 hrs. of graduate coursework and 12 to 24 hours of dissertation credits. This implies a total of at least 72 credit hours of graduate work. The following courses are required of each student before completion of the Ph.d. program: CS 525, 526, 554, 581, 625, 626, 631, 632, 655, 680, 681, and 730.

a. In addition, each doctoral student during the student's first year in the program will be required to complete two to three credit hours of CS 735 accompanied by the production of a technical report.

b. Each doctoral student will be required to complete two computer science seminar courses totaling 6 credit hours each, with at least one during the first year in the program.

3. Each Ph.D. candidate must obtain departmental approval and demonstration mastery of two of the following three research skills:
   a. A foreign language other than English, with competency equivalent to a 400-level course.
   b. Statistics or probability at the level of MATH 362 or MATH 364.
   c. Computer document preparation and library research.

4. Before admission to candidacy for the doctoral degree, the student must pass a general qualifying examination in computer science. Students 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 a 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.

5. Each doctoral candidate must obtain approval from his or her dissertation committee for a dissertation topic and research plan. The program approval process is the preliminary examination and is structured by each dissertation committee to fit each candidate's interests. The student will have the opportunity to repeat the qualifying examination once, but may not change the selected areas. The dissertation committee will determine what area(s) of the examination, if any, the student must repeat.

6. Each doctoral candidate must obtain approval from his or her dissertation committee for a dissertation topic and research plan. The program approval process is the preliminary examination, and is structured by each dissertation committee to fit each candidate's program. The dissertation 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.

7. 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. 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.

Financial Assistance
Students accepted into the doctoral program may apply for one of the department's graduate teaching or research assistantships. In addition, advanced Ph.D. students may apply for one of a limited number of doctoral assistantships.

Computer science graduates and postdoctoral researchers are employed in government agencies, business and industry, and academic institutions as researchers, teachers, and computer managers.

Computer Science Courses (CS)

Open to Undergraduate and Graduate Students

Undergraduates with junior or senior status who have the permission of the instructor may enroll in 500-level courses.

CS 503 Programming the Microcomputer for Teachers
3 hrs.
A course in programming at an intermediate level for teachers. An introduction to file handling and graphics on small computers will be provided. Flowcharting, top-down design and the development of algorithms are stressed. Some programming projects in each teacher's area of interest will be assigned. Not for Computer Science majors or minors (except teaching).
Prerequisite: CS 502 or equivalent experience.

CS 518 Introduction to Computer Modeling and Simulation
3 hrs.
Provides an overview of model development and computer simulation. A methodology is introduced which is generally applicable to real-world simulation projects. The relationships between real systems, models, and simulation are presented, and the concept of experimental frameworks is discussed. General purpose simulation languages (e.g. GPSS, CSM, SIMULA) and the formalisms they support are presented. An introduction to random variables and elementary frequency distributions is provided. Simulation as a tool for exploring ill-defined systems will also be discussed. Several small programs and a simulation project will be assigned the student.
Prerequisite: CS 351 and a course in probability or statistics.

CS 525 Computer Architecture
3 hrs.
General topics in computer architecture, memory systems design and evaluation, pipeline design techniques, RISC architectures, vector computing, VLSI systems architecture. Prerequisites: ECE 250, CS 223 or ECE 251, and CS 331.

CS 526 Parallel Computations
3 hrs.
Architecture, synchronization and communication aspects of parallel and distributed systems. This course will focus on the design and analysis of algorithms which have a prototype treatment on current machines. These 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.
Prerequisite: CS 331.
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, weight 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.

Prerequisite: CS 331. An introductory statistics course is recommended.

CS 531 and MATH 145.

CS 532 Design and Analysis of Algorithms

A continuation of the study of data structures and algorithms. It provides a theoretical foundation in designing algorithms. The focus is on the advanced analysis of algorithms and on how the selection of different data structures affect the performance of algorithms. Algorithmic paradigms such as divide and conquer, greedy method, dynamic programming, backtracking and branch-and-bound are covered. Depth-first and breadth-first search trees and a variety of graph structures are discussed along with their applications to algorithm implementation. Algorithms will be analyzed for their complexity, NP-completeness will be introduced. Prerequisites: CS 331 and MATH 145.

CS 540 Designing of User Interfaces

3 hrs.

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. Prerequisite: CS 340 or permission of instructor for undergraduate students. No prerequisite for graduate students in Computer Science.

CS 543 Principles of Database Management Systems

3 hrs.

The fundamentals of database design and usage are covered, focusing on the relational data model. Topics include basic DB and DBMS concepts, logical design (ER modeling, normalization), physical storage concepts, relational algebra, SQL query language, PL/SQL and embedded SQL. A relational DBMS is used for lab assignments. Other topics may include query optimization, transaction processing, concurrency, security, forms/reports, object-relational data model, and an overview of advanced DB topics. A student may not receive credit for both CS 443 and CS 543. Prerequisite: CS 331.

CS 554 Operating Systems

3 hrs.

The internal and external views of computer operating systems are presented. A historical survey of the development and growth of operating systems is given. Fundamentals of systems and system design are stressed. Basic concepts and terminology are emphasized. Processes, communication and synchronization, deadlocks, scheduling, shared resources, resource allocation, and design issues, memory management, files management, and protection are discussed. Applications to real systems are investigated to motivate the ideas presented. Students build or run simulations and modify the internals of a working operating system. Prerequisites: CS 224 and CS 331.

CS 555 Computer Networks and Distributed Systems

3 hrs.

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. Prerequisites: CS 224 and CS 331.

CS 560 Software Requirements Analysis and Design

3 hrs.

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. Prerequisite: CS 331.

CS 580 Theory of Computation

3 hrs.

Provides an introduction to the theory of computation in the framework of formal languages. Basic definitions and concepts dealing with algorithms, sets, relations, functions, induction, operations on functions and cardinality are covered. Primitive, recursive, and partial recursive functions are defined. The Chomsky hierarchy of languages, including recursive and recursively enumerable sets and their acceptors, is introduced. Students are assigned theoretical as well as implementation oriented problems. Prerequisites: CS 331 and MATH 145.

CS 581 Compiler Design and Implementation

3 hrs.

Introduction to major aspects of compiler design. These include lexical analysis, parsing, and translation. Each student will implement a small compiler using modern compiler writing tools. Prerequisite: CS 485 or CS 580.

CS 582 Artificial Intelligence

3 hrs.

Provides an overview of artificial intelligence including basic AI techniques and concepts, e.g., production systems, heuristic searching techniques, knowledge representation, predicate calculus, and pattern recognition. Introduces AI application areas such as game playing, expert systems, vision, natural language processing, and learning. Prerequisite: CS 331.

CS 595 Advanced Topics in Computer and Information Science

1-3 hrs.

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. Prerequisite: Approval of department.

CS 599 Independent Study in Computer Science

1-3 hrs.

Advanced students with good scholastic records may elect to pursue independently the study of some topic of special interest. Topics and arrangements are arranged by mutual agreement of both student and professor. Prerequisite: Written approval of instructor.

Open to Graduate Students Only

CS 603 Studies in Computer Science

3 hrs.

Advanced work organized around varying topics in computer science. Students may take this course more than once. Prerequisite: Approval of department.

CS 625 Advanced Computer Architecture

3 hrs.

Multiprocessor architectures, various interconnection networks, communication and synchronization techniques, data flow architectures. Prerequisite: CS 525.

CS 626 Parallel Computations II

3 hrs.

Advanced topics in parallel computations, such as: algorithms in the areas of graph algorithms, numerical algorithms, computer graphics, VLSI design, and aspects of operating systems 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. Prerequisite: CS 526.

CS 627 Computer Graphics II

3 hrs.

Advanced computer graphics topics selected from current research. Some of the areas of interest include: visualization of complex processes, full motion video, virtual reality, client/server protocols and parallel image rendering. Emphasis is on research, and students are expected to participate in a research project with a faculty member during the course. Prerequisite: CS 527.

CS 628 Parallel Scientific Computations

3 hrs.

The design and analysis of parallel numerical algorithms to solve problems such as singular value decomposition and the solution of linear systems for structured/banded and sparse matrices, partial differential equations, and multiwavelet numerical integration. Applications may include the solution of wave equations, hydrodynamic flow, particle dynamics, finite element applications and Monte Carlo methods. Prerequisites: CS 526 and MATH 230.

CS 631 Advanced Data Structures

3 hrs.

The representation and implementation of various data structures. The effect of data structures on program complexity is investigated. The uses of data structures in a variety of application areas are covered. Introduces complex data structures. Prerequisite: CS 531.

CS 632 Analysis of Computer Algorithms

3 hrs.

Computing time and space requirements of algorithms are analyzed with emphasis given to the effect of data structure choice on program complexity. Various algorithms are used to study program computation and the related problems are identified. Students implement a number of algorithms and discuss aspects of the complexity and correctness of their programs. Prerequisites: CS 531 and 580.

CS 633 Computational Geometry

3 hrs.

Design and analysis of algorithms for computational geometry problems and discussion of applications in databases, computer graphics and VLSI design. Specific topics may include:
geometric formulation, geometric searching, point location, multidimensional problems, range trees, convex hulls, simple polytopes, voronoi diagrams, and the geometry of a rectangle. \textit{Prerequisite: CS 631.}

\textbf{CS 634 Combinatorial Optimization} 3 hrs.

The foundations of mathematical programming and the computational complexity of algorithms in this area. The topics may include: linear programming, algorithms for max-flow, min-cost and shortest path problems, weighted matching, integer and 0/1 linear programming, nonlinear programming techniques, approximation algorithms, branch-and-bound and dynamic programming methods of 0/1 programming, and properties of local search. \textit{Prerequisite: CS 631.}

\textbf{CS 640 Advanced Design of User Interfaces} 3 hrs.

Advanced interaction techniques drawn from the current literature. Topics of interest include information search and display, visualization, virtual reality, and hypermedia environments. \textit{Prerequisite: CS 540 or permission of instructor.}

\textbf{CS 643 Advanced Data Base Management Systems} 3 hrs.

An in-depth study of data base management systems with concentration on efficient design and usage. Topics covered include: the design of data models, the theory of relational data bases, query optimization, protocols to guarantee consistency of data bases, the design of physical models, and performance analysis techniques. Algorithms and data structures such as B-trees, transposed files, phantom files and hybrid structures are also studied. Distributed data bases, data base machines and current query languages will be covered. \textit{Prerequisites: CS 331 and CS 443.}

\textbf{CS 655 Advanced Operating Systems} 3 hrs.

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. \textit{Prerequisite: CS 554.}


Introduction to various models of software life cycles and formal methods for specifying requirements and design. Students will be introduced to a number of formal systems using axiomatic specification, abstract models (e.g., VDM, set theoretic systems (e.g., Z), predicate logic systems (e.g., Larch), and specification based on programming languages such as Algol,CLU, and Ada. Also discussed will be formal specification of real-time systems using Petri Nets, PANSLEY, CSP, SF, and others. Exercises and exercises illustrating the use of several formal specifications will be given. Student teams will be expected to complete the specification of requirements and design of a project using one of the methods presented. \textit{Prerequisites: CS 331 and MATH 145.}

\textbf{CS 661 Software Engineering II: Verification and Validation of Software Systems} 3 hrs.

The terminology and limitations of verification and validation (V and V) approaches. Five approaches will be presented: technical reviews, testing, proofs of correctness, simulation and prototyping, and requirements tracing. Students will define a V and V plan and carry it out for several stages in the development cycle of a project. \textit{Prerequisite: CS 660.}

\textbf{CS 672 Pattern Recognition} 3 hrs.

A survey of modern methods for computer recognition of patterns in varied applications such as digital images, human speech and sound, and grammatical-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. \textit{Prerequisites: CS 531 or CS 531, and MATH 364.}

\textbf{CS 679 Theory of Computation II} 3 hrs.

Recursive, partial recursive and primitive recursive functions, properties of recursive and recursively enumerable index sets, decidability, Turing computability and reducibility are treated in depth, while certain problems are proved to be unsolvable. Concepts from computational complexity, including relationships between complexity classes are covered. \textit{Prerequisite: CS 580.}

\textbf{CS 680 Mathematical Theory of Formal Languages} 3 hrs.

Definition of grammars and languages, recursive and recursively enumerable sets, decidability and undecidability, the Chomsky hierarchy of languages and their relation to models of automata. \textit{Prerequisite: CS 580.}

\textbf{CS 681 Compiling Theory and Practice} 3 hrs.

A study of theoretical and applied strategies for designing compilers and other types of language translation systems. Students will be assigned a programming project on compiling. \textit{Prerequisite: CS 581.}

\textbf{CS 682 Advanced Artificial Intelligence} 3 hrs.

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. \textit{Prerequisite: CS 582.}

\textbf{CS 685 Foundations of System Specification} 3 hrs.

Semi-formal and formal specification of abstract and real-life systems, with emphasis on computer software and hardware systems and using the State-System Specification Language. State and behavior modeling approaches and specification design philosophy. Theoretical foundations with practical application examples. Implications for validation, implementation, and testing. Alternative modeling techniques. \textit{Prerequisites: Graduate level competence in one of the following areas: computer architecture (ECE 357 or CS 525) or operating systems (CS 554); or computer networking (CS 555); or control theory, or switching and automata theory (CS 580); or permission of instructor.}

\textbf{CS 691 Seminar in Computer Science} 1-3 hrs.

\textbf{CS 697 Master's Project} 2-6 hrs.

Students will work on a special project in the 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. Graded on a Credit/No Credit basis. Credit cannot be used for both CS 697 and CS 700 in a student's master's program. \textit{Prerequisites: Graduate level competence in computer science and the subject areas of the project. Approval of the instructor and the department required.}
The program consists of thirty-three hours:

1. Twenty-two hours of required computer engineering courses.
2. A minimum of two hours of ECE 690, with a maximum of four hours allowed.
3. The remaining elective hours of additional graduate courses approved by the department.

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 in the last two years of undergraduate work.
4. Submit results of the GRE General Test.
5. Provide a digitalsignal-processing lab, an image processing lab, a smart sensors and structures lab, a digital communications and networking lab, and a RF communications and RFID lab, and a smart sensors and structures lab.

Master of Science in Engineering (Electrical)
Advisor: Ralph Tanner, Room B-236 Parkview Campus

Program Options and Requirements
The program has two options—a thesis option and a course work option. A common requirement for each option is twenty-four 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 chairman, and each student's thesis committee must be approved by the department chairman and the graduate dean.

Program Requirements
In addition to the twenty-four hours of core courses—comprised of eighteen (18) hours of approved electrical engineering graduate courses and six (6) hours of approved mathematically-oriented graduate courses—the student will elect six (6) hours of ECE 700 Master’s Thesis and successfully defend the thesis.

COURSE WORK OPTION
In addition to the twenty-four hours of core courses—comprised of eighteen (18) hours of approved electrical engineering graduate courses and six (6) hours of approved mathematically-oriented graduate courses—the student will elect a)–three (3) hours of additional electrical engineering graduate courses and b)–three (3) hours of additional electrical engineering graduate courses approved by the department, and c)–six (6) hours of advanced graduate courses approved by the department from the following discipline: electrical, computer, industrial, or mechanical engineering; mathematics; computer science; or physics.

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.

Doctor of Philosophy in Electrical and Computer Engineering
Advisor: S. Hossein Mousavinezhad, Room B-236 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, communications and networking, and control systems. The department has ten instructional laboratories in electric circuits, digital logic, energy conversion systems, microcomputer 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, 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 academic goals and research interests, 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 are as follows:
1. Minimum of 50 credit hours beyond the master's degree to include:
   a. 15 hours of ECE 730, Doctoral Dissertation.
   b. A maximum of 12 hours of ECE 697 Problems in Electrical/Computer Engineering or ECE 710 Independent Research.
   c. A minimum of 2 hours in ECE 725 Doctoral Research Seminar.
   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 (1) simulation and modeling and (2) statistics. Competency will be based on successful completion with a "B" or better grade) ECE/ME 580 and STAT 660.
7. A one-year residency during which the student will conduct research.
8. Final dissertation defense and approval by committee.
Electrical and Computer Engineering Courses (ECE)

Open to Upperclass and Graduate Students

ECE 515 Real-Time Computing
3 hrs.
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. Prerequisite: CS 112 or equivalent.

ECE 520 Power Electronics and Motors (3—0)
3 hrs.
Basic, transformer isolated and resonant switchmode converter topologies. Steady-state analysis, large-signal, small-signal modeling and analysis, state-space and discrete-time models. Magnetics, control techniques and power conditioning of converters. PWM control using space vector theory. Theory and applications of vector (torque) control of AC machines. Analysis and design of electric motors based on FEM. Prerequisites: ECE 320 and ECE 330 or equivalent.

ECE 521 Surface Mount Technology Design (3—0)
3 hrs.
This course will focus on two major areas of electronic design. First, we will study effective implementation of circuit board designs to address the technical issues in Surface Mount Technology (SMT). Second area will include a study of solid-state devices and digital circuits. Technical discussions will explore advantages and disadvantages of SMT, SMT processes and equipment, design tools and guidelines, internal circuit structure and device operation, and defect analysis. Prerequisite: ECE 221.

ECE 524 Introduction VLSI Technology (3—0)
3 hrs.
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/SiO₂, interface, dopant diffusion, ion implantation, thin film deposition, etching, and back-end technology. Prerequisite: ECE 221.

ECE 532 Introduction to Evolutionary Computation (3—0)
3 hrs.
Introduction to optimization algorithms which operate using the principles of Darwinian evolution. Both underlying theory and applications. Genetic algorithms, evolutionary programs, and evolution strategies. This course is cross-listed with CS 532. Prerequisite: CS 331.

ECE 551 Application Specific Integrated Circuit Design (4–0)
4 hrs.
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). Design automation will also be discussed and full-custom design will be briefly introduced. Introduction to contemporary CAD systems.

ECE 552 Switching and Automata Theory (4–0)
4 hrs.

ECE 553 Advanced Microcontroller Applications (3–0)
3 hrs.
This course is intended to give graduate students and seniors the ability to specify, design, and test microcontroller based digital systems. Prerequisite: ECE 451 or equivalent.

ECE 555 Advanced Digital Signal Processing (3–0)
3 hrs.
Discrete-time signals and systems, time and frequency domain representations. Structures of Digital Filters. DFT and FFT methods of spectral analysis and estimation. Discrete Hilbert Transforms and multidimensional signal processing. Prerequisite: ECE 455 or equivalent.

ECE 557 Design of Reconfigurable Digital Machines (3 hrs.
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. Prerequisites: Computer engineering or electrical engineering major: ECE 357; ECE 451; or equivalent courses.

ECE 560 Time-Varying Fields (3–0)
3 hrs.
Electrodynamics. Maxwell's Equations, boundary value problems and solutions of Helmholtz Equation in different coordinate systems. Green's functions, transmission lines and waveguides. Introduction to perturbational and variational methods. Engineering EM Background needed for more advanced topics. Prerequisite: ECE 361.

ECE 570 Digital Control System (3–0)
3 hrs.
State variable technique, controllability and observability, digital control system design with state or output feedback, maximum principle, optimal linear regulator—deterministic and stochastic state observers. Prerequisite: ECE 371.

ECE 580 System Modeling and Simulation (3 hrs.
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 cross-listed with ME 580. Prerequisites: ECE 371, ECE 380 or equivalent.

ECE 581 Astrodynamics (3–0)
3 hrs.
A course in celestial dynamics as applied to space travel. Students will learn the basics of satellite orbit definition, determination, and navigation. While the general n-body problem will be taken up, the emphasis will be placed on the calculation of geocentric and heliocentric orbits. The primary application will be satellite systems as applied to the Global Positioning System. This course is cross-listed with ME 581. Prerequisite: ECE 258.

ECE 585 Mechatronics (3–0)
3 hrs.
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 cross-listed with ME 585. Prerequisites: ECE 210, ME 258 and ECE 371 or ME 363.

ECE 586 System Identification (3–0)
3 hrs.
This is a course in model determination. Students will learn the basics of defining system structure and techniques for finding parametric values. The emphasis will be placed on the application of modeling to practical problems in the student's specific discipline. The course is cross-listed with ME 586. Prerequisite: ECE 580 or ME 580.

ECE 591 Real-time Embedded System Seminar (1 hr.
First of a three semester seminar sequence that provides students opportunities to 1) meet with engineering and scientific experts and discuss the theory and practice of RTES design and implementation, and 2) present technical RTES material to a peer group of students and faculty. Prerequisite: Senior standing in computer engineering.

ECE 592 Real-time Embedded System Seminar II (1 hr.
Second of a three semester seminar sequence that provides students opportunities to 1) meet with engineering and scientific experts and discuss the theory and practice of RTES design and implementation and 2) present technical RTES material to a peer group of students and faculty. Prerequisite: ECE 591.

ECE 595 Introduction to Advanced Topics (3–0)
3 hrs.
To introduce students to advanced topics in electrical/computer engineering not included in other course offerings. May be taken more than once up to six hours.

Open to Graduate Students Only

ECE 605 Advanced Microprocessor Applications (4–0)
4 hrs.
Selected topics on designing high-performance microprocessor systems. System design for contemporary RISC and CISC processors. Interfacing to high-speed parallel system buses. Shared memory and cache memory design. Prerequisite: ECE 451 or equivalent.

ECE 636 Applied Optics and Optical System Design (3 hrs.
Classical and conventional optical methods in use by the engineering and research community. More, 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. This course is cross-listed with ME 636. Prerequisite: Consent of instructor.

ECE 640 Electronic Instruments (3–0)
3 hrs.
Analysis of instrumentation systems including basic instrumentation concepts, dynamic analysis of instruments, transducers, classical analog methods, digital methods and application. Prerequisites: ECE 320, ECE 371, ECE 251.

ECE 641 Electronic Instrumentation II (3–0)
3 hrs.
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. Prerequisite: ECE 640.

ECE 650 Advanced Computer Architecture (3–0)
3 hrs.
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. Prerequisites: ECE 355, ECE 357.
ECE 651 Objects, Architectures, and Parallel Computation
3 hrs.
An introduction to distributed computing systems operation and design including interprocessor communication techniques, consensus, distributed control, and fault tolerance with an emphasis on real-time environments. Current publications on distributed computing systems design will be surveyed.
ECE 690 Computer Engineering Seminar (1-0)
1 hr.
This seminar provides students with opportunities to meet with engineering and scientific experts and discuss the theory and practice of real-time embedded system design and implementation. It is also an opportunity for students to present technical RTES materials to a peer group and faculty. Prerequisite: Graduate standing in computer engineering.

ECE 693 Real-Time Embedded System Seminar III
1 hr.
Third of a three semester seminar sequence that provides students opportunities to 1) meet with engineering and scientific experts and discuss the theory and practice of RTES design and implementation, and 2) present technical RTES material to a peer group of students and faculty. Prerequisite: ECE 591.

ECE 695 Topics in Electrical and Computer Engineering (3-0)
3 hrs.
Special topics in advanced area of Electrical Engineering or Computer Engineering not included in other courses. May be repeated for credit with a different topic for up to 6 hours maximum. Prerequisite: Consent of instructor.

ECE 697 Problems in Electrical and Computer Engineering
1-6 hrs.
Special problems based on individual need or interest under the direction of a member of the graduate faculty. Open to Graduate Students Only—Please refer to The Graduate College section for course descriptions.

ECE 700 Master's Thesis
6 hrs.

ECE 710 Independent Research
2-6 hrs.

ECE 725 Doctoral Research Seminar
2-6 hrs.

ECE 730 Doctoral Dissertation
15 hrs.

INDUSTRIAL AND MANUFACTURING ENGINEERING

Program Options and Requirements

THESIS OPTION

Program Requirements

1. An approved integrated program with a minimum of 30 hours of graduate work, distributed as follows:

INDUSTRIAL AND MANUFACTURING ENGINEERING
The scope of the graduate program includes studies in the areas of engineering, technical resources management, and industrial leadership. The program requires completion of a minimum of thirty semester hours beyond the entry level prerequisites in the student's program.

**Admission Requirements**

1. Possesses 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.

**Program Requirements**

The Master of Science in Engineering Management requires a minimum of thirty (30) hours:

2. Elective courses (12 hours at minimum) to be selected from graduate courses available in the Department of Industrial and Manufacturing Engineering, or any other department within the University. Among the electives is IME 697, with a written report and oral presentation. 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.
3. An overall 3.0 grade point average.

**Master of Science in Manufacturing Engineering**

**Advisor:** Paul V. Englemann, Room F-232 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 costing design.

**Admission Requirements**

A candidate for admission must possess a baccalaureate degree from a recognized program in engineering, physics, mathematics, or other field related to engineering. A candidate for admission must also:

1. Possess a grade point average of 3.0 or better during the last two years of undergraduate work.
2. Submit GRE (Graduate Record Examination) scores from the General Test.
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 of knowledge and requires students to conduct a significant, focused field study, and to complete a dissertation research project.

Admission Requirements
Application materials may be obtained from the Office of Admissions and Orientation, Graduate Admissions and from the Department of Industrial and Manufacturing Engineering. International students must contact the Office of International Student Services 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 section. Students 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 accredited undergraduate program, including at least five courses in industrial engineering. Three letters of recommendation must be submitted. Students not having these requirements will be deemed conditionally admitted, with full admission granted upon completion of additional prerequisites.

Advisory Requirements
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 four members of the Department of Industrial and Manufacturing Engineering, and one or more outside examiners.

Candidacy Requirements
The applicant must seek candidacy no later than the end of the third calendar year after enrollment in the Ph.D. program. By this time the student should have completed the coursework and have a preliminary plan for the dissertation endorsed by his/her dissertation committee. To be admitted to candidacy, the student must successfully complete the comprehensive examination. This exam, administered by the doctoral committees, 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 questions are designed to evaluate the student's knowledge in the engineering management area of concentration as well as his/her area of specialization. The oral component will be administered by the doctoral committee. The student's performance in this exam will be 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.

Program Requirements
In addition to the Graduate College requirements, the following requirements must be fulfilled:

1. Eighteen (18) hours of core courses beyond the baccalaureate. A student with a master's degree may be eligible to take up to thirty-six (36) 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 required coursework 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-four (24) credit hours of 500-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 500-level courses beyond the master's degree can be applied to the Ph.D. program.

2. Twelve (12) credit hours must be earned in each of the following areas:
   a. Eighteen (18) hours of core courses with three (3) hours of IME 725 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 elective courses chosen from the graduate offerings of Industrial and Manufacturing Engineering or other departments appropriate to the student's research interest as mutually agreed upon by the student and the dissertation committee.
   e. Six (6) hours of electives related to teaching methodology.
   f. Six (6) hours of IME 712, Professional Field Experience.
   g. Fifteen (15) hours of IME 730, Doctoral Dissertation.

3. Successful completion of the comprehensive examination after completion of all coursework.

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.

6. Residency Requirement: Enrollment on campus for four consecutive semesters or sessions.

7. Research Tool: The required research tools are computer programming and statistics.

Financial Assistance
The Department of Industrial and Manufacturing Engineering 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.

Industrial and Manufacturing Engineering Courses (IME)

IME 502 Advanced Industrial Relations (3-0) 3 hrs.
Interplay among government agencies, labor organizations, and management. Emphasis is placed on the application of these techniques to manufacturing related problems. This course cannot be applied for credit toward the Master of Science degrees in engineering management or industrial engineering.
Prerequisites: MATH 122 or MATH 200, STAT 260 or STAT 366, or equivalent.

IME 504 Manufacturing Engineering Fundamentals (3-3) 4 hrs.
This course reviews the fundamental principles in Computer-Aided Design, materials, and manufacturing processes. Topics covered include: CAD/CAE procedures, computer programming, Numerical Control (N/C) programming, graphical N/C programming systems, and Statistical Process Control (SPC). The laboratory includes hands-on experiences with commercial CAD/CAM systems, N/C machines, and instrumentation. Emphasis is placed on the use of these techniques to manufacturing related problems. This course cannot be applied for credit toward the Master of Science in Manufacturing Science. This course may be used to meet the stated prerequisite requirements normally satisfied by IME 246, IME 359, and IME 451 in the graduate program. Prerequisites: MATH 122 or MATH 200, CS 104 or CS 105, IME 142 and IME 254.

IME 503 Manufacturing Materials Fundamentals (2-3) 3 hrs.
The course is focused upon the study of identification, properties, processing, applications, and testing techniques of industrial materials. Topics discussed include: plastics, metals, ceramics, wood, and composites materials. Analysis and property definition utilizing standardized (appropriate) testing techniques will be carried out for selected industrial materials. Processing of plastics and composites will be investigated. This course...
cannot be applied for credit toward the Master of Science in Manufacturing Science. This course may be used to meet the stated prerequisite requirements normally by IME 250 and CMD 256 in the graduate program.

IME 505 Continuous Improvement in Operations (3-0) 3 hrs.

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.

IME 507 Computer Integrated Manufacturing (3-0) 3 hrs.

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. Prerequisite: Course in computer programming.

IME 508 Advanced Quality Management (3-0) 3 hrs.

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. Prerequisite: IME 316 or 328 or 501 or equivalent.

IME 512 Management of Service Operations (3-0) 3 hrs.

Determination of the process capability and controlling them are discussed. The synthesis of automated design, analysis, design of manufacturing systems are presented. Topics include Queueing Theory, Decision Analysis, Dynamic Programming, Scheduling, and Meta-heuristics. Prerequisites: IME 311 and MATH 667.

IME 542 Human Factors Engineering (3-0) 3 hrs.

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. (Cross-listed with PSY 542).

IME 546 Concurrent Engineering (3-0) 3 hrs.

The synthesis of automated design, analysis, and manufacturing processes through integrated computer systems. Topics in automated graphics, wire-frame, surface and solids modeling, boundary element analysis, and manufacturing process generation will be investigated. Prerequisite: CAD experience.

IME 550 Advanced Plastics Processing (3-0) 3 hrs.

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. Prerequisites: Basic understanding of plastics processing as documented on work record.

IME 557 Topics in Industrial and Manufacturing Engineering (3-0) 3 hrs.

Group study of special topics in industrial engineering and technology. The specific topic will be shown in the course title when scheduled. May be repeated for credit with a different topic. Prerequisite: Consent of instructor.

IME 560 Concepts and Principles of Engineering Management (3-0) 3 hrs.

An analytical approach to the planning and design of manufacturing facilities and material handling systems. Prerequisite: IME 404, 414, or permission of instructor.

IME 566 Capital Budgeting and Cost Analysis (3-0) 3 hrs.

An introduction to the concepts of supervision with particular design for those who have had little or no previous academic orientation to the principles, concepts, and philosophy of industrial supervision.

IME 604 Facilities Planning and Design (3-0) 3 hrs.

An introduction to the concepts of supervision with particular design for those who have had little or no previous academic orientation to the principles, concepts, and philosophy of industrial supervision.

IME 608 Linear Programming for Engineers (3-0) 3 hrs.

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.

IME 645 Design for Manufacturability (3-0) 3 hrs.

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.

IME 650 Plastics Processing Improvement (3-0) 3 hrs.


IME 664 Nontraditional Manufacturing Processes (3-0) 3 hrs.

Nontraditional manufacturing processes may use electric currents, amplified light, gases, loose abrasives, chemical solutions, explosives or water to convert materials that are sometimes difficult to process by conventional methods. Topics include nontraditional manufacturing methods, process capabilities, tooling, and fixtureing.

IME 658 Material Selection and Processing (3-0) 3 hrs.

Properties of metals, ceramics, polymers, wood, and composites. Factors in selection of materials and their fabrication process. Failure mechanisms and prevention. Prerequisite: An introductory course in engineering materials or permission of instructor.
IM 657 Studies in Industrial Engineering (3-0) 
3 hrs. 
Advanced work organized around topics of current interest in engineering and technology. The specific topic will be shown in the course title when scheduled. May be repeated for credit with a different topic. Prerequisite: Consent of instructor.

IM 658 CAM Applications (3-0) 
3 hrs. 
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. Prerequisite: IME 507.

IM 681 Process Monitoring and Control (3-0) 
3 hrs. 
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. Prerequisite: An introductory course in statistics.

IM 683 Thesis Proposal (1-0) 
1 hr. 
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. Prerequisite: Approval of advisor preceding enrollment.

IM 697 Problems in Industrial and Manufacturing Engineering 
3 hrs. 
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.

IM 699 Practical Training 
1-12 hrs. 
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. May be repeated. Graded on a Credit/No Credit basis.

Open to Graduate Students Only—Please refer to The Graduate College section for course description.

IM 700 Master's Thesis 
6 hrs.

IM 712 Professional Field Experience 
2-12 hrs.

IM 725 Doctoral Research Seminar 
2-6 hrs.

IM 730 Doctoral Dissertation 
15 hrs.

INDUSTRIAL DESIGN 
James K. Nelson, Jr., Chair
Alvaro Correa
Roman Rabiej

The Department of Industrial Design offers a Bachelor of Science in Industrial Design. Please see the 2003—2005 Undergraduate Catalog for more information about this program and the undergraduate courses offered by the Department.

MATERIALS SCIENCE AND ENGINEERING 
James K. Nelson, Jr., Chair
Pnina Ari-Gur
Valory Biznyuk

The Department of Materials Science and Engineering offers the Master of Science in Materials Science and Engineering. Courses are offered at times to enable working students to study without quitting their jobs. The program is designed to enable qualified full-time students to complete their studies within two years and fully employed students within three years.

Master of Science in Materials Science and Engineering

Advisor:
Pnina Ari-Gur, Ph.D.
Room G-250 Parkview Campus

This degree program is designed to provide career advancement training for engineers and scientists working in the industry, as well for recent BS and BSE degree graduates. The program is aimed at graduates of engineering or physical sciences curricula.

Admission Requirements
1. An undergraduate degree in an engineering field or in geology, physics, chemistry, or biology. The degree must include calculus through differential equations, at least two semesters of calculus-based physics, and at least four credit hours of chemistry. Based on the candidate's background (experience and course-work), the graduate committee may require the incoming student to take some undergraduate courses.
2. A grade point average of 3.0 or better (A=4.0) in the last two years of undergraduate work.

Applicants with grade point averages lower than 3.0 may be granted permission to take Graduate Class or PTG status and allowed to establish eligibility for regular admission by completing six hours of approved graduate courses with a grade of "B" or better in each course. Once the student is admitted to the program, no more than nine hours of work taken under PTG status will be considered part of a degree program.

Program Requirements:
To graduate, students will be required to take thirty-two credit hours that must include the following:
1. Complete at least eighteen credit hours of course work selected from the list of core courses. These courses will both broaden and deepen the students' knowledge of materials. The accumulated information will enable them to characterize materials, select materials wisely for demanding applications, analyze and avoid materials failure, develop new materials, improve processes, and conduct research. The list of core courses, each for three hours of credit, follows: ME 573 Engineering Materials; ME 652 Mechanics of Composite Materials; ME 654 Composite Materials; ME 655 Advanced Materials Science; MSE 532 Wood Science and Engineering; MSE 565 Ceramics: Structure and Properties; MSE 559 Physical and Mechanical Properties of Polymers; ME 651 Composite Science and Engineering; MSE 653 Advanced Physical Metallurgy; MSE 658 Structure of Polymers and Composites; MSE 657 Analysis of Metal Forming; GEOS 611 Mineral Analysis.
2. Elect eight credit hours of course work to suit the interests and needs of individual students. A graduate advisor will assist the students in tailoring a course program to fit their interests.
Materials Science and Engineering Courses (MSE)

Open to Upperclass and Graduate Students
MSE 532 Wood Science and Engineering (2-2) 3 hrs.
Scientific study of dendrology and forest products industry. A study of the relationship between the macro and microscopic structure in wood and wood based composites as they relate to Engineering Design. Laboratory activities will involve machining theory, wood fluid relationships, and wood stabilization. Prerequisites: MATH 374, PHYS 207, ME 250, and consent of instructor.

MSE 559 Physical and Mechanical Properties of Polymers (3-0) 3 hrs.

MSE 566 Ceramics: Structure and Properties (2-2) 3 hrs.
Ceramic crystalline structure. Structure imperfections, deformation, and failure of ceramic materials. Processing, properties, and toughening mechanisms. Design with and applications of ceramic materials. Prerequisites: MATH 374, PHYS 207, ME 250, and consent of instructor.

Open to Graduate Students Only
MSE 651 Corrosion Science and Engineering (3-0) 3 hrs.
Corrosion and environmental degradation of metals, alloys, ceramics and polymers. Causes, theoretical background, methods of protection and design for prevention. Prerequisites: MATH 374, PHYS 207, ME 250 and consent of instructor.

MSE 653 Advanced Physical Metallurgy (3-0) 3 hrs.
Review of dislocation theory. Interactions of dislocations with point defects, other dislocations and surfaces. Electronic structure and physical properties. Advanced metallographic techniques. Prerequisites: MATH 374, PHYS 207, ME 250, and consent of instructor.

MSE 657 Analysis of Metal Forming 3 hrs.

MSE 658 Structure of Polymers and Composites (3-0) 3 hrs.

MSE 695 Advanced Topics in Materials Science 3 hrs.
A specialized course dealing with some particular advanced area of materials science not included in other course offerings. May be repeated for credit with a different topic up to 6 credits. Prerequisite: Consent of advisor.

MSE 697 Problems in Materials Science and Engineering 1-6 hrs.
Special problems based on the individual need or interest under the direction of a member of the graduate faculty. May be repeated 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—Please refer to the Graduate College section for course description
MSE 700 Master’s Thesis 6 hrs.

MECHANICAL AND AERONAUTICAL ENGINEERING

Dr. Parviz Merati, Chair
Main Office: F-234 Parkview Campus
Telephone: 276-3414
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URL: http://www.mae.wmich.edu

Johnah Ari-Gur
Christopher S.K. Cho
MaraLikhar Ghantasala
Philip J. Gschelaar
Jerry H. Hamelin
Richard Hathaway
James Kamman
Daniel Kujawski
Ho Sung Lee
William W. Liou
Tianshu Liu
Parviz Merati
Koorosh Naghshineh
Kapseng Ro
Iskender Sahin
Ramneshwar P. Sharma
Bade Shrestha
Dennis J. VanderBrink

Master of Science in Engineering (Mechanical)

Advisor: Koorosh Naghshineh
Room G-225 Parkview Campus

Graduates with the Master of Science in Engineering (Mechanical) look forward to career opportunities at higher levels of responsibility. The areas of opportunities include, but are not limited to, mechanical system and structural dynamics, system design and controls, materials, experimental stress analysis, tribology, vehicle dynamics, experimental and computational fluid dynamics, thermal and power systems, fuel cells, 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 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. Based on Graduate Advisor's discretion, these courses can be all or a subset of ME 232, 250, 256, 257, 258, 356, 365, 431, 432, MATH 272, 374.

Probationary 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 probationary 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 Permission to Take Graduate Classes (PTG) status. If the student later decides to apply for regular admission, no more than nine hours of work taken under PTG 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.

THESIS OPTION

This option of the Master of Science in Engineering (Mechanical) consists of thirty hours, of which six must be taken as thesis.

Program Requirements:

1. A minimum of thirty (30) semester hours of credit, including eighteen (18) hours of approved courses in the area of mechanical engineering, six (6) hours of electives, and six (6) hours of ME 700 Master’s Thesis. Six (6) hours must be math-oriented.

2. A minimum of six (6) hours must be mathematics-oriented. The mathematics-oriented course selection include mechanical engineering courses (e.g., ME 550, 561, 562, 637, and 661) or electives selected from any engineering department in the College of Engineering and Applied Sciences, or in mathematics, computer science, and the physical sciences.

3. Satisfactory completion of six (6) hours of ME 700, Master’s Thesis under the guidance of the thesis advisor and committee.

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.

Program Requirements:

1. A minimum of thirty-six (36) semester hours of credit, including thirty (30) hours of approved courses in the area of mechanical engineering plus six (6) hours of electives.

2. A minimum of six (6) hours must be mathematics-oriented. The mathematics-oriented courses may include mechanical engineering courses (e.g., ME 550, 561, 562, 637, and 661) or electives selected from any engineering department in the College of Engineering and Applied Sciences, or in mathematics, computer science, and the physical sciences.

Doctor of Philosophy in Mechanical Engineering

Advisor:

K. Kamal Daghishine
Room 3-225 Parkview Campus

The Doctor of Philosophy in Mechanical Engineering is designed to intensify the knowledge and comprehension of the student 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 Master of Science in Mechanical Engineering or a related engineering discipline will be required. Students in the 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 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, physics, and chemistry courses, which are prerequisites for success in doctoral studies in engineering, will also be considered in evaluating the application. The applicant must also submit the results of the verbal, analytical, quantitative, and engineering portions of the Graduate Record Examination.

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 require to take depend on the individual qualifications, level of preparation for independent research, and the needs for successful accomplishment of the dissertation.

The doctoral student must acquire through course work and demonstrate in a qualifying examination a broad knowledge and understanding of the mathematics and two of the following core areas of mechanical engineering: thermodynamics and heat transfer, fluid mechanics, structural mechanics; materials; control systems; and dynamics and vibrations. Prior to taking the qualifying examination, the student must identify a graduate advisor and obtain approval from the advisor to proceed with the examination. Intensive and successful use of a required area of competency in the research work must be approved by the dissertation committee. A minimum of 45 graduate credit hours beyond the Master of Science is required, including a minimum of 30 credit hours of course work and 15 credit hours of dissertation (ME 700). At least 18 of the 30 non-dissertation credit hours must be taken from the graduate courses of the Department of Mechanical and Aeronautical Engineering. To ensure adequate preparation for the graduation research subject, enrollment in courses from other programs must be approved by the dissertation faculty advisor. A minimum grade point average of 3.25 is required in the doctoral studies. The dissertation requirements complement the general university requirements. Details of the Ph.D. study process may be obtained from the Office of the Department of Mechanical and Aeronautical Engineering.

Mechanical and Aeronautical Engineering Courses (ME)

Open to Upperclass and Graduate Students

ME 530 Theoretical and Computational Fluid Mechanics (3–0)
3 hrs.

The theory and numerical implementation of ideal flow, viscous effects, and exact solutions of Navier-Stokes equations. Special emphasis will be placed on the solutions of partial differential equations with special emphasis on the Navier-Stokes equations and grid generation. Prerequisites: ME 356; CS 201 or CS 306.

ME 550 Materials Science I (2–0)
3 hrs.

Advanced course in both metallic and non-metallic engineering materials, including commercial alloy systems, polymers, elastomers, composites, materials, and ceramics. Prerequisites: ME 520, ME 522 or AAE 250, ME 257.

ME 553 Advanced Product Design (3–0)
3 hrs.

An engineering design project from concept to development, static and dynamic analysis, mechanical systems design and layout. Prerequisites: ME 360, 453.

ME 555 Intermediate Dynamics (3–0)
3 hrs.

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. Prerequisites: ME 255, MATH 374.

ME 558 Mechanical Vibrations (3–0)
3 hrs.

A study of the oscillatory motion of physical systems with emphasis on the effects of vibrations on the performance and safety of mechanical systems. Prerequisites: ME 258, MATH 374.

ME 560 Engineering Analysis (3–0)
3 hrs.

Application of vector analysis and differential equations to the solution of complex engineering problems. Prerequisites: ME 360 or equivalent.

ME 561 Finite Element Method (3–0)
3 hrs.

Development of finite element techniques for solution of one-, two-, and three-dimensional problems in heat transfer, fluid flow, structures, and elasticity. Prerequisites: ME 257, 356, 431, and MATH 374 or equivalent.

ME 562 Application of Numerical Methods in Engineering (3–0)
3 hrs.

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. Prerequisite: Consent of instructor.

ME 564 Engineering Noise Control (2–3)
3 hrs.

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 principles. Laboratory experiments. Prerequisites: MATH 374, ME 257.

ME 569 Principles of Fatigue and Fracture (3–0)
3 hrs.

Basics of experimental techniques and modeling used in industry to study inelastic deformations, fatigue, and fracture of engineering materials and...
structures. Prerequisite: ME 365 or consent of instructor.

ME 571 Gas Dynamic (3-0) 3 hrs. Basic equations of compressible flow, spheropolar relationships, normal and oblique shocks, Prandtl-Meyer expansion, Fanno Line and Rayleigh Line flow. Applications to nozzles, diffusers, supersonic wind tunnel, and linearized flows and methods of characteristics. Prerequisites: ME 431, 432.

ME 572 Advanced Thermodynamics (3-0) 3 hrs. Conditions of equilibrium, process and thermodynamic relations, stability of thermodynamic systems, phase transitions, chemical thermodynamics, irreversible thermodynamics, and introduction to the statistical thermodynamics. Prerequisites: ME 431, 432.

ME 573 Engineering Materials (3-0) 3 hrs. 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. Prerequisites: ME 250 or AAE 250 and ME 365 or MSE 457.

ME 575 Tribology-Principles and Applications (3-0) 3 hrs. 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. Prerequisites: ME 366, 365.

ME 580 System Modeling and Simulation (3-0) 3 hrs. 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 compiler. This course is cross-listed with ECE 580. Prerequisites: ECE 371, ECE 380 or equivalent.

ME 581 Astrodynamics (3-0) 3 hrs. A course in celestial dynamics as applied to space travel. Students will learn the basics of satellite orbit definition, determination, and navigation. While the general n-body problem will be taken up, the emphasis will be placed on the calculation of geocentric and heliocentric orbits. The primary application will be satellite systems as applied to the Global Positioning System. This course is cross-listed with ECE 581. Prerequisite: ME 258.

ME 585 Mechatronics (3-0) 3 hrs. 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 multibody servo systems. Appropriate time will be devoted to develop a sound basis in the electromechanical discipline. This course is cross-listed with ECE 585. Prerequisites: ECE 210, ME 258 and ECE 371 or ME 360.

ME 586 System Identification (3-0) 3 hrs. This is a course in model determination. Students will learn the basics of defining system structure and techniques for finding parametric values. The emphasis will be placed on the application of modeling to practical problems in the student's specific discipline. This course is cross-listed with ECE 586. Prerequisite: ECE 500 or ME 580.

ME 595 Topics in Mechanical Engineering 1-4 hrs. A specialized course dealing with some particular area of mechanical engineering not included in other course offerings. This course may be repeated for credit with a different topic to a total of six credit hours. Prerequisite: Consent of department.

Open to Graduate Students Only

ME 621 Theory of Plates and Shells (3-0) 3 hrs. Pure bending of plates (Kirchhoff theory). Rectangular, circular, and annular plates under lateral loads. Various edge conditions. Effects of transverse shear deformation (Mindlin theory). Large deflections of plates. Theory of curved thin shells. Deformations and stresses of cylindrical and conical shells. Prerequisite: ME 365 or consent.


ME 630 Advanced Fluid Dynamics (3-0) 3 hrs. Modern developments in fluid dynamics of compressible and incompressible fluid flows. Included are kinematics of fluid motion, laminar and turbulent flow in pipes, fluid machinery, and supersonic flow. Prerequisites: ME 356, 452, and MATH 374.

ME 632 Energy Resources and Conversion (3-0) 3 hrs. Availability and economic utilization of energy resources. Terrestrial and thermodynamic limitations. Energy conversion applications. Fusion and fission. Applications of solar, water, wind, and geothermal energy. Prerequisite: ME 250 or consent.

ME 633 Advanced Control Systems (3-0) 3 hrs. Digital controls, analog controls, introduction to modern control, state variable analysis, system simulation techniques, feedback control design, parameter sensitivity and stability analysis, robotics control applications. Prerequisite: ME 360.

ME 634 Digital Flight Control Systems (3-0) 3 hrs. Analysis and design of discrete and sampled-data control systems applied to aircraft and missile systems. Basic digital system concepts, mathematical models of open and closed-loop systems containing a digital computer, and Z transform analysis. Compensation techniques applied to aerospace systems. Digital filtering, including Tustin transform and pole-zero mapping. 2, 3, and 4 plane and plane analysis of system stability and performance. Computer simulation of sampled-data systems. Extensive use of commercial software tools. Prerequisites: ME 533, or equivalent, and 540.


ME 636 Applied Optics and Optical System Design (3-0) 3 hrs. Classical and conventional optical methods in use by the engineering and research community. Moore, 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. This course is cross-listed with ECE 636. Prerequisite: Consent of instructor.


ME 645 Computational Fluid Dynamics II (3-0) 3 hrs. 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. Prerequisite: ME 545.

ME 651 Advanced Strength of Materials, Elasticity, and Plasticity (3-0) 3 hrs. 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. Prerequisite: ME 453.


ME 653 Fatigue of Engineering Materials (3-0) 3 hrs. 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. Prerequisite: ME 569 or consent of instructor.

ME 654 Composite Materials (3-0) 3 hrs. Introduction to matrix and fiber materials that form the basis of modern composites. Fabrication of these materials into composites. Behavior of unidirectional and short fiber composites. Experimental characterization of composites. Fracture mechanics, fatigue, impact, and environmental effects. Prerequisite: ME 350 or consent of instructor.


ME 659 Multidisciplinary Dynamics (3-0) 3 hrs. Kinematic and dynamic analyses of constrained mechanical systems consisting of many interconnected rigid bodies. Analytical and numerical methods are presented for the one-and two-dimensional formulation and solution of the non-linear equations of motion of complex mechanical systems. Prerequisite: ME 555.
ME 661 Advanced Finite Elements (3-0) 3 hrs.
Implementation of the finite element methods: Mixed formulations, Plate bending, Time dependent problems in solid mechanics and heat transfer. Introduction to nonlinear problems. Prerequisite: ME 561.
ME 663 Structural Vibrations (3-0) 3 hrs.
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. Prerequisite: ME 555 or ME 558.
ME 664 Acoustics (3-0) 3 hrs.
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. Prerequisite: ME 564 or consent of instructor.
ME 665 Sound and Structure Interaction (3-0) 3 hrs.
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. Prerequisite: ME 564 or consent of instructor.
ME 669 Engineering Fracture Mechanics (3-0) 3 hrs.
Fundamentals of the theory of linear elastic fracture mechanics (LEFM), crack-tip opening displacement (CTOD), J-integral, R-curve, mixed-mode fracture and fracture toughness testing. Prerequisite: ME 560 or consent of instructor.
ME 671 Advanced Heat Transfer I—Conduction Heat Transfer (3-0) 3 hrs.
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. Prerequisites: ME 431, 432.
ME 672 Advanced Heat Transfer II—Convection and Radiation Heat Transfer (3-0) 3 hrs.
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. Prerequisites: ME 431, 432.
ME 673 Power Plant Design (3-0) 3 hrs.
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. Prerequisites: ME 431, 432.
ME 676 Phase Change Phenomena (3-0) 3 hrs.
ME 695 Advanced Topics in Mechanical Engineering: Variable Topics 1-4 hrs.
A specialized course dealing with some particular advanced area of Mechanical Engineering not included in other course offerings. May be repeated for credit with a different topic up to 4 credits. Prerequisite: Consent of instructor.
ME 697 Problems in Mechanical Engineering 1-6 hrs.
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 up to maximum of six hours.
Open to Graduate Students Only—Please refer to The Graduate College section for course descriptions.
ME 700 Master's Thesis 6 hrs.
ME 710 Independent Research 2-6 hrs.
ME 730 Doctoral Dissertation 15 hrs.

Master of Science in Paper and Imaging Science and Engineering
Advisor: Abhay Sharma, Room A-232 Parkview Campus

The Master of Science in Paper and Imaging Science and Engineering is designed to provide theoretical, laboratory, and pilot plant experiences which are basic to the development of professional competence in pulp, paper, and printing science and engineering. The department has leadership in the areas of pulping and bleaching, recycling and deinking, papermaking, coating, and printing, and it is internationally recognized in the fields of paper coating and coating technology. Its laboratories and equipment are the most complete of any similar academic institution featuring a semicommercial-sized thermostatic pulper, complete recycled fiber pilot plant, paper machine, coater, and printing presses.

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.

Admission Requirements
1. Applicants with science, engineering, 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 two semesters 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
Program Requirements
1. A minimum of thirty (30) semester hours of credit.
2. A minimum of fifteen (15) semester hours of Paper and Printing Science and Engineering courses, including the required courses, PAPP 620 and PAPP 650, but excluding the thesis research credits.
3. A minimum of three (3) semester hours of coursework in the Department of Paper and Printing Science and Engineering.

4. Satisfactory completion of PAPR 700, Master's Thesis (6 hrs.) based on either an experimental or theoretical topic, under the guidance of a Thesis Committee.

NON-THESIS OPTION

Program Requirements
1. A minimum of thirty-six (36) semester hours of credit.
2. A minimum of twenty-four (24) semester hours of Paper and Printing Science and Engineering courses, including PAPR 620 and PAPR 650.
3. A minimum of six (6) semester hours of course work outside the department approved by the graduate advisor.

Doctor of Philosophy in Paper and Imaging Science and Engineering

Advisor: Abhay Sharma, Room A-232 Parkview Campus

The Doctor of Philosophy in Paper and Imaging Science and Engineering is designed to prepare engineers and scientists for performing advanced research or for teaching at the university level. The emphasis of the program is on paper making processes, paper recycling, and imaging technologies.

This is a research-intensive degree, based on fundamental scientific and chemical engineering 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 made by the Graduate Advisor, 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 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 imaging science and engineering disciplines and for original research; the degree is not awarded for accumulation of course work alone. A 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 Admission and Orientation, Graduate Admissions or from the Department of Paper and Printing Science and Engineering. International students should contact the Office of International Student Services for the appropriate materials and information.

All applicants must meet the general admissions requirements for the Ph.D. specified by the Graduate College. The applicant and 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. Within three semesters, 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.

Graduate College policy requires that all doctoral students complete at least thirty 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 requirements, the student may, at the discretion of the Graduate College, complete PAPR 620 and 650, the student may be able to satisfy all the requirements and competencies with fewer than thirty 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 requirements for the Doctor of Philosophy in Paper and Imaging Science and Engineering must be fulfilled.

1. Since applicants must have a master's degree, it is expected that applicants will have finished at least twenty-four hours of graduate course work at the master's level, exclusive of seminars and research. At the discretion of the Doctoral Studies Committee, applicants may receive credit toward the doctoral course requirements for up to twenty-four hours of course work germane to paper and imaging science and engineering at the time of admission to the program. Such graduate level foundation course work may include, as examples, paper physics (PAPR 660), paper chemistry (PAPR 650), pulp and paper bleaching (PAPR 668), recycling (PAPR 655), environmental engineering (PAPR 693), digital printing (PAPR 621), and ink technology (PAPR 623).

2. The required courses PAPR 620 (Paper, Printing, and Ink) and PAPR 650 (Advanced Paper Processes) 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 Doctoral Studies Committee to ensure readiness for the research or after admission by the Dissertation Advisory Committee to remedy deficiencies revealed by the Comprehensive Examination.

2. Two research tools chosen in consultation with the Dissertation Advisory Committee from the following four options:
   a. Reading the foreign language other than English at the course level of 401 (with a grade of "B" or better).
   b. Statistics and experimental design at the level of MATH 567 (with a grade of "B" or better).
   c. Computer modeling and simulation expertise at the level of CS 581 (with a grade of "B" or better).

   d. One or more courses in biology, physics, chemistry, or engineering at the 600 level or above and approved by the student's dissertation committee.

3. An oral Comprehensive Examination will evaluate the student's knowledge of paper and imaging science and engineering and the competency of the formal dissertation research plan. The student is encouraged to take the Comprehensive Examination within one year of completion of PAPR 620 and 650. It is expected that all students will demonstrate knowledge of the fundamentals of paper and imaging science and engineering through the level of PAPR 620 and PAPR 650; additional expected knowledge and competency will be specific to the student's proposed research. The Doctoral Studies Committee may give a rating of "Pass" on the Comprehensive Examination; or may give a rating of "Conditional Pass." The student will be required to retake the Comprehensive Examination in a subsequent semester or term. A second failure will result in dismissal from the program.

4. Full-time enrollment on campus for at least three semesters.

5. Completion of at least one University-sponsored TA training workshop and completion of six hours of PAPR 713, Teaching Practicum. The third course requirement will be earned by observing a faculty member teach a class and by preparing to teach that course under the guidance of a faculty member. The second course will be earned by having primary responsibility for teaching one course under the guidance and supervision of a member of the department's Dissertation Advisory Committee.

6. Completion of at least six hours of PAPR 725, Research Seminar. The objective of this requirement is to participate in discussion of recent research findings which may be used in the student's research and to gain practice in the presentation of research results.

7. Completion of six to ten hours of PAPR 735, Graduate Research. The objective of this requirement is to ensure that the student chooses the dissertation topic, and carries out the research needed for the dissertation under the guidance of the Dissertation Advisory Committee.

8. Completion of at least twelve hours of PAPR 730, Doctoral Dissertation. The objective of this requirement is to ensure that the student carries out the research needed for 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. The student, with approval of the Dissertation Advisory Committee, may choose between two dissertation options.
   a. 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 contribution of the research.
   b. Option 2: The student will present at least four 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.
Financial Assistance
The Department of Paper Engineering, Chemical Engineering, and Imaging 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.

Imaging Course (IMAG)
Open to Upperclass and Graduate Students
IMAG 510 Printability Analysis (2-3)
3 hrs.
Relationships between printed substrate, ink, printing process and resulting print quality from both the theoretical and measurement standpoints. 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 that include modern optical methods of light interaction with both printed and unprinted substrate, spectrophotometry, and image analysis. Prerequisite: PAPR 204 or IMAG 250.

Paper Engineering and Paper Science Courses (PAPR)
Open to Graduate Students Only
PAPR 620 Surface and Colloid Chemistry (3-0)
3 hrs.
Intermolecular forces are considered in detail to build a sound background for consideration of surface and colloid 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.

PAPR 621 Nonimpact Printing (2-3)
3 hrs.
A detailed analysis of the interrelationships of paper and the printing process. Testing methods for printing smoothness, ink receptivity, picks and runnability are the major areas of concentration. Printing problems and quality are also considered as they are influenced by paper, coating, ink, and press conditions and operations.

PAPR 621 Nonimpact Printing (2-3)
3 hrs.
Nonimpact printing processes are discussed in terms of fundamental printing mechanisms. The effects of substrate, paper, for example, properties of the printing processes are considered. Processes discussed include electrophotography, electrostatic, and ionography. Prerequisites: PAPR 342 or 357 or equivalent.

PAPR 640 Coating Rheology (2-3)
3 hrs.
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.

PAPR 641 Coating Formulations (2-3)
3 hrs.
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.

PAPR 650 Advanced Paper Processes (3-0)
3 hrs.
Advanced treatment in the production of paper starting at stock preparation, including paper coating, converting, and printing. Particular emphasis on relationship of paper making to production of printing papers. Role of recycled fibers.

PAPR 655 Recycling and Deinking (3-0)
3 hrs.
Survey of current technology relevant to recycling of paper. Fundamental mechanisms involved. Future trends and research needs.

PAPR 660 Mechanics and Optics of Paper and Fibers (2-3)
3 hrs.
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, statistics, reflection, absorption, transmission, and light scattering of these systems will be covered.

PAPR 680 High Polymer Topics (3-0)
3 hrs.
The physical chemistry, engineering properties, and behavior of synthetic and natural polymers and their solutions are presented. Methods of characterization and significance of molecular parameters are included.

PAPR 690 Pulp and Paper Operations I (3-0)
3 hrs.
A study of unit operations integral to pulp and paper manufacturing. The interdependence, design and optimization of the unit processes are included. The pulp manufacturing and chemical recovery phases are emphasized.

PAPR 691 Pulp and Paper Operations II (3-0)
3 hrs.
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.

PAPR 693 Environmental Systems Engineering (3-0)
3 hrs.
The course will focus on the environmental issues associated with the pulp and paper industries. Air, water, solid waste, thermal, and noise emissions, control processes, economic, and legal issues will be studied in concert with the operation of pulp and paper manufacture.

PAPR 695 Graduate Topics in Paper/Printing (1-4)
1-4 hrs.
A special course dealing in some particular subject of interest in pulp and paper and/or printing. May be repeated with different topics. Prerequisite: Permission of the instructor.

PAPR 696 Paper Industry Control Systems (3-0)
3 hrs.
A study of the control of pulping and paper-making processes with emphasis on computer control strategies and the sensors and instrument systems unique to the pulp and paper industry. Areas covered include process control concepts, process response analysis, digital and distributed digital control systems, programmable logic controllers and other hardwares of control loops.

PAPR 698 Pulping and Bleaching (3-0)
3 hrs.
The course will cover principles of kraft and sulfate 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, dichlorine, hydrogen peroxide, oxygen, and ozone. Various bleaching sequences that are currently in practice and under development will be discussed. Prerequisites: PAPR 203, 333.

PAPR 699 Pilot Plant Research (1-4)
1 hr.
Research experience using the department's pilot 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 6 hours.

Open to Graduate Students Only—Please refer to The Graduate College section for course descriptions.

PAPR 700 Master's Thesis (6 hrs.

PAPR 710 Independent Research (2-6 hrs.

PAPR 712 Professional Field Experience (2-12 hrs.

PAPR 713 Practicum in Teaching in the Discipline (3 hrs.

A practicum in teaching in paper and imaging science and engineering done as a collaborative effort with an experienced faculty member in an undergraduate course. Six hours are required for the doctoral degree.

PAPR 725 Doctoral Research Seminar (1-6 hrs.

Seminars presented by graduate students, faculty, and visiting lecturers concerning their research. Course is repeatable. Six hours are required for the doctoral degree.

PAPR 730 Doctoral Dissertation (12 hrs.

PAPR 735 Graduate Research (2-10 hrs.

PAPER ENGINEERING, CHEMICAL ENGINEERING, AND IMAGING 163
The mission of the College of Fine Arts is to provide scholarly activity, creative experiences and research that inform and support instruction, performance and exhibitions. In addition, the College must provide the resources that will allow students to become effective performers, artists, educators, practitioners, scholars, researchers and specialists in their chosen disciplines. These professionals will be sensitive and experienced in working with diverse populations in schools, arts organizations, communities and families. Critical to the mission are the constant evolution of effective instruction for students; the exploration of meaningful and ever-changing aesthetic issues; educational and artistic partnerships throughout the region; and national and international outreach that enriches the lives of all. Further, the College of Fine Arts embraces a public purpose to elevate the human condition through the arts. The Goals are:

- to graduate students who will be artist-practitioners in the various art forms;
- to train teachers who will perpetuate the strong traditions of the arts;
- to train therapists to use the arts in a healing capacity;
- to prepare scholars who will continue to disseminate historical and theoretical information;
- to foster an appreciation of the arts among general university students, who will constitute the growing body of people whose lives are enriched by the arts;
- to contribute to the cultural life of the university and the greater Kalamazoo community;
- and to expand our outreach nationally and internationally.

COLLEGE OF FINE ARTS
Master of Fine Arts in Performing Arts Administration

This professional degree program leading to a Master of Fine Arts is designed to prepare graduate students to function effectively in administration positions. The program of study is designed to provide students with skills and knowledge of administration in dance, music, or theatre in areas of planning, budgeting, volunteerism, public relations, leadership, fund raising, and evaluation. Under the guidance of the Director of the M.F.A. program, students will be placed for their practicum experience with local arts organizations. The Field Experience entails placement in disciplines of choice for an extended internship with national arts organizations.

Admission requirements

1. An undergraduate degree with a major in dance, theatre, or music with a 3.0 grade point average. Applicants with other majors will be reviewed on a case-by-case basis and may be asked to submit additional material.
2. A completed application for admission with two official transcripts from all previous undergraduate and graduate institutions.
3. A current resume.
4. A Personal Statement of Purpose, approximately 1,000 words in length, outlining reasons for seeking admission to the program.
5. At least two letters of recommendation.

Program requirements

1. Arts Administration Courses (38 hrs.)
   - Fundraising
     PADM 587 Fund Raising for Nonprofit Organizations (2 hrs.)
   - Audience Development
     THEA 560 Audience Development (2 hrs.)
   - Volunteers
     PADM 582 Volunteer Recruitment and Retention (1 hr.)
     SOC 674 The Nonprofit Sector in Society (3 hrs.)
   - Financial Planning
     PADM 586 Budget Development for Nonprofit Organizations (2 hrs.)
     PADM 589 Accounting and Financial Reporting in NPO (3 hrs.)
   - Board of Trustees
     PADM 580 Nonprofit Board-Staff Relations (1 hr.)
   - General Arts Administration
     PADM 641 Administering Arts Organizations (2 hrs.)
     DANC 545 Arts Administration Seminar (1 hr.)
     EDLD 601 Evaluations in Nonprofit Organizations (2 hrs.)
     THEA 561 Facility and Ticket Office Operations (2 hrs.)
ART 165

Admission Requirements
1. An undergraduate degree with a major in art or its equivalent.
2. A completed application for admission.
3. A portfolio of slides must be submitted directly to the Graduate Coordinator of the School of Art. It should include twenty slides in the applicant’s area of concentration. The slides must be submitted in a plastic sleeve with artist’s name, size of work, year, and medium.
4. A statement of intent outlining the reasons for seeking admission to a graduate program in a specific area of concentration.
5. Three letters of recommendation for admission.
6. A current resume.

Program Requirements
1. Twelve hours in one area of concentration.
2. Six hours in advanced art history.
3. Two hours in ART 625, Graduate Seminar.
4. At the end of each student’s first and second semester, a formal review by a Graduate Committee will (a) determine continuation in the degree program; (b) delay review by one semester; (c) drop the student from further enrollment in the degree program.
5. Two hours in ART 613, Graduate Presentation. This course includes a final exhibition and oral presentation which must be approved by the student’s Graduate Committee before the Master of Arts is granted.
6. Eight hours in electives, five of which must be taken within the School of Art.

Master of Arts in Art Education
Advisors: Ellen Armstrong, John Kollig, Room 1406, Sangren Hall
Vince Torano, Graduate Coordinator Room 1404, Sangren Hall

The Master of Arts in Art Education is designed to address the needs of art educators for advanced preparation in their discipline. Required courses include credit hours in art education, art studio, and art history. Art education courses are designed to combine emphasis on research and curriculum development, and also provide strong foundations in theory and practice related to teaching art in various professional contexts. Topical seminars focus on recent issues and new developments in art education. Research in art education focuses on qualitative and quantitative research methods. Students will prepare and defend a written thesis. Advanced studio courses will provide students with opportunities to develop as artists and achieve individual goals for excellence in a range of art media. Advanced course work in art history will focus on western and non-western sources of art. All course work will be offered only during Summer II sessions. Students who follow the outlined program can complete degree requirements over four summers.

Admission Requirements
1. An undergraduate degree with a major in art or its equivalent.
2. A completed application for admission (the blue sheets of the graduate self-managed application).
3. A portfolio of twenty slides (ten slides of personal work and ten slides of student work).
4. A statement of intent outlining the reasons for seeking admission to a graduate program in art education.
5. Three letters of recommendation for admission.
6. A current resume.

ART 595

DANC 595 Season Planning and Production (2 hrs.)
PADM 641 Human Resources for Nonprofit Organizations (2 hrs.)
SWRK 623 Leadership in Nonprofit Organizations (2 hrs.)
SWRK 627 Planning in Nonprofit Organizations (2 hrs.)
Contracts FCL 681 Legal and Ethical Issues for Nonprofit Organizations (2 hrs.)
• Grant Writing PADM 649 Grant Writing for Nonprofit Organizations (2 hrs.)
• Marketing PADM 584 Promoting Nonprofit Organizations (2 hrs.)
PADM 606 Applied Research Methods (3 hrs.)

2. Arts Criticism/ Writing (6 hrs.)
   ENGL 633 Professional Writing: Form and Technique (3 hrs.)
   MUS 645 Arts: Aesthetics and Criticism (3 hrs.)
3. Arts Administration Projects (10 hrs.)
   THEA 621 Practicum in Administration (3—9 hrs.)
   GRAD 712 Professional Field Experience (6—9 hrs.)
   PADM 680 Project Paper Seminar (3 hrs.)

Students must complete the Arts Administration courses prior to (or concurrent with) the initial enrollment in THEA 612. Students must complete 36 hours prior to enrollment in GRAD 712. Equivalency to some courses may be available through credit by examination.

The Practicum (THEA 612) is intended to be a placement with one of the many local nonprofit arts organizations in the Greater Kalamazoo Area. The Field Experience (GRAD 712) will involve placement with a national nonprofit arts organization in the student’s area of expertise and will conclude with the Project Paper Seminar (PADM 680).
**Master of Fine Arts in Art**

**Advisors:**
- Ellen Armstrong, John Kollig, Room 1405, Sanger Hall
- Vince Torano, Graduate Coordinator, Room 1404, Sanger Hall

The sixty-hour Master of Fine Arts program is recommended as a terminal degree for practicing artists and for prospective higher education art professors. It is intended for artists who have a clear notion of their artistic purposes and are primarily interested in continuing their personal and artistic development.

**Admission Requirements**
1. An undergraduate degree with a major in art or its equivalent.
2. A completed application for admission.
3. A portfolio of slides must be submitted directly to the Graduate Coordinator of the School of Art. It should include twenty slides in the applicant's area of concentration. The slides must be submitted in a plastic sleeve with artist's name, size of work, year, and medium.
4. A statement of intent outlining the reasons for seeking admission to a graduate program in a specific area of concentration.
5. Three letters of recommendation for admission.
6. A current resume.

**Program Requirements**
1. Twenty-four hours in the major area of concentration.
2. Nine hours in art history.
3. Eighteen hours in electives, chosen in consultation with the student's faculty advisor.
4. Three hours in ART 610, Advanced Drawing.
5. Four hours in ART 625, Graduate Seminar.
6. Required reviews: At the end of each student's first and second semester, a formal review by The Graduate Program Committee will: (a) determine continuation of the degree program; (b) delay review for one semester; (c) drop the student from further degree status in the program; (d) drop the student from the M.F.A. degree status and offer the option to pursue M.A. degree status. The 45th hour review will be performed by the student's Graduate Committee who are also responsible for supervision of the remainder of the student's program of study, including the final exhibition presentation.
7. Minimum of one year residence on campus required.
8. Two hours in ART 613, Graduating Presentation. This course includes a final exhibition and thesis presentation which must be approved by the student's Graduate Committee before the Master of Fine Arts is granted.

**Art Courses (ART)**

**Open to Upperclass and Graduate Students**

**ART 510 Drawing Workshop**
- 1-6 hrs.
- Continuation of ART 310. Repeatable for credit. **Prerequisites:** ART 310.

**ART 520 Independent Study in Art History**
- 2-3 hrs.
- Problems in art history from ancient times to the present selected by the individual student in consultation with the instructor. Repeatable for credit. **Prerequisites:** ART 220, 221, and a 500-level course in the area of interest; permission of instructor.

**ART 521 Topics in Art History: Variable Topics**
- 3 hrs.
- Investigation of changing topics in art history in class or seminar sessions by advanced students. Course title varies from term to term. Repeatable for credit under a different title. **Prerequisites:** Art History major or minor with junior status of higher; MFA candidates and other undergraduate and graduate students with permission of instructor.

**ART 522 Topics in Medieval and Renaissance Art**
- 3 hrs.
- 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. **Prerequisites:** Art History major or minor with junior status or higher; MFA candidates and other undergraduate and graduate students with permission of instructor.

**ART 523 Topics in Modern Art**
- 3 hrs.
- Investigation of changing topics in modern art in seminar sessions. Advanced theory and methods are stressed. Research papers are required. Course has variable topics. **Prerequisites:** Art History major or minor with junior status or higher; MFA candidates and other undergraduate and graduate students with permission of instructor.

**ART 524 Topics in Native American and African Art**
- 3 hrs.
- Investigation of changing topics in Native American and African art in seminar sessions. Advanced theory and methods are stressed. Research papers are required. Course has variable topics. **Prerequisites:** Student must be an Art History major or minor with junior status higher; MFA candidates and other undergraduate and graduate students with permission of instructor.

**ART 525 Topics in Asian Art**
- 3 hrs.
- Investigation of changing topics in Asian art in seminar sessions. Advanced theory and methods are stressed. Research papers are required. Course has variable topics. **Prerequisites:** Art History majors or minors with junior status or higher; MFA candidates and other undergraduate and graduate students with permission of instructor.

**ART 527 Art History Methods**
- 3 hrs.
- Intensive study of the methods, literature, and research techniques used in art historical inquiry and writing. **Prerequisites:** Art History major or minor with junior status or higher; MFA candidates and other undergraduate and graduate students with permission of instructor.

**ART 529 Art History Internship**
- 1 hr.
- 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. Art History majors and minors only; registration requires approval by supervising faculty member.

**ART 530 Ceramics Workshop**
- 1-6 hrs.
- Advanced work in ceramics on an independent basis. Repeatable for credit. **Prerequisites:** ART 330.

**ART 531 Sculpture Workshop**
- 1-6 hrs.
- Continuation of ART 331. The advanced student explores the expressive possibilities of his or her own individual sculptural direction, with bronze and aluminum casting related techniques. Repeatable for credit. **Prerequisites:** ART 331.

**ART 535 Multi-Media Workshop**
- 1-6 hrs.
- Various forms of art that deviate from the conventional media, such as light, kinetic, and performance art. The student is expected to have a solid background in one of the traditional art forms, such as ceramics, painting, sculpture, printmaking, drawing, graphic design, metals, or textiles. Repeatable for credit. Permission of instructor is required.

**ART 538 Jewelry and Metalsmithing Workshop**
- 1-6 hrs.
- Advanced work in jewelry design and metalsmithing. Students collaborate with the instructor to plan a suitable and particular direction for study. Repeatable for credit. **Prerequisites:** ART 338.

**ART 540 Painting Workshop**
- 1-6 hrs.
- Continuation of ART 340. Repeatable for credit. **Prerequisites:** ART 340.

**ART 541 Printmaking Workshop**
- 1-6 hrs.
- An advanced seminar for experienced graphic students; all printmaking media available; emphasis on development of personal concepts and refinement of methods appropriate to individual needs through research. **Prerequisites:** Any 300 level print-making course. Repeatable for credit.

**ART 542 Watercolor Workshop**
- 1-6 hrs.
- Continuation of advanced watercolor techniques with emphasis on experimentation. Repeatable for credit. **Prerequisites:** ART 342.

**ART 544 Hand Papermaking**
- 1-6 hrs.
- Continuation of ART 244 and ART 344. **Prerequisites:** ART 344.

**ART 548 Photography Workshop**
- 1-6 hrs.
- Professional development through research in advanced projects. Repeatable for credit. **Prerequisites:** ART 448.

**ART 552 Preparation for Art Teaching**
- 3 hrs.
- A course designed to investigate: the current problems and issues on the social scene which affect teaching and learning in the visual arts at all levels of the public school, the creative person, product, process, and press (environment); the phenomena of perceptual learning; the actual construction of an operant art curriculum for the elementary, middle, and high school programs. **Prerequisites:** ART 452 and art major status.

**ART 553 Independent Studies in Art Education**
- 1-6 hrs.
- 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.) This course is open to graduate and non-degree level students. **Prerequisites:** 252, 352, 452, 552, and permission of the art education chairperson.

**ART 556 Video**
- 1-4 hrs.
- A course that provides an advanced studio experience for students interested in working with computer tools and ideas that have affected the
growth of new visual media. The class begins with the single camera and nonlinear video production strategies, concepts, and non-linear video editing. Repeatable for credit. Prerequisites: ART 456.

ART 560 Arts Education for the Elementary Teacher 3 hrs. A studio course designed for the elementary classroom teacher to provide experiences in qualitative elementary arts and integrated arts programming in the elementary public school. Repeatable for credit.

ART 570 Intern I 3 hrs. 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. Fall and winter semester. Prerequisites: ART 351 and ART 361.

ART 571 Intern II 3-6 hrs. 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 given and the choices are determined by the depth of the project. Winter semester only. Prerequisites: ART 450 and ART 560.

ART 590 Drawing and Painting Studio 2 hrs. An instructor-directed graduate level course of study that helps the student develop a personal pictorial language, explore a variety of aesthetic concepts, investigate different processes while working with both traditional and non-traditional materials/media, and become familiar with contemporary art theories in drawing and painting. The primary focus of this course of study is on the making of original works of art and integrating new understandings into one's personal pedagogy. Prerequisites: Admission to Master of Arts in Art Education program.

ART 592 Photography Studio 2 hrs. An instructor-directed graduate level course of study that helps the student develop a personal pictorial language, explore a variety of aesthetic concepts, investigate different processes while working with both traditional and non-traditional photography media and materials. Students will become familiar with contemporary art theories related to photography. The primary focus of this course of study is on the making of original works of art and integrating new understandings into one's personal pedagogy. Prerequisites: Admission to Master of Arts in Art Education program.

Open to Graduate Students Only

ART 610 Advanced Drawing 1-6 hrs. Graduate level work in drawing. Repeatable for credit. Prerequisites: ART 510 and official admission to an Art graduate program.

ART 613 Graduating Presentation 2 hrs. Preparation and presentation of graduating exhibition, portfolio, and oral examination with the assistance of the student's major advisor. Evaluated by the student's Graduate Committee. Prerequisites: Last year of graduate study.

ART 620 Independent Study in Art History 1-3 hrs. Problems in art history from ancient times to the present selected by the individual student in consultation with the instructor. Repeatable for credit. Prerequisites: ART 220, 221, and a 500-level course in the area of interest or the equivalent; permission of instructor.

ART 621 Graduate Topics in Art History 3 hrs. Graduate level seminar in art history covering various topics, ranging from prehistoric to modern periods.

ART 625 Graduate Art Seminar 1 hrs. A survey, investigation, discussion, and evaluation of selected topics in contemporary art and associated practicum activities. Topics for investigation may include: Exhibition Preparation in Galleries and Museums: the Artist and the Market; Technology and Computers in Art; Funding Artists and Art Programs; Artists and Society; The Audience and Formation of Taste; Moral Philosophy and Art. Graded on a Credit/No Credit basis. Prerequisites: Open to graduate students.

ART 630 Advanced Ceramics 1-6 hrs. Graduate level work in ceramics. Repeatable for credit. Prerequisites: ART 530 and official admission to an Art graduate program.

ART 631 Advanced Sculpture 1-6 hrs. Graduate level work in sculpture. Repeatable for credit. Prerequisites: ART 531 and official admission to an Art graduate program.

ART 635 Advanced Multi-Media Art 1-6 hrs. Graduate level work in Multi-Media Art. Repeatable for credit. Prerequisites: ART 535.

ART 640 Advanced Painting 1-6 hrs. Graduate level work in painting. Repeatable for credit. Prerequisites: ART 540 and official admission to an Art graduate program.

ART 641 Print Workshop/Seminar 1-6 hrs. Advanced research in development of personal concept, method, and uses of graphic processes. Emphasis on personal expression; exploration toward an individual and mature imagery. Prerequisites: ART 541 and official admission to an Art graduate program.

ART 642 Advanced Watercolor 1-6 hrs. Graduate level work in watercolor. Repeatable for credit. Prerequisites: Official admission to an Art graduate program.

ART 645 Advanced Graphic Design 1-6 hrs. Graduate level work in graphic design. Repeatable for credit. Prerequisites: ART 545 and official admission to an Art graduate program.

ART 648 Advanced Photography 1-6 hrs. Graduate level work in photography. Repeatable for credit. Prerequisites: ART 548 or equivalent experience and official admission to an Art graduate program.

ART 651 Art Education Theory 3 hrs. Theories of art and education as they influence art education theory and practice. Includes discussion of various historical and contemporary viewpoints in aesthetics, elitism, art history, art studio for teaching, and discussion of historic and recent developments in art education. Prerequisites: Admission to Master of Arts in Art Education program.

ART 652 Recent Topics in Art Education 3 hrs. 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 in Art in Education. Must be repeated once, under a different topic. Prerequisites: ART 651.

ART 653 Research in Art Education 3 hrs. 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 655. Prerequisites: ART 651 and six credits of ART 652.

ART 655 Graduate Project in Art Education
2-4 hrs.
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 653. 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 directed 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 651, 6 credits of ART 652, and ART 653.

ART 690 Advanced Studio
2 hrs.
An advanced graduate level course in studio. Students choose advanced work in a studio that continues work begun during a previous semester. The choices are painting and drawing, photography, digital imaging, sculpture, ceramics, printmaking, or jewelry and metalsmithing. Goals for the student will be negotiated with the instructor and designed to pursue more depth and enhanced performance than the previous level.

Prerequisites: ART 590 or ART 592 or ART 593 or ART 594 or ART 595 or ART 596 or ART 597.

DANCE
Professor: Nina Nelson, Chair
Main Office: 3107 Dalton Center
Telephone: 387-5830
FAX: 387-5809

Jane Beas
David Curwen
Sharon Garber
Nina Nelson
Carolyn Pavlik

Dance Courses (DANC)
Open to Upperclass and Graduate Students
DANC 545 Arts Administration Seminar
1 hr.
To be taken in conjunction with PADM 641 Administering Arts Organizations. The seminar will offer the student an opportunity through readings and discussions to focus on those administrative issues specific to the student's art discipline.

Prerequisites: Admission to M.F.A. in Performing Arts Administration program or permission of program director.

DANC 589 Season Planning and Production
2 hrs.
This course will address two components. The Season Planning component will cover the programming of an entire season of live performances focusing on program concepts, choices of facilities, scheduling, budgeting, and marketing. The Production component will address planning, schedules, touring, front-of-house management, contracting, technical production, stage management, rehearsals, and performances.

Prerequisites: Admission to M.F.A. in Performing Arts Administration program or permission of program director.

DANC 598 Readings in Dance
1-4 hrs.
Advanced students with good academic standing may elect to pursue independently a program of readings in areas of special interest. Prerequisites: Approved application required.

DANC 599 Non-Reading Independent Study in Dance
1-4 hrs.
Advanced students with good academic standing may elect to pursue independently the study of some area of dance through the creative process. Topics are chosen and arrangements are made to suit the needs of each particular student. Prerequisites: Approved application required.

MUSIC
Dr. Richard O'Hearn, Director
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Richard Adams
John Campos
David Loberg Code
Scott Cowan
Curtis Curtis-Smith
Julie Evans
Igor Fedotov
Lin Foulk
Dorotha Gauthier
Daniel Jacobson
Stephen Jones
Renata Arman Knific
Thomas Knific
Trent P. Kynaston
David Little
John A. Lynch
Margaret Merrion
Andrew Miller
Joe Miller
Michael Miller
David Montgomery
Judy Moonert
Richard O'Hearn
Carl Patner
Robert J. Ricci
Silva Roederer
Wendy Rose
Edward Roth
Lori Sims
Christine Smith
David S. Smith
Robert Spradling
Matthew Steel
Scott W. Thornburg
Linda Trotter
Bruce Uchimura
Karen Wicklund
Brian Wilson
Steve M. Wolfinbarger
Bradley Wong
Stephen Zegree

Master of Music
Advisors:
Michael Miller (music_grad@wmich.edu),
Room 2144, Dalton Center
Brian Wilson (brian.wilson@wmich.edu),
Room 2305, Dalton Center

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: Performance, Composition, Conducting, Music Education, and Music Therapy. 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 sixty (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. Exceptions to admission requirements may be granted if competency can be demonstrated through Preliminary Examinations. Admission to the School of Music does not imply that the student will be permitted to pursue a specific area of concentration (performance, composition, etc.). Program of study will not be determined until Preliminary Examinations are taken and the student has completed 6-10 semester hours of course work. At that time a
Admission Requirements/Procedures

3. Electives to make a total of at least 30 semester hours of coursework. At that time, a recommendation for degree candidacy will be approved if the student has demonstrated a sufficient level of scholarship and musicianship. Preliminary Examinations are administered prior to entry to the graduate music program.

Areas of examination include performance, music history/literature, music theory, music therapy, functional piano, and conducting (including aural skills). The areas in which the student will be tested are determined by the choice of area of concentration.

Program Requirements

The graduate student advisor in the School of Music works closely with each student in planning and implementing a degree program which will accommodate the student's professional needs and interests and, at the same time, will realize the full value and depth of the University's graduate offerings. The student's needs are determined by an evaluation of the results of Preliminary Examinations and a review of the first 6-10 semester hours of course work taken. After this evaluation and review, the graduate advisor provides information to the student regarding probable success in the degree program and any time limitations that may apply to the student's completion of degree requirements. The program of study in each of the five areas of concentration is as follows:

PERFORMANCE (Minimum of 30-hrs.)

Admission Requirements/Procedures

Preliminary Examinations in theory, history/literature, and performance. The performance preliminary examination will determine if the student will be permitted to pursue this major area of concentration. Sight-reading may be requested. Vocal majors must demonstrate piano skills and a proficiency in French, German, and Italian diction. Deficiency course work will not apply toward the degree.

Concentration Requirements

1. Required courses: MUS 610, Introduction to Research in Music (3); MUS 660, Applied Music (8); MUS 690, Graduate Recital (2), including oral exam.
2. Cognate music studies: composition, music education, history/literature, theory, jazz studies (9-12).
3. Electives to make a total of at least 30 semester hours. Must include a 600-level music theory course and a 600-level music history course, unless already required in the program.

COMPOSITION (Minimum of 30-hrs.)

Admission Requirements/Procedures

Preliminary examinations in theory, history/literature, and placement interview—auditions in piano, composition, electronic composition, musical acoustics, and counterpoint. Before the student will be admitted to this area of concentration, the composition faculty must review and approve the student's prior composition work.

Concentration requirements

1. Required courses: MUS 610, Introduction to Research in Music (3); Music Composition 662 (8); MUS 700, Master's Thesis in Composition (6), including oral exam.
2. Cognate music studies: applied music, music education, history/literature, theory, jazz studies (9-12).
3. Electives to make a total of at least 30 semester hours. Must include a 600-level music theory course and a 600-level music history course, unless already required in the program.
4. Proficiency in keyboard must be demonstrated, but course work may not apply to degree.

MUSIC EDUCATION (Minimum of 30 hrs.)

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. Preliminary Examinations in theory and history/literature.

Concentration Requirements

1. Required courses: MUS 610, Introduction to Research in Music (3); MUS 642, Philosophy of Music Education (2); MUS 650, Seminar in Music Education (2); Culuminating option (choose a, b, or c); a) MUS 691, Special Project in Music (2) or MUS 681, Research in Musical Behavior (2) or MUS 700, Master's Thesis (6); b) oral exam (6)*; MUS 712, Professional Field Experience (2).
2. Elective music courses (6-9).
3. Non-music electives—selected from one of the following departments and including at least one course in statistics: Anthropology, Blind Rehabilitation and Mobility, Counselor Education and Counseling Psychology, Mathematics and Statistics, Occupational Therapy, Psychology, Sociology, Special Education, Speech Pathology and Audiology, Education and Professional Development (6-9).

("The student must have completed the six-month internship required for Board Certification prior to enrolling in MUS 700, Master's Thesis, and MUS 712, Professional Field Experience.

Master of Arts in the Teaching of Music

The School of Music and the Department of Education and Professional Development offer a Master of Arts in the Teaching of Music. The purpose of the degree program is to offer course work in music and teacher education which will enhance the student's teaching abilities in general, and more especially in the area of music. This degree program is accredited by the National Association of Schools of Music. A student must complete at least thirty semester hours of credit to complete this degree.

Admission Requirements

A Bachelor of Arts or Science degree, or equivalent, with a major in music, and a teaching certificate are required for admission. Students are admitted on the basis of transcripts, which must include at least forty semester hours of acceptable work in music. Exceptions to admission requirements may be granted if competency can be demonstrated through Preliminary Examinations. Program of study will not be determined until Preliminary Examinations are taken and the student has completed 6-10 semester hours of course work. At that time, a recommendation for degree candidacy will be approved if the student has demonstrated a sufficient level of scholarship.
Program Requirements

The graduate student advisor in the School of Music will assist the student in planning and implementing a degree program which will accommodate the student's professional needs and interests and, at the same time, will realize the full value and depth of the University's graduate offering. The student's needs are determined by an evaluation of the results of Preliminary Examinations and a review of the first 6-8 semester hours of coursework taken. After this evaluation and review, the graduate advisor provides information to the student regarding probable success in the degree program and any time limitation that may apply to the student's completion of degree requirements. Program requirements include:

1. Nine hours from the Education core courses: ED 602, School Curriculum (3); ED 603, Social and Philosophical Foundations of Education (3).
2. Eleven hours of Music Education courses: MUS 510, Introduction to Research in Music (3); MUS 542, Philosophy of Music Education (2); MUS 650, Seminar in Music Education (2); Elective in Music Education (2); Cullin- nating option (choose one of the following): MUS 691, Special Project in Music (2) with oral exam or MUS 681, Research in Musical Behavior (2) with oral exam, or b) eight (8) hours of pre-approved graduate courses, including written comprehensive exam.
3. Four hours in applied music, music theory, or music history/literature.
4. Six hours of electives, selected in consultation with the graduate advisor.

Music Courses (MUS)

Open to Upperclass and Graduate Students

MUS 501 Master Class
2 hrs.
The study of literature, performance practices, and techniques for a specialized musical medium (instrument or voice). Individual performance assignments will be made appropriate to each student's level of accomplishment. Class meetings may vary from small groups of students with common performance levels to meetings for the entire class for the purpose of dealing with materials and techniques common to all performers. May be repeated for credit.

MUS 514 Instrumental Chamber Music
1 hr.
A special ensemble 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.

MUS 516 Music Theatre Practicum
1 hr.
A production experience in music theatre. Each semester culminates in an opera or musical comedy production. Open to singers, actors, accompanists, instrumentalists, and persons interested in production techniques. Admission by audition or permission of the instructor. May be repeated for credit.

MUS 517 Collegium Musicum
1 hr.
Performance of early Western music. Open to all students of the University. Additional transcription, arranging, editing, and conducting of early music is required of enrolled Music History majors. Graduate students may count no more than two hours of this course for graduation. Membership by audition.
MUS 573 Classical Music (1750-1800) 2 hrs.
Examination of the chief works of Mozart and Haydn, with intensive study of symphonic form and the development of the classical opera. Prerequisites: MUS 270 and 271.

MUS 574 Romantic Music (1800-1910) 3 hrs.
Music of the important composers of the period beginning with Beethoven, along with the historical, cultural, and political background of the era. Prerequisites: MUS 270 and 271.

MUS 577 Symphonic Literature 2 hrs.
A survey of music written for symphony orchestra during the Classical and Romantic periods. Prerequisites: MUS 270 and 271.

MUS 578 Chamber Music Literature 2 hrs.
A survey of chamber music literature of the Classical and Romantic periods.

MUS 579 Operatic Literature 2 hrs.
A survey of opera from 1600 to the present.

MUS 580 Solo Literature: (topica) 2 hrs.
Solo literature for a specific medium (voice, piano, violin, etc.) will be studied from a theoretical, historical, and performance point of view. Topics to be announced. May be repeated for credit. Prerequisites: MUS 270 and 271.

MUS 581 Choral Music Literature 2 hrs.
A survey of choral music (mass, motet, anthem, cantata, oratorio) from the Renaissance through the Romantic period.

MUS 582 Wind Music Literature 2 hrs.
A survey of wind band ensembles and literature from the Renaissance period through the twentieth century.

MUS 583 Jazz History and Literature 3 hrs.
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. Prerequisites: MUS 558 or department's consent.

MUS 585 Medieval Music 2 hrs.
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 270 and MUS 271.

MUS 586 Renaissance Music 2 hrs.
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 270 and MUS 271.

MUS 587 Contemporary Music 3 hrs.
A survey of trends in European music and music of the Americas from about 1910 to the present.

MUS 588 Music Cultures of the World 3 hrs.
The topics course is designed to provide students with an intensive study of the musical traditions of a single cultural-geographic area. Attention will focus on the characteristics of instruments and instrumental ensembles, vocal traditions, sound structures, and theatrical traditions as well as the historical, political, and socio-demographic factors that shape the area's performing traditions. May be repeated for credit with different topics. Prerequisites: Consent of instructor for non-music majors.

MUS 589 Topics in Ethnomusicology 3 hrs.
This topics course examines various methods, problems, and issues in ethnomusicalogical writing and research. Topics will vary and be announced each semester. The approach taken in the course reflects current practice in the field of ethnomusicology, drawing upon theoretical writings in a variety of disciplines including ethnomusicology, musicology, anthropology, theater, cultural studies, and women's studies. May be repeated for credit with different topics. Prerequisites: MUS 270 and 271.

MUS 590 Studies in Pedagogy 1-4 hrs.
Topics to be announced. Selection will be made from the following: Piano Pedagogy, Vocal Pedagogy, String Pedagogy, Brass Pedagogy, Woodwind Pedagogy, Pedagogy of Teaching Theory, or similar topics. May be repeated for credit. Prerequisites: 300-level applied voice or permission of instructor.

MUS 594 Electronic Media 2 hrs. ($30)
The purpose of this course is to expose the student to the equipment used in various recording situations and its operations, as well as discussing the artistic use of this equipment. Although predominately a technique course, areas which affect the creative aspects of the final recording will be discussed (such as microphone placement, tasteful vs. inappropriate editing, etc.) In addition to the recording aspects, other electronic instruments used in performances will be surveyed, including synthesizers of various types (both keyboard and non-keyboard) and traditional electronic instruments (guitars, electronic organs, electronic pianos, and various sound modification devices).

MUS 596 Workshop in Music Education 1-4 hrs.
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. Prerequisites: Advisor consent.

MUS 596 Multi-track Recording 2 hrs.
A course in the theory and techniques of multi-track recording and mixing. Students begin with an in-depth study of the mechanics of a multi-track recorder and the signal flow of a recording/mixing system. Microphone techniques as well as various approaches to room setup are presented through reading assignments and studio demonstrations. Attention is given both to traditional techniques and the need for engineers to try new approaches to familiar circumstances. Students also study the most commonly used signal processors and how they might be used during recording or mixing for best results. Various listening assignments introduce students to the subtleties of mixing. A final project is required wherein each student must organize and execute a full 24-track production, from microphone selection through the final mix. Prerequisites: MUS 594 or instructor consent.

MUS 597 Projects in Music 1-4 hrs.
A program of independent study to provide the unusually qualified music student the opportunity to explore a topic or problem of interest, under the guidance of one of the faculty of the department. The topic for planning purposes must be approved by the faculty member proposed to supervise the study. Prerequisites: Application approved by School of Music.

MUS 599 Projects in Recording Technology 1-4 hrs.
An independent study allowing the unusually qualified student the opportunity to explore a topic or problem in recording technology. Prerequisites: MUS 596, approved application, and instructor permission required.

Open to Graduate Students Only

MUS 500 Applied Music 1-2 hrs. ($7)
Private lessons for the graduate student in a non-major area of performance.

MUS 600 Applied Music 1-4 hrs. ($7)
Private lessons for the graduate student in the major performance area. Includes conducting.

MUS 607 Conducting Master Class 1 hr.
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. Prerequisites: Admission to the graduate conducting program or conducting as an approved cognate.

MUS 610 Introduction to Research in Music 3 hrs.
A course in the general methods and techniques of research in the field of music. Students will complete a comprehensive bibliography, an annotated bibliography, and a research paper in the area of concentration of their graduate program of study.

MUS 614 Chamber Music Ensemble 1 hr.
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. The course may be repeated for credit. Prerequisites: Approved application.

MUS 617 Opera Workshop 2 hrs.
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 scene. Open to advanced singers, pianists, and persons interested in production techniques. Admission is by personal interview with the instructor.

MUS 640 Band Techniques and Organization 2 hrs.

MUS 641 Choral Techniques and Organization 2 hrs.
The study of choral activities in relation to organization, repertoire, style, diction, singing technique, balance, blend, tone quality, phrasing, rehearsal technique, and conducting.
MUS 642 Philosophy of Music Education 2 hrs.
Design 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.

MUS 645 Arts: Aesthetics and Criticism 3 hrs.
This course will focus on addressing the "common threads" in the performing arts utilizing theories of aesthetics and criticism as well as the elements that are unique to each discipline. Extensive readings in aesthetics and critical theory will be required, as well as the study of historical aspects of the discipline. Students will be expected to attend a number of arts performances/events in dance, music and theater disciplines, and reflect their understanding of readings and discussions through written assignments. Prerequisites: Admission to the Master of Music or the M.F.A. in Performing Arts Administration programs or permission of instructor.

MUS 650 Seminar in Music Education 2 hrs.
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.

MUS 662 Seminar in Composition 2 hrs.
The completion of an original composition of larger scope for any combination of acoustic instruments, and which may include multimedia, semantic and analysis of advanced contemporary works, discussion of current trends in music composition, and reading assignments. May be repeated for credit. Prerequisites: MUS 362 or equivalent.

MUS 664 Form in Music 2 hrs.
A survey of the musical forms, large and small, used from the Baroque period to the present day. Analysis of both structure and texture of representative works of the various periods and styles.

MUS 666 The Teaching of Theory 2 hrs.
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.

MUS 670 Seminar in Musicology 2 hrs.
A course designed to permit the student to explore selected areas of music history. A project is required which will be subject to group analysis and discussion. The course may be repeated for credit.

MUS 672 Seminar in Jazz 2 hrs.
A course designed to permit the student to explore selected areas in jazz studies. A project is required which will be subject to group analysis and discussion. The course may be repeated for credit.

MUS 674 Seminar in Music Theory 2 hrs.
A course designed to permit the student to explore selected areas of music theory. A project is required which will be subject to group analysis and discussion. The course may be repeated for credit.

MUS 679 Composers 2 hrs.
An investigation of the life and works of a significant composer. The particular composer selected for study during a given semester will be indicated in the Schedule of Course Offerings. The course may be repeated for credit when dealing with a different composer.

MUS 680 Seminar in Music Therapy 2 hrs.
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. The course may be repeated for credit.

MUS 681 Research in Musical Behavior 2 hrs.
Development and employment of research methods and techniques applied to the psychology of music and/or music education. Students enrolled in this course will be responsible for an experimental research project which, in the case of music education students, will satisfy the "terminal project" requirement (MUS 691) or, in the case of music therapy students, will provide the data basis for the required MUS 700, Master's Thesis. 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. Prerequisites: MUS 610 or ED 601.

MUS 688 Music Teaching Practicum 2 hrs.
A course for teaching assistants which provides for faculty instruction, observation, and supervision in the area of the teaching assignment. The course shall be taken during the first semester of appointment.

MUS 690 Graduate Recital 2 hrs.
Presentation of a full-length recital in the student's area of concentration (music performance 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.

MUS 691 Special Project in Music Education 2 hrs.
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. May be repeated for credit.

MUS 698 Readings in Music 1-2 hrs.
Graduate students may enroll in this course after consultation with the graduate advisor. Prerequisites: Approval of graduate advisor.

MUS 700 Master's Thesis 6 hrs.
MUS 710 Independent Research 2-6 hrs.
MUS 712 Professional Field Experience 2-12 hrs.

THEATRE

Dr. Joan Herrington, Chair
Main Office: 1105 Gilmore Theatre Complex
Telephone: 387-3224
FAX: 387-3222

Cheryl Bruyne
Jay Berikov
James Daniels
Fat Daniels, Adjunct
Patrick Donnelly, Staff
Sandy Duke, Staff
Micha Espinosa
Vince Faust, Adjunct
C. J. Gianakaris
Timothy Hanson, Staff
Joan Herrington
Leon inguissruz, Adjunct
John Jensen, Adjunct
Matthew A. Knewstom
Mark Liermann
Tom Lowry, Adjunct
Kate MacKenzie, Staff
Gwen Nagle
Paul Reinhardt, Adjunct
Greg D. Roehrick
Robert L. Smith, Adjunct
Von H. Washington
D. Terry Williams

Theatre Courses (THEA)
Open to Upperclass and Graduate Students

THEA 560 Audience Development 2 hrs.
This course will focus on the goals, functions, and means of audience development, with special attention to audience education in the arts. Topics will include the use of quantitative and qualitative analytical techniques to determine bases for creating programs to reach targeted, potential audiences based on demographics; developing master classes, residencies, special presentation, instructional material and post-performance experiences for targeted groups; and methods of evaluating the results of specific programs developed for a specific purpose. Prerequisites: Admission to the M.F.A. in Performing Arts Administration or permission of program director.

THEA 561 Facility and Ticket Office Operations 2 hrs.
This course will address issues in facility management for presenting and producing performances and special events (e.g., handling food service for premieres and openings of shows, fundraisers, rentals, etc.) with consideration for the size of the performance space including an overview of the physical operations of such a facility, and the use of auxiliary spaces (e.g., Miller Auditorium, Gilmore Theatre Complex, Dalton Center Recital Hall, Multi-Media Room, Dance Studio B, etc.). The course will also include basics of setting up and running a ticket office for both manual and computerized systems, as well as special sales, audit requirements and artist payments based on percentages. Personnel requirements will be included in relation to the variable above. Prerequisites: Admission to the M.F.A. in Performing Arts Administration or permission of program director.

Open to Graduate Students Only

THEA 632 Practicum in Arts Administration 3-9 hrs.
Students in the M.F.A. in Performing Arts Administration will be placed with area arts organizations and at some campus sites (e.g., Miller Auditorium) in situations where they will work alongside professionals in various aspects of arts administration. These experiences may take place during various times of the academic year and are offered for variable credit to allow for the greatest flexibility. Prerequisites: Admission to the M.F.A. in Performing Arts Administration or permission of program director.

THEA 632 Practicum in Arts Administration 3-9 hrs.
Students in the M.F.A. in Performing Arts Administration will be placed with area arts organizations and at some campus sites (e.g., Miller Auditorium) in situations where they will work alongside professionals in various aspects of arts administration. These experiences may take place during various times of the academic year and are offered for variable credit to allow for the greatest flexibility. Prerequisites: Admission to the M.F.A. in Performing Arts Administration or permission of program director.
COLLEGE OF HEALTH AND HUMAN SERVICES

Doctor of Philosophy in Evaluation

The Doctor of Philosophy in Evaluation is a collaborative effort of four colleges—Arts and Sciences, Education, 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 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 outcomes; provide credible reports to accrediting/oversight bodies, and, in general, maintain accountability.

Graduating students will receive their degree from one of the participating colleges, usually the one where their major advisor resides. Each student will have an advisory committee that will tailor that student's 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 improvement.

Admission Requirements

1. Go to the WMU Admissions Office website and request an admission packet for the program. Alternatively, you can call the office (269-387-2000) or e-mail them, tell them you want to apply for the new interdisciplinary Ph.D. in Evaluation, and ask them to send you the self-managed application package.

2. On the admission application form, under "program of study desired," write "IEV" (this is the code for Interdisciplinary Evaluation). Otherwise, just follow all instructions. If you have questions, please direct them to the Admissions Office.

3. The admissions application packet includes instructions for sending materials to TWO locations: The Admissions Office and the department. The application going to the Admissions Office should be completed as stated in the instructions. (Students who are currently at WMU do NOT need to send in transcripts, or GRE scores—if they are already on file.)

4. The application form coming to the department should be addressed to: Ph.D. in Evaluation (interdisciplinary), The Evaluation Center, Western Michigan University, Kalamazoo, MI 49008-5237 (be sure to include this 4-digit zip code extension to ensure timely delivery).

5. The departmental application form should contain:
   • A completed WMU application form (included in the self-managed application packet)
   • A completed program application form (available in Word or in PDF)
   • Photocopies or unofficial copies of graduate and undergraduate transcripts—these must indicate any degrees completed (official transcripts should go in the packet to the Admissions Office)
   • A current curriculum vitae
   • GRE general scores If you have taken the GRE in the past and still have an official copy of your scores, you may submit that; scores are not required to be less than 5 years old. Please note that there is no waiver of this requirement even if you already have a graduate degree from a U.S. university. There is no minimum GRE score required; however, entry into the program will be competitive and will be based partially on GRE scores. If you feel that one or more of your scores is not an adequate gauge of your ability, please submit additional supporting evidence (e.g., a writing sample or technical report).
   • Please see the ETS Website for information about scheduling and taking the GRE.
   • A 1000-word essay outlining your career goals and reasons for interest in the program, including any preferences for advisors you would particularly like to work with
   • A recent writing sample on which you are the sole or first author (e.g., a technical report, a publishable paper, or a class project). It is helpful if this provides additional evidence of the abilities we use to judge applications (see the list of selection criteria above)
   • Three letters of recommendation from academic or professional sources (preferably in sealed envelopes with the recommenda
tion writer's signature across the envelope seal; please ask your referees to address the selection criteria)
   • If you are seeking financial support, include a completed doctoral associateship application form and/or a one-page application letter for a research assistantship (please indicate your areas of interest, skills, and knowledge; and availability for work)

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 coursework 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 courses
  - 9 hours of practical evaluation experience

2. Passed both written and oral comprehensive exams covering the competencies listed later on this page.

3. Completed successfully 12 hours of doctoral dissertation study, plus an optional 3 hours of independent study in preparation for oral qualifying exams.

4. Written and successfully defended a dissertation that advances the theory, methodology, and/or practice of evaluation.

5. Demonstrated competency in at least five 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 their advisory committee. This requirement will usually be fulfilled as part of the practicum experience; however, other options are possible in exceptional cases.)

6. Completed with the program's residency enrollment requirements (e.g., 2 semesters of enrollment in at least 6 units of course work per semester within one 12-month period).

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)

- **Metaevaluation and Evaluation Standards** (use of professional standards and checklists for evaluation and metaevaluation)

- **History and Nature of the Evaluation Profession** (the roots of the evaluation profession, its development to date, future directions)

**Project Work**

Students must complete 9 credit hours of practical evaluation experience (usually all EVAL 712; may include 3 units of EMR 652). 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 be able to "hit the ground running" as competent practitioners.

**Evaluation Courses (EVAL)**

Open to Graduate Students Only

**EVAL 600 Foundations of Evaluation** (3 hrs.)

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—products, services, persons, programs, projects, policies, interventions, organizations, manufacturing processes, information and communication systems. Topics will 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.

**EVAL 601 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 will include: the history and nature of the evaluation profession, evaluation standards, meta-evaluation, 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. May be repeated for credit up to a maximum of 4 credits.

**EVAL 697 Advanced Evaluation: Variable Topics** (1-3 hrs.)

This course will present various advanced topics in evaluation theory, methodology, and/or practice, as applied to a diverse range of evaluands (e.g., programs, 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. May be repeated for credit with a different topic. **Prerequisite:** Permission of instructor. **Prerequisites:** SPED 537 or equivalent and consent of department.

Open to Graduate Students Only — Please refer to The Graduate College section for course descriptions.

**EVAL 710 Independent Research** (2-6 hrs.)

**EVAL 711 Readings in Doctoral Specialization** (3 hrs.)

**EVAL 712 Professional Field Experience** (2-9 hrs.)

**EVAL 730 Doctoral Dissertation** (1-12 hrs.)
Doctor of Philosophy in Interdisciplinary Health Studies

Advisor: Nick Nelson, Director
310 Speech and Hearing Center
Telephone: 387-8058
Fax: 387-8044

The Doctor of Philosophy in Interdisciplinary Health Studies is designed to meet the career advancement needs of working Health and Human Service professionals. Several recent national commissions, including the Pew Health Professions Commission and the National Commission on Allied Health, have challenged higher educational institutions to respond to the fundamental changes which are occurring in health care by designing more flexible curricula, removing disciplinary boundaries, and increasing research in allied health. The College of Health and Human Services has met this challenge by developing a unique student-centered curriculum, which focuses on an interdisciplinary core curriculum, strong preparation, and the teaching of innovative pedagogy. In order to meet the needs of working professionals, the courses will be delivered through intensive weekend and summer on-campus sessions and distance learning modalities. Students will enter the program as a cohort once every two years and complete the didactic sequence in two years. Dissertation research should take a further one to two years.

Admission requirements
Applicants to the Program will be expected to meet the following requirements of the Graduate College. In addition to these, the Program admission requirements include:
1. Minimum of two years of professional experience in the health and human service field.
2. Master's degree with a minimum graduate grade point average of 3.25/4.00.
3. Completion of at least one graduate level course in statistics and research methods, with a minimum grade of B in the last 10 years. If a student completed this course more than 10 years ago, s/he must retake it prior to beginning the Program or demonstrate current competency in the graduate level research and statistical methods.
4. Computer competency in the use of databases, word-processing, spreadsheets, and Internet use.

Application must be made both to the Office of Admissions and Orientation—Graduate Admissions and to the College of Health and Human Services. The application must include a 1,000 word essay outlining career goals and three letters of recommendation from academic or professional sources.

Program Requirements
Students will be admitted to the Program as a cohort. The courses will be presented in sequential order, so that the didactic portion of the curriculum can be completed in two years. A slower four-year sequence is also available. Courses will be delivered through intensive weekend and summer on-campus intensive week-end sessions held three times per semester, or on-campus three-week long intensive summer sessions. Students are required to:
1. Attend a week-long on-campus Orientation session, prior to beginning the Program. This will familiarize the student with the Program, the research expectations, and the university's resources. The student will receive copies and instruction in required software for distance delivery courses and begin previous coursework on the topic for the group interdisciplinary research practicum.
2. Select an academic advisor during the Orientation session. Prior to the supervised teaching practicum in the second year, the student must establish a teaching committee. The chair of this committee must be a specialist in the course content and act as the student's mentor. A dissertation committee should be established by the beginning of the second year. At the second year of the Program and must conform to Graduate College policy.
3. Complete, with a 3.25 grade point average, a total of 63 semester hours of credit as follows:
   1. Interdisciplinary core (15 hours)
   2. Interdisciplinary core (12 hours)
   3. Interdisciplinary core (12 hours)
   4. Interdisciplinary core (6 hours)
   5. Interdisciplinary core (3 hours)
   6. Interdisciplinary core (3 hours)
   7. Interdisciplinary core (3 hours)
   8. Interdisciplinary core (3 hours)
   9. Interdisciplinary core (3 hours)
   10. Interdisciplinary core (3 hours)
   11. IHS 629, IHS 632, IHS 713.
   12. Disciplinary cognate (9 hours)
   13. The student may select a cognate to meet his/her own learning objectives, with the prior approval of the Program Director and the student's advisor.
   14. Dissertation research (12 hours)
   15. IHS 730
   16. Disciplinary cognates and some research courses (specifically IHS 626 and IHS 628) may be taken at other accredited, doctoral institutions with the prior approval of the Program Director or the student's advisor.
   17. Successfully complete the Comprehensive Examination. This is performance-based and includes the submission of a competitive research proposal. Students will submit a research paper for publication, the development of a 3-credit course using innovative pedagogy, and a critical analysis of a HHS program policy.
   18. Successfully complete and officially defend a dissertation on a research topic approved by the dissertation committee.

Financial Assistance
For students wishing to pursue this curriculum full-time on-campus, the College of Health and Human Services offers financial support through doctoral associations.

Interdisciplinary Health Studies Courses (IHS)
Open to Graduate Students Only
IHS 625 Health and Human Service Organization and Delivery Systems 3 hrs.
Provides a systematic approach to understanding the origin, evolution, and utilization of health and human services in the United States, including comparisons with the provision of services in other countries. Concepts and perspectives concerning the influence of economics and politics on current service delivery will also be 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 environments 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. Prerequisite: Admission to the Ph.D. in Interdisciplinary Health Studies or permission of director.
IHS 626 Qualitative Research Concepts in HHS 3 hrs.
Provides students with the ability to design, conduct, and analyze research findings using various qualitative research methods. These methods include comparative, historical, case study, content analysis and other types of observation and interview strategies for data collection. Students will learn to identify the strengths and limitations of qualitative research methods for expanding the knowledge base in health and human services. Prerequisite: Admission to the Ph.D. in Interdisciplinary Health Studies or permission of director.
IHS 627 Health and Human Services Policy and Politics 3 hrs.
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 and the decision-making processes are separated and discussed with the roles of the actors and the decision-making processes in local, state, and federal levels, are also considered. Prerequisite: Admission to the Ph.D. in Interdisciplinary Health Studies or permission of director.
IHS 628 Quantitative Research Concepts in Health and Human Services 3 hrs.
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 data analysis. Students will learn to conduct bivariate and multivariate statistical tests commonly used in HHS research, and to interpret the results. Correlation and linear regression will also be described, and students will be introduced to basic concepts in 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. Prerequisite: Admission to the Ph.D. in Interdisciplinary Health Studies or permission of director.
IHS 629 Design and Conducting Assessment 3 hrs.
Examines current theories on 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. Prerequisite: Admission to the Ph.D. in Interdisciplinary Health Studies or permission of director.
IHS 630 Designing and Conducting Health and Human Services Research 3 hrs.
Provides students who are beginning to plan their dissertation research an opportunity to learn about formulating and focusing research questions, collecting and managing data, and analyzing and evaluating data. Topics included in this course include commonly used true and quasi-experimental research designs, threats to internal and external validity of research results, and ethical issues. Ethical issues in design, conducting, and reporting of research findings will also be discussed, along with issues of multiculturalism in research design. This course offers students an opportunity for development of their dissertation research proposal with guidance from the course instructor and other faculty. Prerequisite: Admission to the Ph.D. in Interdisciplinary Health Studies or permission of director.
IHS 631 Proposal Development and Management 3 hrs.
Provides students with skills needed to complete successfully for funding in various health and human services venues. This course provides an overview of grantsmanship, including identifying sources of research and program development support and developing successful proposals, including drafting budgets, preparing evaluative plans, and developing collaborative relationships.
to strengthen grant proposals. Principles of project management will also be discussed. These include ensuring fiscal and ethical accountability, supervision of staff, and documenting progress toward project goals. **Prerequisite:** Admission to the Ph.D. in Interdisciplinary Health Studies or permission of director.

**IHS 632 Innovative Pedagogy and Instructional Design**
3 hrs.
Examines models of teaching and related research and the inclusion of innovative pedagogy, including teaching through technology, problem-based learning, collaborative learning, and distance learning. Techniques for instructional design and assessment are discussed. Issues relating the shift from teacher-centered to learner-centered instruction are explored. Learners will be expected to apply one or more innovative pedagogies in an applied area. **Prerequisite:** Admission to the Ph.D. in Interdisciplinary Health Studies or permission of director.

**IHS 633 Ethics and Law in Health and Human Services Professions and Scientific Research**
3 hrs.
Applies principles of ethics to health and human service decision-making, policy formulation, and to clinical and research situations. Current issues and research in biomedical and social ethics are examined, together with the legal and ethical concerns which affect interdisciplinary collaborative practice. Laws which influence the provision and delivery of care and services at local, state, and federal levels are discussed. **Prerequisite:** Admission to the Ph.D. in Interdisciplinary Health Studies or permission of director.

**IHS 634 Health and Human Services Current Issues Seminar**
3 hrs.
Analyzes current issues in health care and human services, including psycho-social aspects of disease and wellness, and recent trends in health promotion and education. Topics include evidence-based medicine, patient/client-centered care, and risk management. The course also examines the research on strategies for quality and cost control, measurement of outcomes, and service evaluation. **Prerequisite:** Admission to the Ph.D. in Interdisciplinary Health Studies or permission of director.

**IHS 635 Interdisciplinary Practice in Health and Human Services**
3 hrs.
Examines the principles associated with interdisciplinary practice and presents a variety of team organization models. Discusses the historical forces behind team practice and the impact of individual professional philosophies on team utilization, participation, and maintenance. Additional issues analyzed include management structure, team building, case management, and outcomes measurement. An in-depth look at team dynamics will include communication, collaborative decision-making, collective responsibility and accountability, and conflict resolution. The impact of the team members' organizational behavior will also be explored. **Prerequisite:** Admission to the Ph.D. in Interdisciplinary Health Studies or permission of director.

**Open to Graduate Students Only—Please refer to The Graduate College section for course description.**

**IHS 730 Doctoral Dissertation**
1-12 hrs.
**IHS 735 Graduate Research**
2-6 hrs.
The research practicum will provide students with an introduction to interdisciplinary research and to working collaboratively in teams under the guidance and supervision of a faculty member. Students will begin this longitudinal interdisciplinary group research practicum during the second semester of the program and complete it by the spring session of the following year. The research will form the basis for the paper that must be submitted for publication as a requirement of the comprehensive examination. The paper will be due at the end of the spring session of the second year of the program. **Prerequisite:** Admission to the Ph.D. in Interdisciplinary Health Studies or permission of director.

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**Health and Human Services Courses (HHS)**

**HHS 511 The Health System and Its Environment**
3 hrs.
This course provides a descriptive analysis of the organization of the health system. The student who participates can expect to gain an understanding of the structure of health services as well as the processes of operation of the service system and the ways in which consumers make use of the system. The analysis focuses on the interplay of forces within the system as well as between the system and its environment.

**HHS 512 Principles of Health Finance**
3 hrs.
This course is an examination of the principles of finance as applied to health care management. The course will provide a basis for understanding the financial management function in a health care administration environment and on the use of financial information in health care management decision making.

**HHS 513 Special Studies in Health Care Organization and Delivery**

**Variable**
This course deals with intensive analysis of the organization, design, and delivery of health care services in specialized areas. The specialized areas cover long-term, mental health, and group medical practice.

**HHS 514 Basic Principles and Organization of Health Planning**
3 hrs.
This course is an introduction to the principles and methods of planning in the health system. It includes a descriptive analysis of the significance of planning effective health care services, alternative planning frameworks, and technical approaches to the planning process. In addition the course surveys the history of planning in the health systems as well as the current structure arrangements for carrying out planning in the health arena both at the macro- and micro-levels.

**HHS 515 Administrative Functions in the Health Care Setting**
3 hrs.
This course focuses on the knowledge and skills necessary for the major administrative functions in health organizations. These include goal setting, decision making, personnel management, data processing, service design, and general principles of financial management.

**HHS 530 Clinical Theory for Health and Human Services**
1-4 hrs.
This course covers selected theories which form the foundation for health and human service practice in specialized areas. Students are expected to master the content as a basis for building foundation knowledge for clinical practice. Theory of environmental health, systems, theory for the health setting, and community health theory are among the possible areas of study. The specific topics are announced with each semester offering. **Prerequisite:** Consent of instructor.

**HHS 535 Pharmacology for Health Professionals**
3 hrs.
This course focuses on basic principles in pharmacology and pharmacotherapeutics. Principles necessary for a general understanding of the medical management of acute and chronic disease states will be highlighted. Discussion will center on classes of drugs with pharmacology, side effects, and contraindications identified. Case studies may be utilized to emphasize common clinical patient care scenarios. **Prerequisite:** One year of college general chemistry or one year of health professions chemistry.
BLINDNESS AND LOW VISION STUDIES

Dr. Paul Ponchilla, Chair
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The Department of Blindness and Low Vision Studies offers four master's degree programs. The programs in Orientation and Mobility and in Rehabilitation Counseling are approved by the Association for Education and Rehabilitation of the Blind and Visually Impaired. The program in Rehabilitation Counseling is accredited by the Council on Rehabilitation Education.

It is the vision of the Department to strengthen our leadership positions in personnel preparation and research in order 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.

Our mission is to provide instruction, conduct research, and offer professional service in an effort to prepare students to serve individuals with visual impairments. We are dedicated to the science of best practice, the responsible use of human and economic resources, the advancement of people with disabilities in society, and the delivery of quality rehabilitation and educational services worldwide.

The programs are designed to prepare individuals for entry-level positions in Orientation and Mobility, Rehabilitation Teaching, Rehabilitation Counseling/Teaching, and Teaching Children Who Are Visually Impaired/Orientation and Mobility with a Concentration in Teaching Children program requires 65 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 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 provide students enrolled in most master's programs with tuition assistance and stipend awards.

Admission Requirements

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. Prior to consideration by the M.A. Admissions Committee, applicants are required to complete a departmental application obtained from the Department of Blindness and Low Vision Studies and a Graduate Self-Managed Application obtained from the Office of Admissions and Orientation. Upon admission, an applicant is assigned an advisor who will assist in preparing a Program of Study. Not every applicant who meets minimum admission requirements can be admitted; the department reserves discretion in admission of the most highly qualified applicant.

Admission Procedures

1. Complete the "Graduate Admission Application" available from WMU Admissions or online at www.wmich.edu.

2. Complete the Blindness and Low Vision Studies Department Application available online at http://www.wmich.edu/hhs/birth/graduate/M%20App%20form.doc or by contacting the Department.

3. Submit a two-page typewritten essay that includes reasons for pursuing a degree in blindness and low vision studies, professional goals, an assessment of personal assets and liabilities, and one's life experiences that might be useful in work as a helping professional.

4. Submit Departmental Recommendation Forms completed by three professionals knowledgeable of the applicant's academic and/or professional experience.

5. WMU Graduate Admission requires two copies of all university transcripts. Minimum grade point average for regular admission is a 3.00 in the last sixty credit hours of undergraduate study.

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, and Rehabilitation Teaching are available. Most didactic lecture-based courses are presented in alternative formats, while the experiential skills courses are compressed into one or two summertime sessions. At distance education offerings require off-campus clinical field experience. Admission requirements for students pursuing distance education include providing assurances of agency or school support. Contact the respective program advisor for details.

Master of Arts in Orientation and Mobility

Advisor: Richard Long, Sangren Hall

The thirty-six hour Orientation and Mobility (OMS) degree program prepares specialists who teach adults who have blindness or low vision, the conceptual and physical processes involved in moving independently, safely, and efficiently in their homes and communities. Many students earn dual degrees in Orientation and Mobility and in Rehabilitation Teaching, which can be accomplished in two additional semesters.
Master of Arts in Rehabilitation Teaching

Advisor:
Susan Ponchillia, Sangren Hall

The thirty-nine hour Rehabilitation Teaching (R-HT) degree program prepares a practitioner to offer instruction to people who have blindness or low vision in the following skills of independent living: communications, adapted computer technology, personal management, home management, minor household repairs, and leisure time activities. One may also earn dual degrees in Orientation and Mobility and in Rehabilitation Teaching, which may be accomplished in two additional semesters.

Master of Arts in Rehabilitation Counseling/Teaching

Advisor:
Jennifer Weibold, Sangren Hall

The Rehabilitation Counseling/Teaching program (RCT) is jointly administered by the Department of Blindness and Low Vision Studies and the Department of Counselor Education and Counseling Psychology.

Master of Arts in Orientation and Mobility with Children

Advisor:
Annette Skellenger, Sangren Hall

The thirty-seven hour Orientation and Mobility with Children degree program prepares a dually competent practitioner who is able to serve in the schools as a teacher of children who have blindness or low vision 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 Educational Studies) and the other, a Master of Arts in Orientation and Mobility with 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. It is also possible to specialize in only one of these degrees.

*Leads to national certification
**Leads to Michigan license as a counselor and national certification

Blindness and Low Vision Studies Courses (BLS)

Open to Upperclass and Graduate Students

BLS 577 Services for Persons Who Are Blind or Have Other Disabilities 1-2 hrs.

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.

BLS 584 Computer Technology in Rehabilitation 3 hrs.

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.

BLS 586 Job Analysis and Job Placement 3 hrs.

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 501-504, 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.

BLS 588 Psychosocial Aspects of Disability 2 hrs.

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.

BLS 589 Medical and Functional Aspects of Rehabilitation 2 hrs.

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.

BLS 590 Physiology and Function of the Eye 2 hrs.

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.

BLS 591 Braille and Tactual Communication Systems 3 hrs.

This course is designed to teach Braille literacy code as it applies to Rehabilitation Teaching. Braille teaching methods are also presented.

BLS 592 Orientation and Mobility with Children 2 hrs.

This course will provide strategies for teaching orientation and mobility to children. Methods for teaching the typical orientation and mobility curriculum to children (indoor travel to business travel) will be presented. In addition, strategies for teaching areas specific to children such as body image, sensory-motor, and concept development will be addressed. The focus will be on practical application in educational settings.

BLS 593 Methods of Teaching Adaptive Communications 2-3 hrs.

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.

BLS 594 Principles of Orientation and Mobility 3 hrs.

An examination and application of the fundamental principles underlying the acquisition of sensory information by severely visually impaired individuals.

BLS 595 Introduction to Orientation and Mobility 2-4 hrs.

The content of this course relates to problems of independent travel which result from reduced vision. Simulated experiences are provided which emphasize the sensory, cognitive, and performance levels needed for independent travel in a variety of environments. Course is repeatable.

BLS 596 Electronic Devices 1 hr.

Systematic instruction in use of fundamental electronic travel aids and overview of major electronic devices. Prerequisite: BLS 595.


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. Emphasis is placed on 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 vi-
This course introduces students to the adapted techniques for teaching visually impaired children. It presents the theoretical content which facilitates effective teaching of independent living skills to visually handicapped individuals. The topics of this course include the development and use of spatial maps, use of the computer in mobility, conditions of travel, orientation to various environments, and types of guidance devices.

**Prerequisite:** Approval of advisor.

**BLS 598 Readings in Blind Rehabilitation**

1-4 hrs.

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.

**BLS 599 Gerontology**

2 hrs.

This course offers an overview of the demographic, economic, health, social and psychological circumstances of the aging population in the United States and the related service systems.

Open to Graduate Students Only

**BLS 601 Small "N" Research: Design and Analysis**

3 hrs.

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.

**BLS 602 Gerontology in Orientation and Mobility and Rehabilitation Teaching**

2 hrs.

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.

**BLS 604 Issues in Travel**

1 hr.

This course is taken concurrently with BLS 598. It presents the theoretical content which facilitates effective teaching of independent living travel skills to visually handicapped individuals. The topics of this course include development and use of spatial maps, use of the computer in mobility, conditions of travel, orientation to various environments, and types of guidance devices.

**BLS 605 Practice in Low Vision**

1 hr.

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. **Prerequisite:** Approval of advisor.

**BLS 606 Adaptive Sports Activities for Visually Impaired Children**

1 hr.

This course introduces students to the adapted methods that are utilized in teaching physical education, recreation, and sports skills to young visually impaired children. The course includes 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.

**BLS 607 Adaptive Art Activities for Visually Impaired Children**

1 hr.

This course will prepare students to instruct children who are visually impaired in the application of fine and handcrafts, creative and practical skills. **Prerequisite:** Approval of advisor.

**BLS 610 Assisted Research**

2-6 hrs.

This course requires a semi-independent research project related to rehabilitation. The student contributes a project that has been developed by a faculty member and is conducted by more than one student.

**BLS 664 Principles of Rehabilitation Teaching**

3 hrs.

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.

**BLS 691 Practicum in Rehabilitation Teaching**

1-2 hrs.

This course provides supervised teaching experiences with blind or visually impaired individuals in a variety of settings. Course may be repeated. Graded on a Credit/No Credit basis.

**BLS 695 Practicum in Orientation and Mobility**

1-3 hrs.

This course provides supervised teaching experiences with blind or visually impaired individuals in a variety of settings. Included within this course is a weekly seminar to discuss procedures of assessment, principles of professional practice and effective strategies.

**BLS 697 Clinical Practice in Low Vision**

3 hrs.

The course will familiarize the student with current practice and resources in the administration of a comprehensive low vision service. Further, the course allows for a practicum to be served in a low vision clinic where the student gains experience both in administration of the service, and applied training methodologies with low vision clients. **Prerequisites:** BLS 587 and 597.

Open to Graduate Students Only—Please refer to The Graduate College section for course descriptions.

**BLS 710 Independent Research**

2-6 hrs.

This course requires the completion of a creditable research project related to rehabilitation and conducted with faculty guidance.

**BLS 712 Professional Field Experience**

2-12 hrs.

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.
and communication strategies are integral to the course. Micro-teaching enables the learner to utilize new skills for the enhancement of teacher-learner interaction and dialogue, along with learner achievement of expected outcomes. A designated mentor teacher at the home university with a master’s or doctorate degree, nominated by the student and approved by the course director, works in partnership with the student and WMU faculty. Prerequisite: Master's degree in health discipline or current enrollment in master's or doctoral program in a health related area, with permission of the Director.

NUR 561 Clinical Teaching and Evaluation in Health Disciplines
3 hrs.
This course is designed to provide expert nurses, occupational therapists, physician assistants, social workers, audiologists and low vision studies individuals currently holding (or planning to hold) faculty positions with the theoretical and practical aspects of teaching and evaluation learner performance in practice settings. The focus of the course is on clinical teaching and evaluation, preceptor preparation, and issues related to establishing and maintaining clinical sites for student learning. The theories and principles of teaching and learning related to adults explored in NUR 552 are applied to theoretical foundations, with application for use in the practice setting. A designated mentor teacher at the home university with a master's or doctorate degree, nominated by the student and approved by the course director, works in partnership with the student and WMU faculty. Prerequisite: Successful completion of NUR 560.

NUR 562 The Scholarship of Teaching in a Clinical Discipl 3 hrs.
This course builds upon the knowledge and experience gained in NUR 560 and NUR 561, as well as the knowledge and skills of the expert clinician. It is designed to provide expert nurses, occupational therapists, physician assistants, social workers, audiologists and low vision studies individuals currently holding or planning to hold a faculty position exposure to the scholarship of teaching and what it means to be an "academic" as a clinician. Academic responsibilities of faculty members, ethical and legal issues in education and the impact of professional trends, health care policies, and rapidly changing health and illness care environments on the education of tomorrow's health professionals are explored. Prerequisites: Successful completion of NUR 560 and NUR 561.

The Professional Curriculum
The curriculum design of the occupational therapy program is based on a developmental progression intended to provide students with entry-level competencies in their chosen profession and to develop the personal and professional characteristics that will allow them to assume the role(s) of occupational therapy practitioners in a variety of settings. In recognition of the fact that clinical practice occurs in an increasingly technological, interdependent and rapidly changing world, the curriculum includes simultaneous focuses on the development of self-directed, adult-and hence potentially life-long-learning.

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.

Because admission is considered competitive, the academic criteria listed above should be considered as minimum standards.

Prerequisite Course Work
The following courses (with the WMU equivalent noted in parentheses) are required prerequisites for enrollment in the professional occupational therapy courses; some prerequisites may be elected as self-instructional courses (*).

Admission Procedure
To apply, the applicant must complete both the university application for admission and the departmental application. The equal consideration date (deadline) for receiving all applications is February 1 of each year. Full-time study commences in the fall semester.

1. Cumulative grade point average
2. Documentation of knowledge and experience as demonstrated by answers to narrative essays on the application form in the following areas:
   • Work and/or volunteer experiences
   • Statement of leadership roles
   • Statement of cultural/ethnic diversity and competency
   • Statement of research
3. Space available in program

Program Requirements
The graduate professional program consists of seventy-three semester credit hours as noted in the following areas:

1. Completion of 40 hours of professional occupational therapy education. This 40-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 33 hours of graduate courses, including six months of full-time fieldwork, designed to enhance growth in professional leadership potential by developing skills in administration, program development, theories
Western Michigan University utilizes fieldwork given above by the due dates will have their grade forms signed by the first reader. Graduate students for OT 690, Independent Research, requirements for OT 710 is defined as having students who do not complete the requirements acquired in credits earned at Western Michigan University cannot be made up by credits earned at another university.

Course Sequence
Courses in the professional program are completed in a sequential pattern toward developing complex clinical problem solving skills. The courses are not designed to stand alone, but to build upon the knowledge base from previous semesters. The prerequisite and pre-professional courses build a solid knowledge base in the biological and behavioral sciences. The first semester centers on the academic criteria listed above should be considered minimum standards.

Admission Procedure
To apply, the applicant must complete both the university application for admission and the departmental application. Admission is on a rolling basis. Full-time study commences in the summer semester.

Program Requirements
Completion of thirty hours of graduate courses, 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 to the program.

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.
4. Students who receive a failing grade in fieldwork level I (OT 475 , OT 482 ) or level II (OT 690 , OT 691 ) are subject to the academic policy for remediation and continuation, and will repeat the experience in a similar setting.
5. Successful completion of all professional and prerequisite course work is required for OT 690 .
6. Successful completion of all undergraduate course work required for graduation is required for OT 690 .
7. Students who fail fieldwork, or who are asked to withdraw, are subject to review in accordance with the departmental remediation and continuation policy.

THE GRADUATE POST PROFESSIONAL PROGRAM
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.

Open to Upperclass and Graduate Students
The thirty hour graduate program requires twenty-one hours of graduate course work which has been designed to build skills in advanced treatment theory (OT 640 ); research (OT 660 and OT 710 or OT 700 ); and professionalism (OT 610 , OT 685 ). The nine hour research and cognate courses allow the student to develop advanced skills in occupational therapy, related fields, or areas of special interest. The program may be completed on either a full-time or part-time basis. The full-time student may complete the program in 10 months with courses beginning in the summer session. Part-time enrollment is possible.

Occupational Therapy Courses (OT)
The course explores core concepts, models, and their influence on education, research, and practice of occupational therapy. Components of theory, formulation of theory, and the effect of theory development on occupational therapy will also be explored. Prerequisites: All required undergraduate course work except Fieldwork II (OT 453 may be taken concurrently).

OT 660 Research in OT I 3 hrs.
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. Prerequisites: All required undergraduate course work except Fieldwork I and II.

OT 661 Research in OT II 3 hrs.
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. Prerequisite: OT 660.

OT 666 Graduate Seminar 3 hrs.
This course examines topics relevant to new developments in environmental adaptations, treatment techniques, and/or innovations in the delivery of occupational therapy services. Prerequisites: All required undergraduate course work except Fieldwork II (OT 453 may be taken concurrently).

OT 690 Fieldwork Level II 3-12 hrs.
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. Prerequisite: Completion of OT 482.

OT 691 Fieldwork Level II 3-12 hrs.
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. Prerequisite: Completion of OT 690.

OT 697 Investigations in Occupational Therapy 1-3 hrs.
Independent study provided for the qualified occupational therapy student under the guidance of a departmental faculty member. May be repeated for credit. Prerequisite: Consent of graduate coordinator and proposed faculty supervisor.

Open to Graduate Students Only—Please refer to The Graduate College section for course descriptions.

OT 700 Master's Thesis 6 hrs.
Prerequisite: OT 660

OT 710 Independent Research 2-6 hrs.
Prerequisite: OT 660

OT 712 Professional Field Experience 2-6 hrs.
Prerequisite: Consent.

The Department of Occupational Therapy provides advanced study of function, dysfunction, and treatment of the upper extremities. Topics include the gross anatomy, neuroanatomy, neurophysiology, and kinesiology of the upper extremities; clinical conditions affecting upper extremity function; and current treatment methods and modalities used by occupational therapists.

OT 620 Introduction to Neurodevelopmental Treatment for Pediatrics 3 hrs.
Foundations of neurophysiology and motor development in neurodevelopmental treatment. Application of neurodevelopmental theory, treatment principles and techniques to occupational therapy. Special attention will be given to the occupational therapy management problems of children with neuromotor disorders. Prerequisite: OT 453, OTR, RPT, or consent of instructor.

OT 621 Introduction to Neurodevelopmental Treatment for Adults 3 hrs.
Foundations of neurophysiology and motor development are discussed. Opportunity is provided for application of neurodevelopmental theory, treatment principles and techniques to occupational therapy. Special attention is given to management problems of adults with hemiplegia. Prerequisites: OT 443, OT 453, OTR, or RPT, or consent of instructor.

OT 622 Application of Biofeedback in Occupational Therapy 3 hrs.
Basic principles of biofeedback and their application in occupational therapy. Students will design biofeedback programs for selected client problems. Prerequisite: OT 443, OT 453, OTR, or RPT, or consent of instructor.

OT 633 Administration of Occupational Therapy 3 hrs.
This course utilizes the basic skills of administration (planning, organizing, directing, coordinating, and controlling) in the development of a model of practice for occupational therapy services. These services will be developed for an agency or institution that does not now offer occupational therapy services, or for an agency or institution whose occupational therapy services need to be expanded. In addition to the model of practice, the student will prepare a grant proposal that could be used to initiate funding for the model. Prerequisites: All required undergraduate course work except Fieldwork II (OT 453 may be taken concurrently).

OT 640 Theory in Occupational Therapy 3 hrs.
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. Prerequisites: All required undergraduate course work except Fieldwork II (OT 453 may be taken concurrently).

Open to Graduate Students Only
OT 600 Advanced Clinical Practice in Occupational Therapy 3 hrs.
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 three selected clinical practice areas followed by application through participation in intensive hands-on workshops. Prerequisite: Admission to program.

OT 602 Function and Treatment of the Upper Extremity 3 hrs.
This course examines topics relevant to new developments in environmental adaptations, treatment techniques and/or innovations in the delivery of occupational therapy services. Prerequisites: All required undergraduate course work except Fieldwork II (OT 453 may be taken concurrently).

OT 690 Fieldwork Level II 3-12 hrs.
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. Prerequisite: Completion of OT 482.

OT 691 Fieldwork Level II 3-12 hrs.
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. Prerequisite: Completion of OT 690.

OT 697 Investigations in Occupational Therapy 1-3 hrs.
Independent study provided for the qualified occupational therapy student under the guidance of a departmental faculty member. May be repeated for credit. Prerequisite: Consent of graduate coordinator and proposed faculty supervisor.

Open to Graduate Students Only—Please refer to The Graduate College section for course descriptions.

OT 700 Master's Thesis 6 hrs.
Prerequisite: OT 660

OT 710 Independent Research 2-6 hrs.
Prerequisite: OT 660

OT 712 Professional Field Experience 2-6 hrs.
Prerequisite: Consent.
Physician Assistant Courses (MDSC)

Open to Graduate Students Only

MDSC 602 EENT and Allergy 8 hrs.
This course will focus on the knowledge, attitude, and skills required for interviewing, medical history taking, and physical examination necessary for the formulation of differential diagnoses and development of therapeutic and patient education plans. The course provides a foundation for the understanding, diagnosis, and treatment of allergic disorders and of diseases of the ear, nose, and throat, throughout the life span. Students will examine the pathophysiology of diseases of this system, with an emphasis on the cellular mechanisms of disease and the body’s response to them. The course is designed to develop the competencies required for patient counseling with an emphasis on health promotion and wellness and how to identify and screen for populations at risk. Students learn to focus on medical history taking and physical examination, including system anatomy and complex regional relationships. The basic principles of office laboratory procedures and the selection, utilization, and interpretation of clinical laboratory, imaging, and other diagnostic tests used to evaluate system function are examined. The concepts of pharmacotherapeutic principles necessary to provide a rational basis for clinical prescribing decisions are studied. An integrative approach is used to encourage application of information through clinical problem solving in the formulation of differential diagnoses and development of therapeutic and patient education plans. In this course students will also explore the role of the Physician Assistant, including the legal aspects of PA practice and the ethical and practice standards expected. Graded on a Credit/No Credit basis. Prerequisite: Enrollment in the Physician Assistant program.

MDSC 605 Neuropsychiatry and Endocrine 8 hrs.
This course provides a foundation for the understanding, diagnosis, and treatment of diseases of the neuropsychiatric and endocrine systems, throughout the life span. Students will examine the bio-psycho-social modal, wellness, as well as pathophysiology of diseases of these systems, with an emphasis on the cellular mechanisms of disease and the body’s response to them. The course is designed to develop the competencies required for patient counseling and for focused medical history taking and physical examination, including system anatomy and complex regional relationships. The selection, utilization, and interpretation of clinical laboratory, imaging, and other diagnostic tests used to evaluate system function are examined along with concepts of pharmacotherapeutic principles necessary to provide a rational basis for clinical prescribing decisions. An integrative approach is used to encourage application of information through clinical problem solving in the formulation of differential diagnoses and development of therapeutic and patient education plans. Graded on a Credit/No Credit basis. Prerequisite: Enrollment in the Physician Assistant program and successful completion of previous MDSC courses.

MDSC 606 Gastrointestinal and Hematology 6 hrs.
This course provides a foundation for the understanding, diagnosis, and treatment of diseases of the gastrointestinal and hematological systems, throughout the life span. Students will examine the pathophysiology of diseases of these systems, with an emphasis on the cellular mechanisms of disease and the body’s response to them. The course is designed to develop the competencies required for patient counseling and for focused medical history taking and physical examination, including system anatomy and complex regional relationships. The selection, utilization, and interpretation of clinical laboratory, imaging, and other diagnostic tests used to evaluate system function are examined along with concepts of pharmacotherapeutic principles necessary to provide a rational basis for clinical prescribing decisions. An integrative approach is used to encourage application of information through clinical problem solving in the formulation of differential diagnoses and development of therapeutic and patient education plans. Graded on a Credit/No Credit basis. Prerequisite: Enrollment in the Physician Assistant program and successful completion of previous MDSC courses.

MDSC 607 Reproduction and Urology 7 hrs.
This course provides a foundation for the understanding, diagnosis, and treatment of diseases of the reproductive and urological systems, throughout the life span. Students will examine the pathophysiology of diseases of these systems, with an emphasis on the cellular mechanisms of disease and the body’s response to them. The course is designed to develop the competencies required for patient counseling and for focused medical history taking and physical examination, including system anatomy and complex regional relationships. The selection, utilization, and interpretation of clinical laboratory, imaging, and other diagnostic tests used to evaluate system function are examined along with concepts of pharmacotherapeutic principles necessary to provide a rational basis for clinical prescribing decisions. An integrative approach is used to encourage application of information through clinical problem solving in the formulation of differential diagnoses and development of therapeutic and patient education plans. Graded on a Credit/No Credit basis. Prerequisite: Enrollment in the Physician Assistant program and successful completion of previous MDSC courses.

MDSC 610 Special Topics in Physician Assistant 1–3 hrs.
This course examines selected topics in medicine. Topics considered will vary from semester to semester. May be repeated for credit at the discretion of department and subject to approval by the Physician Assistant program and successful completion of previous MDSC courses.

MDSC 611 The Diagnostic Process I 2 hrs.
This is the first in a series of three courses designed to develop the knowledge, attitudes and skills required for medical history taking, physical examination, clinical problem solving, diagnostic assessment, and application of information through clinical problem solving in the formulation of differential diagnoses and development of therapeutic and patient education plans. Graded on a Credit/No Credit basis. Prerequisite: Successful completion of prior semester P.A. course work or departmental permission.

MDSC 612 The Diagnostic Process II 2 hrs.
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 data base, as well as formulating differential diagnoses. Prerequisite: Successful completion of prior semester P.A. course work or departmental permission.

MDSC 613 The Diagnostic Process III 2 hrs.
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 manage 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 learn how to integrate and synthesize these competencies in prevention strategies, and recording and communicating information in a medical team model. Prerequisite: Successful completion of prior semester P.A. course work or departmental permission.

MDSC 621 Medical Pathophysiology 1 hr.
This is the first in a three part sequence designed to equip 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 diseases and the body’s reactions to them. Topics covered will parallel those in concurrent clinical science courses. Prerequisite: Successful completion of prior semester P.A. course work or departmental permission.
MDSC 622 Medical Pathophysiology II 1 hr.
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. Prerequisite: Successful completion of prior semester P.A. course work or departmental permission.

MDSC 623 Medical Pathophysiology III 1 hr.
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. Prerequisite: Successful completion of prior semester P.A. course work or departmental permission.

MDSC 631 Primary Care Medicine I 6 hrs.
This is the first of three primary care medicine courses. This series of courses introduces the P.A. student to the practice of medicine. The course will cover disease states using a systems approach. Within each system, a life span approach will be used to look at diseases from the pediatric patient through the geriatric patient. Each disease will be examined using the integration of epidemiology, lab tests/procedures, diagnosis, treatment, nutritional issues, and available alternative medicine options. The primary care medicine courses will form the basis for clinical evaluation, diagnosis, management, and appropriate referrals, when necessary, of various health and wellness processes throughout a person’s life. Prerequisite: Admission to the Physician Assistant program or departmental permission.

MDSC 632 Primary Care Medicine II 6 hrs.
This is the second of three primary care medicine courses. This course is a continuation of the primary care medicine I course. This series of courses introduces the P.A. student to the practice of medicine. The course will cover disease states using a systems approach. Within each system, a life span approach will be used to look at diseases from the pediatric patient through the geriatric patient. Each disease will be examined using the integration of epidemiology, lab tests/procedures, diagnosis, treatment, nutritional issues, and available alternative medicine options. The primary care medicine courses will form the basis for clinical evaluation, diagnosis, management, and appropriate referrals, when necessary, of various health and wellness processes throughout a person’s life. Prerequisite: Admission to the Physician Assistant program or departmental permission.

MDSC 633 Primary Care Medicine III 5 hrs.
This is the third of three primary care medicine courses. This course is a continuation of the Primary care medicine II course. This series of courses introduces the P.A. student to the practice of medicine. The course will cover disease states and issues using a systems approach. Within each system, a life span approach will be used to look at diseases from the pediatric patient through the geriatric patient. Each disease will be examined using the integration of epidemiology, lab tests/procedures, diagnosis, treatment, nutritional issues, and available alternative medicine options. The primary care medicine courses will form the basis for clinical evaluation, diagnosis, management, and appropriate referrals, when necessary, of various health and wellness processes throughout a person’s life. Prerequisite: Successful completion of prior semester P.A. course work or departmental permission.

MDSC 641 Procedures and Diagnostic Testing—I 1 hr.
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. Prerequisite: Admission to the Physician Assistant Program or departmental permission.

MDSC 642 Procedures and Diagnostic Testing—II 1 hr.
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. Prerequisite: Successful completion of prior semester P.A. course work or departmental permission.

MDSC 643 Procedures and Diagnostic Testing—III 1 hr.
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 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. Prerequisite: Successful completion of prior semester P.A. course work or departmental permission.

MDSC 651 Health Promotion and Patient Counseling I 1 hr.
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 therapeutics/treatment/counter therapeutics. Theories of personality and psychopathology will be investigated as they relate to patient and practitioner counseling 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. Prerequisite: Successful completion of prior semester of P.A. course work or departmental permission.

MDSC 652 Health Promotion and Patient Counseling II 1 hr.
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 therapeutics/treatment/counter therapeutics. Theories of personality and psychopathology will be investigated as they relate to patient and practitioner counseling 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. Prerequisite: Successful completion of prior semester of P.A. course work or departmental permission.

MDSC 653 Health Promotion and Patient Counseling III 1 hr.
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 therapeutics/treatment/counter therapeutics. Theories of personality and psychopathology will be investigated as they relate to patient and practitioner counseling 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. Prerequisite: Successful completion of prior semester of P.A. course work or departmental permission.

MDSC 655 Professional Issues for Physician Assistants I 1 hr.
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. Prerequisite: Admission to the Physician Assistant program or departmental permission.

MDSC 656 Professional Issues for Physician Assistants II 1 hr.
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 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. Prerequisite: Successful completion of Professional Issues for Physician Assistants I.

MDSC 661 Pharmacotherapeutics I 1 hr.
This is the first in a series of three courses that focus on the concepts and therapeutic principles necessary to provide a rational basis for clinical prescribing decisions. This course sequence will present the pharmacology, pharmakokinetics, side effects, complications, dosages, and contraindications using a systems approach. Prerequisite: Successful completion of prior semester of P.A. course work or departmental permission.

MDSC 662 Pharmacotherapeutics II 1 hr.
This is the second in a series of three courses that focus on the concepts and therapeutic principles necessary to provide a rational basis for clinical prescribing decisions. The course sequence will present the pharmacology, pharmakokinetics, side effects, complications, dosages, and contraindications using a systems approach. Prerequisite: Successful completion of prior semester of P.A. course work or departmental permission.
of prior semester P.A. course work or departmental permission.

**MDSC 683 Pharmacotherapeutics III**

2 hrs.

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. The course will present the pharmacology, pharmacokinetics, side-effects, complications, dosages, and contraindications using a systems approach. **Prerequisite:** Successful completion of any or all semester P.A. course work or departmental permission.

**MDSC 671 Advanced Clinical Anatomy I**

2 hrs.

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. **Prerequisite:** Admission to the Physician Assistant graduate program.

**MDSC 672 Advanced Clinical Anatomy II**

1 hr.

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. **Prerequisite:** Admission to the Physician Assistant graduate program.

**MDSC 673 Advanced Clinical Anatomy III**

1 hr.

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. **Prerequisite:** Admission to the Physician Assistant graduate program.

**MDSC 680 Research Concepts for Physician Assistants**

1-3 hrs.

Topics considered vary from semester to semester. Topics include: 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. May be repeated for credit. **Prerequisite:** Enrollment in the Physician Assistant program.

**MDSC 681 Professional Field Experience - Women’s Health**

4 hrs.

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, 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.

**MDSC 682 Professional Field Experience - Pediatrics**

4 hrs.

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. Graded on a Credit/No Credit basis. **Prerequisite:** Completion of the preclinical year of the Physician Assistant program or departmental permission.

**MDSC 683 Professional Field Experience - Surgery**

4 hrs.

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.

**MDSC 684 Professional Field Experience - Medical Psychiatry**

4 hrs.

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. Graded on a Credit/No Credit basis. **Prerequisite:** Completion of the preclinical year of the Physician Assistant program or departmental permission.

**MDSC 685 Professional Field Experience - Emergency Medicine**

4 hrs.

This course will place the student in a structured emergency 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.

**MDSC 686 Professional Field Experience - Family Medicine**

8 hrs.

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. Graded on a Credit/No Credit basis. **Prerequisite:** Completion of the preclinical year of the Physician Assistant program or departmental permission.

**MDSC 687 Professional Field Experience - Internal Medicine**

8 hrs.

This course will place the student in a structured 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 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.

**MDSC 691 Clinical Practice Issues I**

1 hr.

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. 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.

**MDSC 692 Clinical Practice Issues II**

1 hr.

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. Graded on a Credit/No Credit basis. **Prerequisite:** Successful completion of MDSC 691 and concurrently enrolled in a professional field experience course or departmental permission.

**MDSC 693 Clinical Practice Issues III**

1 hr.

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. Graded on a Credit/No Credit basis. **Prerequisite:** Successful completion of MDSC 691 and concurrently enrolled in a professional field experience course or departmental permission.

**MDSC 695 Special Clinical Topics in Physician Assistant**

1-3 hrs.

This course examines selected topics in clinical medicine. Topics considered will vary from semester to semester. May be repeated for credit. **Prerequisite:** Enrollment in the Physician Assistant program and successful completion of the first year of MDSC courses.

Open to Graduate Students Only—Please refer to The Graduate College section for complete course descriptions.

**MDSC 710 Research Project/Professional Experience**

2—6 hrs. (8 hrs. required in program)

This course will ensure that students are qualified in applying the techniques learned in MDSC 680 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, clini-
Alcohol and Drug Abuse

Dr. C. Dennis Simpson, Director
Main Office: 3415 Ellsworth Hall
Telephone: 387-3350
FAX: 387-3348

Certificate Program in Alcohol and Drug Abuse

Advisors:
Dr. C. Dennis Simpson, Director
Room 3415, Ellsworth Hall
Janice Dekker, Coordinator of Student Services
Room 3406, Ellsworth Hall

The Department of Physician Assistant offers a program for the training of substance abuse specialists through the Graduate Certificate Program in Alcohol and Drug Abuse (SPADA). The departments of Biological Sciences, Counselor Education and Counseling Psychology, Occupational Therapy, Psychology, Public Affairs and Administration, Sociology, and the School of Social Work provide the multidisciplinary and interdisciplinary bases to the specialty. Courses are planned and taught by program faculty and faculty from the contributing disciplines.

Students receive training for dealing with varied aspects of substance abuse, including prevention, community education, treatment and rehabilitation, program management, and evaluation. Program graduates are employed by many public and private organizations, including social agencies, psychological clinics, family counseling services, alcohol and drug councils, hospitals, schools, and industries.

Admission Requirements
Persons who are eligible for graduate credit may apply for admission to the SPADA Program.

Program Requirements
Each student will satisfactorily complete a program consisting of nine semester hours of courses related to substance abuse. Three hours from a list of approved electives, and a six-hour field placement in one or more agencies dealing with some phase of substance abuse. Credit for the field placement will be elected from the courses designed for such activities in a department or school in which the student earns his or her graduate degree or in the certificate program. In some graduate degree programs, the required SPADA courses may be integrated with the regular degree requirements. Specific requirements of this integration vary and can be determined for each department or school. In addition to the six semester hour field training experience, the following courses are required in the Graduate Certificate Program in Alcohol and Drug Abuse: ADA 630 Legal and Illegal Drugs of Abuse (3 hrs.); SOC 617 The Etiologies of Substance Abuse (3 hrs.); and ADA 631, CEEP 631, or SWRK 663—Seminar in Substance Abuse I (3 hrs.) or ADA 632, CEEP 632, or SWRK 665—Seminar in Substance Abuse II (3 hrs.).

*These courses are cross-listed in the department and school indicated.

SPADA participants must also elect one of the following courses: PSY 526 Human Drug Use and Abuse (3 hrs.); PSY 663 Marital Therapy (3 hrs.); SOC 642 Social Epidemiology (3 hrs.); SOC 687 Evaluation Research I (3 hrs.); SWRK 636 Theory and Practice of Group Treatment (3 hrs.); SWRK 667 Seminar in Social Policy, Planning, and Administration (3 hrs.); or any one of the twenty-one Alcohol and Drug Abuse (ADA) courses offered for graduate credit.

Alcohol and Drug Abuse Courses (ADA)

Open to Upperclass and Graduate Students
ADA 520 Family and Addiction 3 hrs.
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.

ADA 525 Women and Substance Abuse Treatment 3 hrs.
This course provides knowledge on gender specific treatment of substance abusers. This includes physiological aspects of women, as well as cultural aspects and methods to enhance the treatment of women substance abusers.

ADA 530 Clinical Theory in Substance Abuse Services 1-4 hrs.
This course covers selected theories which form the foundation for substance abuse services practice in specific areas. Students are expected to master the content as a basis for building foundation knowledge for applied practice. The specific topics are announced with each semester offering.

ADA 535 Drug Testing 3 hrs.
This course explores the theory and practice of drug testing and its applications in both clinical practice and employment settings. The spectrum of testing ranges from field dexterity to gas chromatography. Federal requirements are reviewed for application in both clinic and work settings.

ADA 537 Constructive Confrontation and Referral in Substance Abuse Services 3 hrs.
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.

ADA 540 Current Issues in Alcohol and Drug Abuse 1 hr.
This course, taught in seminar, reviews basic and applied research advances in prevention and treatment of substance abuse. Emphasis is on bridging research advances to practice areas. The focus of the course is research published in the previous year.

ADA 541 Group Home Treatment 1-6 hrs.
This course reviews custodial, milieu, and functional aspects of group home treatment. Theories and practices are presented with emphasis on long-term treatment outcomes.

ADA 545 Alcohol, Drugs, and Aging 3 hrs.
The problems of alcohol, medication, and legal and illegal drug use, misuse, and abuse among older persons will be discussed. Prevention, intervention, and treatment will be considered. This course is cross-listed with GDN 545.

ADA 560 Clinical Practice in Selected Substance Abuse Services Areas 1-4 hrs.
This course covers variable topics in clinical substance abuse services practice. It is a skills development course which helps students to become proficient in specific techniques and procedures related to client service. The specific areas are announced with each semester.
ADA 565 Alcohol, Drug Abuse, and Violence 3 hrs.
This course provides the student with knowledge on the multiple relationships of substance abuse and violence, child abuse, and other assaultive behaviors.

ADA 567 Legal Offenders and Substance Abuse 3 hrs.
This course provides the student with knowledge on the theories associating substance abuse with criminal and civil offenses. Specific focus is on the treatment strategies and techniques related to the offending population and long-term outcomes of decreased recidivism.

ADA 570 Field Education: Substance Abuse 1-6 hrs.
A clinical, prevention, research, or administrative field experience in substance abuse services. The field experience involves direct supervision by faculty and clinical supervisors. Graded on a Credit/No Credit basis. Prerequisite: Admission to certificate program and permission of instructor.

ADA 580 Substance Abuse Prevention 3 hrs.
This course explores the multiple theories and techniques used in the prevention of substance abuse. The history and evolution of prevention is presented, as well as cognitive, affective, and behavioral strategies.

ADA 585 Student Assistance Programs 3 hrs.
This course provides students with knowledge of the theories and practices of student involvement with drugs, intervention strategies, referrals, and follow-up.

ADA 590 Applied Alcohol and Drug Dependence Recovery Techniques 3 hrs.
This course provides the student with knowledge of self-help groups and formal relapse prevention strategies. Application of relapse prevention strategies are integrated into multiple aspects of the continuum of care.

ADA 598 Readings in Substance Abuse Services 1-4 hrs.
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 up to a maximum of 4 hours in a program of study. Prerequisite: consent of instructor and program advisor.

Open to Graduate Students Only

ADA 610 Drugs and the Workplace 3 hrs.
This course provides knowledge of work based programming theories and practices regarding drugs of abuse. Course work and readings focus on policy formulation and implementation of procedures.

ADA 630 Legal and Illegal Drugs of Abuse 3 hrs.
This course deals with the pharmacological aspects of psychoactive/psychotropic drugs having abuse potential. Special emphasis is placed on observable signs and symptoms resulting from use/abuse/dependence of those drugs.

ADA 631 Seminar in Substance Abuse I 3 hrs.
This interdisciplinary seminar is designed to reflect broadly conceived intervention strategies ranging from primary prevention to rehabilitation of the addict. (Cross-listed with CECP 631 and SWRK 663.)

ADA 632 Seminar in Substance Abuse II 3 hrs.
Continuation of ADA 631. This course is cross-listed with CECP 632 and SWRK 665.

ADA 650 Substance Abuse Assessment 3 hrs.
This course deals with the physical, social, psychological, vocational, economic, and legal symptoms of substance abuse. Instrumentation for assessment in clinical practice is presented as well as medical and non-medical diagnostic criteria. This course includes clinic-based instruction in assessment strategies.

ADA 680 Clinical Supervision in Substance Abuse Service 3 hrs.
This course explores the theories and techniques used in the provision of clinical supervision to substance abuse services practitioners. Direct clinical supervisory skills are covered in detail and clinic-based instruction in clinical supervision is included.

Open to Graduate Students Only—Please refer to The Graduate College section of course descriptions.

ADA 710 Independent Research 2-6 hrs.
ADA 712 Professional Field Experience 2-12 hrs.

Certificate Program in Clinical Trials Administration

Advisor:
Advisor: Program Director
Main Office: Ellsworth Hall
Telephone: 387 5311
FAX: 387 5319

Admission to the Clinical Trials Administration Certificate Program is suspended temporarily. Students currently enrolled may continue their studies until the time limit for completion expires.

Clinical trials are used to evaluate and test new pharmaceutical drugs and medical devices for toxicity, safety, and efficacy. The information and data collected in these trials are carefully reviewed by the Food and Drug Administration before the drug or device is approved and made available to patients. The requirements for clinical trials have become more complex and extensive in recent years requiring growing numbers of qualified research personnel to administer the trials. These people are employed by pharmaceutical/medical device companies, contract research organizations, or by the physician office in which the trial is conducted. They can occupy positions such as Clinical Research Coordinators, Clinical Research Associates, and Clinical Trial Managers.

The Graduate Certificate Program in Clinical Trials Administration, offered by the Department of Physician Assistant will provide individuals with the essential competencies that are required by these clinical trial administrators. The curriculum will educate students in the processes of drug and medical device development and the planning and management of clinical trials. The courses will also include instruction in the statistical concepts used in the design, analysis, and regulatory review of clinical studies, in the principles of pharmacology, and in the ethical and legal issues of clinical trials.

The certificate may be taken independently or may be used to supplement graduate training in related fields such as physician assistant, occupational therapy, speech pathology and audiology, biological sciences, medicine, pharmacology, engineering, and marketing. The program is designed to provide education for students wishing to enter the expanding field of clinical trials and for those already employed in the profession who wish to upgrade their knowledge and abilities. All courses will be available on-campus and through distance education.

Admission Requirements
Applicants to the Program will be expected to meet the entrance requirements of the Graduate College. In addition, the program requires that applicants hold a bachelor's degree in a health related domain, including but not limited to physician assistant, nursing, occupational therapy, speech pathology and audiology, biological sciences, medicine, dentistry, and pharmacology. Applicants whose bachelor's degrees are in non-health related fields may be admitted with the approval of the Program Director, who may require those applicants complete additional courses.
Application must be made to both the Graduate College and the College of Health and Human Services/Physician Assistant Department.

Program Requirements
Each student must satisfactorily complete an 18-semester hour course of study with a minimum of grade 'B' in each course in order to be awarded a Certificate in Clinical Trials Administration. The required courses are CTA 500, 510, 520, 530, 540, and 550.

Admission Requirements
Applicants to the Program will be expected to meet the entrance requirements of the Graduate College. In addition, the program requires that applicants hold a bachelor's degree in a health related domain, including but not limited to physician assistant, nursing, occupational therapy, speech pathology and audiology, biological sciences, medicine, dentistry, and pharmacology. Applicants whose bachelor's degrees are in non-health related fields may be admitted with the approval of the Program Director, who may require those applicants complete additional courses.
Application must be made to both the Graduate College and the College of Health and Human Services/Physician Assistant Department.

Program Requirements
Each student must satisfactorily complete an 18-semester hour course of study with a minimum of grade 'B' in each course in order to be awarded a Certificate in Clinical Trials Administration. The required courses are CTA 500, 510, 520, 530, 540, and 550.

Admission Requirements
Applicants to the Program will be expected to meet the entrance requirements of the Graduate College. In addition, the program requires that applicants hold a bachelor's degree in a health related domain, including but not limited to physician assistant, nursing, occupational therapy, speech pathology and audiology, biological sciences, medicine, dentistry, and pharmacology. Applicants whose bachelor's degrees are in non-health related fields may be admitted with the approval of the Program Director, who may require those applicants complete additional courses.
Application must be made to both the Graduate College and the College of Health and Human Services/Physician Assistant Department.

Program Requirements
Each student must satisfactorily complete an 18-semester hour course of study with a minimum of grade 'B' in each course in order to be awarded a Certificate in Clinical Trials Administration. The required courses are CTA 500, 510, 520, 530, 540, and 550.
Clinical Trials Administration Courses (CTA)

CTA 500 Introduction to Drug and Device Development
3 hrs.
This course introduces the student to the pharmaceutical and medical device industry and the process of drug and device development. Drug Development Phases I-IV are discussed. Preclinical (animal) research, regulatory requirements, are reviewed along with the content of the Investigational New Drug Application (IND), the New Drug Application (NDA), Pre-Market Approval (PMA), and the Marketing Authorization Application (international). The roles of the Investigator, Study Coordinator, Sponsor, and Monitor are discussed. Students are exposed to the skills necessary to function as a mid-level research employee.

CTA 510 Clinical Pharmacology in Drug Development
3 hrs.
This course provides an overview of pharmacology, highlighting pharmacodynamics and pharmacokinetics, both of which are necessary to understand new drug discovery and development. A review of selected therapeutic areas will be reviewed, including oncology, cardiovascular, central nervous system, and anti-infectives.

CTA 520 Clinical Trial Design and Statistical Concepts
3 hrs.
The course is designed to allow the student to develop an understanding of the use and importance of statistics in drug development. This course will teach the fundamental statistical concepts used in the design, analysis, and regulatory review of clinical studies and drug dosiers. It will provide an understanding of the basic statistical theory used in the interpretation of clinical trial efficacy and safety results. It will give the student an understanding of the statistical requirements applied by regulatory agencies in their review processes.

CTA 530 Clinical Study Administration I
3 hrs.
This course covers the planning, development, implementation, and management of clinical trials. Topics include regulations, protocol development, case report form design, clinical data management operation, writing and conducting informed consent, Institutional Review Boards, contracting, budget development, selection and evaluation of research sites and activities required for implementation of a clinical trial. Prerequisite: CTA 500.

CTA 540 Clinical Study Administration II
3 hrs.
The course builds on the content of Clinical Study Administration I and presents the steps necessary to initiate, monitor, and close clinical trials within the context of Food and Drug Administration (FDA) regulations, Canadian Health Protection Branch regulations, and International Conference on Harmonization guidelines for Good Clinical Practices. Topics include: study monitoring, source document review, drug and device distribution and accounting, data correction and management, adverse event reporting, auditing and preparing for FDA inspection, Data review and summarization, and final study reports. Prerequisite: CTA 530.

CTA 550 Ethical and Legal Issues in Clinical Research
3 hrs.
Generally, biomedical professionals are expected to learn the high standards of their chosen profession by example and experience. In the area of clinical trials that involve human volunteers, the assimilation of ethical standards cannot be left to chance. Personnel involved in clinical trials must balance the dual goals of scientific merit and ethical acceptability. Ethical principles (respect for autonomy, non-maleficence, beneficence, justice), and other ethical concerns (privacy, confidentiality, compassion, relationships among patients and professionals) are studied and applied to contemporary problems in medicine and clinical research. This course is designed to be practical, incorporating the use of case studies that illustrate problems arising in the design and conduct of research trials.

SOCIAL WORK

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Master of Social Work

Director of Admissions and Student Services
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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 welfare. The program is accredited by the Council on Social Work Education. The curriculum is structured as an integrated and sequential set of conceptual and practical educational experiences. In preparing students for practice, the School of Social Work recognizes a variety of theoretical paradigms and values and weights 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.

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: 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 to prepare students for entry into the concentrations.

There are two methods 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 Policy, Planning, and Administration concentration has four essential components: Organizational leadership and management, program planning, analytical tools and technology, and 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.
In addition, the College of Health and Human Services offers opportunity for participation in a variety of social work-related graduate certificate programs. Included are Alcohol and Drug Abuse (SPADA), Holistic Health Care, and Nonprofit Leadership and Administration.

Admission Requirements

Applicants for graduate study in social work must complete two applications—one for the Office of Admissions and Orientation (the Graduate Self-Managed Application) and one for the School of Social Work. Both applications can be obtained either from the Office of Admissions and Orientation or the School of Social Work. Admission is granted for the summer I session only for applicants to the advanced standing program; admission is granted for the fall semester only for applicants to the full-time or extended-study programs. The deadline for filing applications is January 15th for advanced standing and March 15th for full-time or extended-study programs each year. In addition to the Graduate College'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 both undergraduate performance and area of study, and liberal arts academic background.
2. Evidence of personal qualifications considered desirable for successful social work practice. These include motivation for a human service profession, social work-related volunteer or employment experience, personal maturity, and leadership ability.
3. For those with a Bachelor of Social Work earned in an accredited B.S.W. program, an Advanced Standing Program is available for a selected number of qualified applicants. Such applicants, in addition to meeting the admission criteria above, will need to have earned, minimally, a 3.0 grade point average in social work courses with no individual social work grade below a 3.0, including all work required in the social work major, as well as an overall grade point average of 3.3 (A= 4.0) in social work courses during the last three years of the undergraduate degree program. Moreover, the applicant to the Advanced Standing Program must provide written evidence of having the necessary resources necessary to complete the advanced standing program within its twelve-month schedule. Applicants for the Advanced Standing Program must have earned a B.S.W. within 6 years of application to the program.

Program Requirements

1. The successful completion of sixty hours of credit is required for the conventional master's degree in social work. The degree program includes the following course credits:
   - Open 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 for other University departments (6 to 9 hours)
   - Field Education (12 hours: 6 in the Foundation and 6 in the Concentration)
   - Advanced Social Work Research (SWRK 642 for 3 hours or SWRK 686 for 6 hours)
2. Field Education: Students are required to complete two years of field education. The student's second-year field assignment is a Foundation placement encompassing a wide range of social welfare practice situations. The student's second-year field assignment is a Concentration placement, selected relative to the student's career interests. Field education requires two days per week in the agency setting, averaging 15 hours per week throughout fall and spring semesters. Full-time students begin field education the first semester, taking foundation courses concurrently. Students must earn at least 3 credits in the second fall semester of the program, taking foundation courses both in the first year and concurrent with field education in the second year. Advanced standing students begin the concentration placement in the summer II session. First-year placement requires 428 hours; second year, 472 hours; and advanced-standing, 596 hours.
3. Proficiency exams are available in SWRK 610, 630, 631, 633 and 640. Students have the option of receiving full credit for those courses in which proficiency exams are passed. To obtain information regarding exam eligibility criteria, contact the Director of Admissions and Student Services in the School of Social Work.
4. Students admitted to the M.S.W. Advanced Standing Program complete a minimum of 39 credit hours of required graduate courses.
5. One academic year of full-time study (up to 50 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. Transfer credit and equivalency will be reviewed in a student's advisor and the School's curriculum committee upon the student's request.
6. Students may take up to 9 hours of PTG Permission to Take Graduate Classes before admission is offered. An additional 3 hours of PTG credit (up to a maximum total of 12 PTG 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 all information regarding available PTG classes.

In addition to the conventional two-year, full-time program and the twelve-month Advanced Standing Program, the School of Social Work offers an extended-study program on campus in Kalamazoo and an extended-study program off-campus in Grand Rapids. Persons interested in extended-study programming should contact the Director of Admissions and Student Services in the School of Social Work.

Program Requirements

1. Social Work Foundation Courses (SWRK)

   OPEN TO GRADUATE STUDENTS ONLY

   SWRK 610 is offered in the spring semester and requires 36 hours of credit for the conventional master's degree in social work. The course focuses on the content of social welfare policy, other policy courses, and core political and social work practices. The course is designed to help practitioners make informed judgments about the utility of different treatment modalities, and their impact for service delivery design. Prerequisite: SWRK 640.

   SWRK 661 Social Work Practice: Individuals and Families 3 hrs.
   This course focuses on foundation level knowledge and skills necessary to help individuals and families. The course includes assessment, contracting, problem-solving, and evaluation with attention to social work values, theoretical knowledge and practice conditions. Problem-solving in a biopsychosocial framework and facilitation of client coping, competency and empower-
and child psychopathology from both descriptive and psychological points of view. General implications for social work intervention, ethical and value issues, and relevant research will receive some consideration. Emphasis of course sections may be adults, children, or adolescents. Prerequisite: SWRK 631 or consent of instructor.

SWRK 666 Social Work Practice with Individuals 3 hrs.
This course will introduce the student to social work practice with individuals. Social, psychological, economic, and biological stressors are considered as they impact on the individual's efforts to grow and survive. The ego developmental and crisis intervention approaches are the major orientations presented, augmented by concepts from cognitive theory. Particular attention will be paid to client's coping capacities. Prerequisite: SWRK 661.

SWRK 668 Social Work Practice with Families 3 hrs.
This course provides knowledge and skills in clinical social work practice with families. Family system theory and principles and techniques of structural family therapy are the central focus of the course. Concepts from communications theory and related interventions are also covered. Aspects of human diversity are discussed in relation to their impact on family functioning. Prerequisite: SWRK 666 or consent of instructor.

SWRK 676 Field Education in Interpersonal Practice 3 hrs.
Placement will be in an agency unit offering direct service experiences with some combination of individuals, families, and groups and additional experiences consistent with the student's learning needs. Campus- or field-based seminars may supplement the field experiences. Graded on a Credit/No Credit basis. Prerequisites: Completion of SWRK 661 and SWRK 671, and concurrent enrollment in SWRK 662.

SWRK 678 Advanced Field Education in Interpersonal Practice 3 hrs.
Continuation of SWRK 676. Students remain in field placement; direct service experiences and other activities continue. Campus- or field-based seminars may supplement the field experience. Graded on a Credit/No Credit basis. Prerequisite: SWRK 676 and concurrent enrollment in SWRK 668, and/or SWRK 696.

SWRK 683 Advanced Social Work Practice with Families 3 hrs.
This course provides students in interpersonal practice with an opportunity to deepen their knowledge and application of advanced clinical social work practice theory to work with at-risk individuals. Special attention is paid to interventions which promote optimal psychosocial functioning and development. This course builds on SWRK 666 and SWRK 638, and meets requirements for the advanced practice course in interpersonal practice. Prerequisite: SWRK 638 and 666 and concurrent enrollment in SWRK 678.

SWRK 693 Advanced Social Work Practice with Groups 3 hrs.
This is an advanced course for social treatment students that prepares them for therapeutic intervention in group treatment. The course will examine interpersonal relations, transference, counter-transference, communication, group processes, problem-solving, authority and leadership in groups, and group development from both an affective and cognitive perspective. The course will be experiential in nature with the student participating as a member of a small, face-to-face group. The course builds on the content of SWRK 636, Theory and Practice of Group Treatment, and meets the requirement for advanced practice course in interpersonal practice. Prerequisites: SWRK 636, 666, and concurrent enrollment in SWRK 678.

SWRK 694 Advanced Social Work Practice in Industry 3 hrs.
Study of advanced treatment strategies and interventions to help individuals with vulnerabilities in self-esteem development, early structure formation, and ego development as manifested in the work context. Clinical strategies directed to clinical internal organizational and group dynamics are examined. Meets requirement for advanced practice course in interpersonal practice. Prerequisites: SWRK 631, 666.

SWRK 695 Advanced Social Work Practice in Supervision 3 hrs.
This course explores processes, strategies, and problems in supervision. It prepares students for supervisory roles in social work agencies, highlighting the importance of this role in maintaining professional expertise, in developing professional social work practice models, and in linking organizational goals to service delivery. Direct supervisory skills are covered in detail. Student participation is essential. Meets requirement for advanced practice course in interpersonal practice. Prerequisite: SWRK 661 or consent of instructor.

SWRK 696 Advanced Social Work Practice with Families 3 hrs.
This course provides students with the opportunity to broaden and deepen their knowledge of advanced clinical social work practice. Building on SWRK 668, it provides theoretical content on structural strategic family therapy and may provide additional consideration of other perspectives such as communications and transactional approaches. Application of theoretical content is made to practice with families often encountered in social work practice, and seen as being at risk for problems in social and emotional functioning. The course meets the requirements for an advanced practice course in interpersonal practice. Prerequisites: SWRK 636, 666, and concurrent enrollment in SWRK 678.

SWRK 697 Advanced Social Work Practice in Selected Areas 3 hrs.
This variable topics course provides students an in-depth study of advanced interpersonal practice methods, models, and skills outside the scope of present course offerings. Topics vary from year-to-year, dependent upon student interest and timeliness of topic. Prerequisites: SWRK 666 and current enrollment in 636 or 666, and concurrent enrollment in SWRK 678.

POLICY, PLANNING, AND ADMINISTRATION CONCENTRATION COURSES
Open to Graduate Students Only

SWRK 643 Leadership and Management in Human Services 3 hrs.
The course addresses knowledge, skills, and attitudes essential in building leadership for...
SWRK 645 Administration in Human Service Organizations
3 hrs.
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. Prerequisite: SWRK 671 or consent of instructor.

SWRK 667 Program Planning
3 hrs.
The 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. Prerequisite: Concurrent enrollment in SWRK 677 or consent of instructor.

SWRK 669 Advanced Seminar in Planning and Administration
3 hrs.
The 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 669 is also used as the structure for assisting students in writing a program proposal that builds on content learned in P&P courses and in the practicum. Prerequisites: SWRK 667 and concurrent enrollment in SWRK 679, or consent of instructor.

SWRK 670 Seminar in Social Policy Practice
3 hrs.
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. Prerequisite: SWRK 610.

SWRK 677 Field Education in Social Policy, Planning, and Administration
3 hrs.
Field education in the Social Policy, Planning, and Administration concentration 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. Graded on a Credit/No Credit basis. Prerequisite: SWRK 672 and concurrent enrollment in SWRK 667, or consent of instructor.

SWRK 679 Advanced Field Education in Social Policy, Planning, and Administration
3 hrs.
The advanced field education experience for students concentrating in social policy, planning, and administration builds on the work which the student began in SWRK 577 during the fall semester. Students remain in the same field setting and work under the direction of the same supervisor. The emphasis will be upon the component of skills in the implementation of change and administration activities. It is expected that students will be assigned increased responsibilities in accordance with their professional growth. Graded on a Credit/No Credit basis. Prerequisite: SWRK 677, concurrent with SWRK 689.

ADVANCED STANDING COURSES
Open to Graduate Students with Advanced Standing Only
SWRK 632 Organizations, Communities, and Their Environment
3 hrs.
The course addresses the recruitment, selection, and supervision of personnel in organizations, community structures, and groups. Students have opportunities to develop skills in the analysis and management of critical incidents in staff relationships. SWRK 632 is also used as the structure for assisting students in writing a program proposal that builds on content learned in P&P courses and in the practicum. Prerequisite: SWRK 669 or consent of instructor.

SWRK 660 Seminar on Social Work Practice with Individuals, Families, and Groups
3 hrs.
This course provides a conceptual framework for understanding, analyzing, and implementing social work practice with individuals, families, and groups from various theoretical perspectives within a "systems" frame of reference. The ultimate goal is for students to initiate the development of a practice model that is logical, sound and consistent with their convictions and style and congruent with professional social work values. This course also focuses on the concrete relationship between practice skills, and knowledge necessary for working with diverse human systems. Such diversity should include gender, race, religion, sexual orientation, age, physical capabilities, socio-economic status, and political orientations. Prerequisite: Admission to the Advanced Standing Program.

SWRK 661 Social Work Practice in the Schools
3 hrs.
The course focuses on the skills needed for participation in the development and implementation of social policy in school settings. Students will learn how to work with a team in planning a service program. The course addresses the models, stages, and tasks of program planning in the human services. Field placements in the schools and their relationships with the surrounding community are explored. Students will integrate into an understanding of school social work's historical and contemporary emphasis on "empowerment" and the person-environment interface (i.e., interaction among biological, cultural, social, psychological, political, and economic aspects of human development and functioning). Prerequisite: Undergraduate senior status.

SWRK 561 Social Workers and Social Movements
3 hrs.
This course focuses on the skills needed for participation in the development and implementation of social policy in school settings. Students will learn how to work with a team in planning a service program. The course addresses the models, stages, and tasks of program planning in the human services. Field placements in the schools and their relationships with the surrounding community are explored. Students will integrate into an understanding of school social work's historical and contemporary emphasis on "empowerment" and the person-environment interface (i.e., interaction among biological, cultural, social, psychological, political, and economic aspects of human development and functioning). Prerequisite: Undergraduate senior status.

SWRK 562 Community Organization in Urban Areas
3 hrs.
The course provides a conceptual framework for understanding, analyzing, and implementing social work practice with individuals, families, and groups in various theoretical perspectives within a "systems" frame of reference. The ultimate goal is for students to initiate the development of a practice model that is logical, sound and consistent with their convictions and style and congruent with professional social work values. This course also focuses on the concrete relationship between practice skills, and knowledge necessary for working with diverse human systems. Such diversity should include gender, race, religion, sexual orientation, age, physical capabilities, socio-economic status, and political orientations. Prerequisite: Admission to the Advanced Standing Program.

SWRK 654 Special Studies in Social Welfare Practice
1—4 hrs.
Study of selected topics related to the theory and practice of social welfare activities and endeavors. Focus will be on roles of human service workers and methodologies utilized in these roles in a variety of social welfare areas. Specific topics will be announced. Prerequisite: Consent of instructor.

SWRK 579 Teaching Apprenticeship in Selected Social Work Curriculum Areas
1—4 hrs.
The course focuses on the development of educational skills for social workers through faculty-directed participation in teaching activities in a selected social work course. Specific learning objectives and expectations for apprentices are arranged with participating faculty. This course may be taken a second time (1—4 credits, or a maximum of 8 total toward degree) by a student who wishes to increase teaching skills through applied practice in another social work area.

SWRK 598 Readings in Social Work
1—3 hrs.
This course is designed to provide upperclass and graduate students with opportunities to work closely with faculty in disciplinary fields and to explore areas of special interest. Prerequisite: Consent of instructor.

SWRK 620 Social Work Field Education
3 hrs.
The role of the social worker in elementary and secondary schools and the necessary adaptations in the changes taking place in the educational scene are examined. Special 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 intervening means are explored. Prerequisite: Consent of instructor.

SWRK 623 Leadership in Nonprofit Organizations
2 hrs.
The course addresses leadership styles, skills, and attitudes in building leadership for developing, supporting, and maintaining effective service delivery in nonprofit organizations. The course focuses on such topics as leadership styles, power, motivation and conflict, task-group skills, supervision, values and ethics, and new organizational forms. Prerequisite: Consent of instructor.

SWRK 627 Planning in Nonprofit Organizations
2 hrs.
The course focuses on planning program changes and new programs in nonprofit organizations. Program planning is viewed as a creative, dynamic process carried out by a team. The stages and tasks of program planning are studied from an analytical, technical, and interactive perspective.
2-6 hrs.

The Graduate College section for course

Open to Graduate Students Only—Please refer to

SWRK 665 Seminar in Substance Abuse II

3 hrs.

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 arenas of practice. Specific topic will be announced each semester. May be repeated for credit up to a maximum of six hours. Prerequisite: Consent of instructor.

Admission to the Gerontology Certificate Program is suspended temporarily. Students currently enrolled may continue their studies until the time limit for completion expires.

Western Michigan University offers a multidisciplinary Graduate Certificate Program in Gerontology. This program consists of 20 hours of course work, field experience, and/or thesis/dissertation credit. A certificate in gerontology will be awarded at the completion of the course of study.

Admission Requirements

Students apply for admission to the Graduate Certificate Program through the Admissions Office and the Gerontology Program Office. Candidates applying for the Certificate Program must complete the following:

1. Course of Study:
   - Requires the completion of 20 credit hours from a list of approved courses available through the Gerontology Program Office.
   - Open to Upperclass and Graduate Students

2. Program Planning and Development in Gerontology, 6 hrs.; and BIOS 531: Biology of Aging, 3 hrs.

3. 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 up to a maximum of 4 hours in a program of study. Prerequisite: Consent of instructor and director.

Gerontology Courses (GRN)

Open to Upperclass and Graduate Students

GRN 521 Women and Aging 3 hrs.

This course offers an examination of the impact of aging on women, with special emphasis on the diverse experiences, challenges, and social and economic conditions of older women. The course will explore the status and roles of women in an aging society. Topics to be covered include the economics and politics of aging, the health status of women, women as caregivers, and retirees. The plight of minority older women will be addressed.

GRN 525 Religion and Aging 3 hrs.

A survey of the views of and attitudes toward the aging process and older people held by the world’s major religions will be explored. Particular attention will be paid to the relation of religious views and social policy in the U.S.

GRN 530 Special Topics in Gerontology 1-4 hrs.

This is a variable topic, variable credit course for consideration of current and special interests in gerontology. 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.

GRN 543 Survey of Geriatric Medicine 3 hrs.

This course provides an overview and survey of the care of the elderly patient from a medical perspective. The issues of medical problems, long-term care, nursing, rehabilitation, and the social considerations will be broadly discussed. In addition, the interaction of all of the issues of elderly care will be analyzed.

GRN 544 Aging and Mental Health 3 hrs.

This is a survey of mental health and mental health treatment problems of older adults. Topics include the courses of major mental illness in old age, depression, and dementia. Consideration will be given to etiologies, current therapies, and treatments, as well as barriers to treatment in this population.

GRN 545 Alcohol, Drugs, and Aging 3 hrs.

The problems of alcohol, medication, and legal and illegal drug use, misuse, and abuse among older persons will be discussed. Prevention, intervention, and treatment will be considered. This course is cross-listed with ADA 545.

GRN 547 Alzheimer’s Disease and Other Dementias 3 hrs.

Dementia is a complex issue compounded by stereotypical views of aging and the aged. This course focuses on social, psychological, etiologic, and epidemiological issues related to dementia together with the problems of diagnosis and treatment. Alzheimer’s Disease, probably the most common cause of dementia, will receive specific attention. The purpose of this course is to help students gain an understanding of dementia as both a social and medical problem.

GRN 581 Leadership in the Aging Network 3 hrs.

This course examines the development of the aging network and the influence this development has had on what it means to be a leader in this environment and what leadership skills will be most effective. The complexities of managing service delivery in the aging network will be examined. This will include the who, what, when, where and why of different reporting requirements, for example the similarities and differences among nursing home regulations and hospice regulations; financial and funding features; and a survey of a variety of agency structures. Within this context, leadership and leadership styles will be considered. Knowledge, skills, and attitudes considered essential for successful service delivery will be studied. Motivation, conflict resolution, cultural and ethnic sensitivity and ethics will be discussed.

GRN 598 Readings in Gerontology 1-4 hrs.

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 up to a maximum of 4 hours in a program of study. Prerequisite: Consent of instructor and director.

Open to Graduate Students Only

GRN 670 Approaches to Aging 3 hrs.

This course is a graduate-level introduction to the issues facing older persons, their providers and caregivers. Professional inter- and multi-disciplinary, cultural, ethnic, and non-western approaches to aging are some of the features of gerontology that will be discussed during the semester. The
format of this course is a combination of traditional didactic instruction and online synchronous and asynchronous discussion.

GRN 680 Multidisciplinary Seminar in Gerontology
3 hrs.
This seminar introduces students from different disciplines to older persons and their concerns through publications written by older persons and surveys of current issues in health care and health policy. Readings present the personal perspectives of older persons in a variety of situations. Students will be required to analyze these perspectives within the context of their academic discipline. Current events are surveyed through multiple media. Students will analyze the impact of medical and social breakthroughs and legislative decisions.

GRN 681 Program Planning and Development in Gerontology
3 hrs.
The seminar in the gerontology graduate specialty program will explore the process of program planning and development through meetings with national, state, and local funding agencies and meetings with service providers in various kinds of programs for older persons throughout the region.

GRN 690 Field Education in Gerontology
1-6 hrs.
This course is designed to give the student a learning experience during which the student can apply some of the knowledge and information acquired in the gerontology academic setting and further develop and refine his/her professional skills with the guidance and assistance of those professionals currently working in gerontology. Prerequisite: Admission to the program and permission of instructor.

Open to Graduate Students Only—Please refer to The Graduate College section for course descriptions.

GRN 710 Independent Research
2-6 hrs.
GRN 712 Professional Field Experience
2-12 hrs.

**SPEECH PATHOLOGY AND AUDIOLOGY**

**Advisors:**
- Michael J. Clark, Room 202, Speech and Hearing Center
- John M. Hanley, Room 235, Speech and Hearing Center
- Gary D. Lawson, Room 224, Speech and Hearing Center

The Master of Arts in Speech Pathology and Audiology, which is accredited by the Council on Academic Accreditation in Speech-Language Pathology and Audiology, provides academic and practicum experiences basic to the development of clinical competence in the evaluation and treatment of language, speech, and hearing disorders. Students 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 regular 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. Admission decisions are announced on March 15, April 30, and July 15; 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 sixty 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 at least fifteen semester hours (or equivalent) in 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 at least twelve semester hours (or equivalent) in courses which provide basic information on speech, language, and hearing disorders.
3. A grade point average of at least 3.00 in all undergraduate speech pathology and audiology course work.
4. Completion of at least twelve semester hours (or equivalent) of basic science course work, including courses in (a) biological and physical science, (b) mathematics, and (c) behavioral and social science. 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.
5. Submission of scores on the General Test of the Graduate Record Examination.
6. 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 academic and practicum achievements and potential for successful graduate work.
   b. Responses to a departmental questionnaire.

**Program Requirements**
Specific program requirements are as follows:
1. Completion of a core of required graduate courses specified by the department. The usual sequence of courses takes one calendar year plus two semesters (six terms of enrollment).
2. ASHA certification requirements are normally a part of the master’s degree program. The student must complete at least 350 hours of supervised clinical practicum, at least 250 of them at the graduate level. (The student who enters the graduate program with very few undergraduate clinical hours may anticipate some extension in program duration.) 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. The student must manifest emotional and behavioral characteristics which, in the judgment of the departmental faculty, will support development of his/her 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 expected to evidence the ability to conduct a research project.
5. As an option, speech-language pathology students may wish to qualify for Michigan Teaching Certification in order to work as a Teacher of the Speech and Language Impaired (TSLI) in Michigan schools. Students desiring this credential should consult with departmental advisors and/or contact the Certification Office of the WMU College of Education.

**Doctor of Audiology**

**Advisors:**
- Harold L. Bate, Room 203, Speech and Hearing Center
- Gary D. Lawson, Room 224, Speech and Hearing Center

A 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.
Applicants must submit official transcripts of all previous undergraduate and graduate work, or university.

Admission Requirements

1. A grade point average of at least 3.25 in the academic undergraduate degree program.
2. Undergraduate preparation including:
   a. at least 15 semester credit hours (or equivalent) in courses providing basic information underlying human communication processes (at least nine semester credit hours including one course in the biological sciences, one course in the physical sciences, and one course in mathematics; and at least six semester credit hours in the behavioral and/or social sciences).
   b. at least 15 semester credit hours (or equivalent) in courses that provide information on basic human communication processes (at least one course in phonetics, speech and language development, and one course in the science of speech and hearing); and
   c. at least 12 semester credit hours (or equivalent) of coursework in audiology and speech and language 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 coursework in their graduate programs. Volunteering 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.
5. 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. the applicant's responses to a departmental questionnaire-application.

For applicants holding a graduate degree with emphasis in audiology from an accredited college or university, Candidacy requirements will be the same as for applicants with a bachelor's degree, but the practicum requirements and the examination for the ASHA's Certificate of Clinical Competence in Audiology are systematically explored through lectures, arrangements on an individual basis to provide advanced study in special areas of interest in depth.

Graduation Requirements

Most students will enter the program with a bachelor's degree. These students must complete 118-122 semester credit hours, including a minimum of 64 semester hours of classroom instruction, six hours of independent research, and at least four credit hours of student teaching.

Speech Pathology and Audiology Courses (SPPA)

Open to upperclass and graduate students

SPPA 552 Communication Problems of the Aged

This course acquaints the student with receptive and expressive communication problems common to older adults. Emphasis is on the clinical management of organic speech disorders and impaired auditory functions associated with aging.

SPPA 554 Speech and Hearing Therapy in the Schools

Study of clinical work with speech and hearing handicapped children in the school setting. Prerequisite: SPPA 351, 353, 354, 358.

SPPA 556 Rehabilitative Audiology

Orientation to the clinical management of communication problems associated with auditory impairment.

SPPA 595 Oral Language Development and Dysarthria

This course provides the student preparing to be a classroom or special teacher with information about the nature of oral language, its development, conditions associated with disorders, and the principles and methods of treatment for children with specific speech or language disorders. Not applicable toward the master's degree in Speech Pathology and Audiology.

SPPA 597 Topics in Speech Pathology and Audiology

1-4 hrs.

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 hrs.

b. American Sign Language I
   3 hrs.

c. American Sign Language II
   3 hrs.

SPPA 596 Readings in Speech Pathology and Audiology

1-4 hrs.

Arranged on an individual basis to provide students the opportunity to pursue independently the study of special areas of interest in depth.

Open to Graduate Students Only

SPPA 601 Advanced Speech Science

3 hrs.

Overview of the anatomy, physiology, and pathology 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. Prerequisite: Department approval.

SPPA 603 Anatomy and Physiology of Audition and Balance

2 hrs.

A study of the anatomy and function of structures important to audition and balance. Prerequisite: Department approval.

SPPA 604 Psychoacoustics

2 hrs.

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. Prerequisite: Department approval.
 Forgathering, reducing and analyzing data to
Department approval.

and applications of electronics and electronic
garding communication disorders and processes.

to generate, record, reproduce, control, calibrate,
to determine the need for medical or rehabilitative intervention. Prerequisite: SPPA 631 Diagnostic Audiology I or equivalent.

SPPA 632 Diagnostic Audiology III
3 hrs.
This course focuses on physiological and electrophysiological techniques for the evaluation of cochlear and vestibular disorders, specifically otocystic and vestibulogram, to determine the need for further medical or audiological intervention. Prerequisite: SPPA 631 Diagnostic Audiology II or equivalent.

SPPA 633 Auditory Habilitation of Children 2 hrs.
This course deals with the assessment, management, and remediation of hearing impaired children in the areas of language, speech, and auditory skills development. Prerequisite: Department approval.

SPPA 639 Seminar in Audiology 1-4 hrs.
Selected topics in audiology are systematically explored through critical analyses of literature and possible areas of study. Topics vary from semester to semester and are announced in advance. May be repeated. Prerequisite: Department approval.

SPPA 640 Voice Disorders 3 hrs.
Organic and functional disorders of laryngeal and resonator origin are studied in depth. Prerequisite: Department approval.

SPPA 641 Articulation Disorders 3 hrs.
This course considers in detail the nature and treatment of functional misarticulations and of misarticulation associated with various organic disorders. Prerequisite: Department approval.

SPPA 642 Stuttering 3 hrs.
Theories and therapies applicable to the understanding and clinical management of stuttering are studied in depth. Prerequisite: Department approval.

SPPA 643 Aphasia in Adults 3 hrs.
This course deals comprehensively with the identification and treatment of communication problems in the adult aphasic individual. Prerequisite: Department approval.

SPPA 644 Motor Speech Disorders 3 hrs.
This course examines dysarthrias and verbal apraxia as manifested in children and adults. Prerequisite: Department approval.

SPPA 645 Augmentative and Alternative Communication 3 hrs.
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. Over-all communication needs are highlighted in reference to educational, vocational, and social interaction purposes. Prerequisite: Department approval.

SPPA 649 Seminar in Speech-Language Pathology 1-4 hrs.
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. May be repeated. Prerequisite: Department approval.

SPPA 653 Diagnosis and Appraisal 3 hrs.
The student is instructed in methods and procedures for evaluation of speech and language disorders. Prerequisite: Department approval.

SPPA 657 Disordered Language Development 3 hrs.
Procedures and techniques for the identification, diagnosis, and clinical management of developmental disorders of language are explored intensively in this course. Prerequisite: Department approval.

SPPA 658 Theoretical Bases for Therapy 3 hrs.
In this course disorders of communication are examined in terms of sero-system, learning theory, and personality theory.

SPPA 669 Principles of Professional Practice 2 hrs.
Current professional and philosophical questions are studied with reference to the history of the profession of speech pathology and audiology. Prerequisite: Department approval.

SPPA 670 Clinical Practicum 1-4 hrs.
Supervised clinical experience in the evaluation and/or management of speech, language and/or hearing disorders. Prerequisite: Department approval.

SPPA 671 School Internship in Speech-Language Pathology 6 hrs.
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.

Open to Graduate Students Only—Please refer to The Graduate College section for course descriptions.

SPPA 700 Master's Thesis 6 hrs.

SPPA 710 Independent Research 2-6 hrs.

SPPA 712 Professional Field Experience 2-12 hrs.

SPPA 605 Laboratory Instrumentation in Hearing and Speech Sciences 2 hrs.
Basic principles of electronics and electronic instrumentation and application of laboratory instrumentation to measurements in hearing and speech sciences.

SPPA 615 Research Methods in Speech-Language Pathology and Audiology 3 hrs.
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.

SPPA 616 Instrumentation in Audiology 3 hrs.
This course introduces the basic principles and applications of electronics and electronic instruments as they pertain to audiology. The first section of the course will be an introduction to basic principles of DC and AC electronics, with a particular focus on the concept of electrical impedance. The second section of the course will consist 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.

SPPA 619 Seminar in Speech and Hearing Science 1-4 hrs.
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. May be repeated. Prerequisite: Department approval.

SPPA 620 Auditory Disorders 2 hrs.
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 also is included. Prerequisite: Department approval.

SPPA 621 Diagnostic Audiology I 4 hrs.
This course, which is one of two courses devoted to diagnostic audiology, deals with routine and special audiometric techniques for testing hearing disorders to determine the need for medical or rehabilitative intervention. Prerequisite: Department approval.

SPPA 622 Hearing Aids 3 hrs.
Components, characteristics, evaluation, selection, use and maintenance of hearing aids are studied in detail. Prerequisite: Department approval.

SPPA 623 Pediatric Audiology 3 hrs.
This course deals with the identification, measurement, and management of hearing impairment in infants and young children. Prerequisite: Department approval.

SPPA 624 Educational Audiology 3 hrs.
This course deals with educational, psychological, and vocational needs of the hearing impaired child and the parameters of educational programming. Prerequisite: Department approval.

SPPA 625 Industrial and Public Health Audiology 2 hrs.
A study of hearing conservation programs in industry, including noise measurement, damage-risk criteria, hearing measurement, and medicolegal problems; noise as a public health hazard;
Graduate Studies Courses (GRAD)

Open to Graduate Students Only
A graduate student should register for 700-level courses in his or her instructor's department. If the appropriate 700-level course is not offered by that department, the student should seek permission to register for it as a Graduate Studies (GRAD) course.

ALL 700-LEVEL COURSES ARE GRADED ON A CREDIT/NO CREDIT BASIS.

Please Note: Students conducting research in any 700-level course that involves human or animal subjects, biohazards, genetic materials, or nuclear material/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. For more information, call the Office of the Vice President for Research, 387-8298.

GRAD 700 Master's Thesis
6 hrs.
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 700, Master's Thesis, a Permission to Elect form (available in all departments) must be completed and the student must meet with the Coordinator of Theses and Dissertations 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.

A Master's thesis 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/officer 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 purchase in Western's Campus Bookstore, or for free downloading at <http://www.wmich.edu/grad/guidelinesPM.pdf>.

The course 700, 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 700, the student must have continuous enrollment in 700 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 700; however, only six hours of 700 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.

GRAD 710 Independent Research
2-6 hrs.
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. Graded on a Credit/No Credit basis.

GRAD 711 Readings in Doctoral Specialization
3 hrs.
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 712 is ordinarily a culminating experience, students may enroll for 712 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 712 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 project's objectives, rationale, activities, and methods of evaluation of the proposed field experience. 712 should not supplant required or expected courses in the graduate program.

A graduate program has a required internship or field experience, approved by the university curriculum review process, a maximum of 12 hours of 712 may be applied to the graduate degree. This may include courses, which allow an internship or field experience but do not require one, no more than six hours of 712 may be applied to the degree.

Graded on a Credit/No Credit basis.

GRAD 713 Practicum in Teaching in the Discipline 3 hrs.

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. Graded on a Credit/No Credit basis.

GRAD 720 Specialist Project 6 hrs.

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 720, Specialist Project, a Permission to Elect form (available in all departments) must be completed and the student must meet with the Coordinator of Theses and Dissertations 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.

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/officer 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 purchase in Western's Campus Bookstore, or for free downloading at <http://www.wmich.edu/grad/guidelines.PM.pdf>.

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 720, the student must have continuous enrollment in 720 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 720; however, only six hours of 720 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 and 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.

GRAD 725 Doctoral Research Seminar 2-6 hrs.

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. Graded on a Credit/No Credit basis.


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 730, Doctoral Dissertation, a Permission to Elect form (available in all departments) must be completed and the student must meet with the Coordinator of Theses and Dissertations 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.

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/officer 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 purchase in Western's Campus Bookstore, or for free downloading at <http://www.wmich.edu/grad/guidelines.PM.pdf>.

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. The course 730, Doctoral Dissertation, may be registered in increments of one or more hours. Following a student's first enrollment in 730, the student must have continuous enrollment in 730 until all dissertation requirements are completed satisfactorily and approved by the appropriate bodies. A student unable to complete the dissertation in the semester in which the student graduates will be microfilmed by the student's program of study and approved by the appropriate 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 Bell & Howell (formerly UMI). The student is also required to prepare an abstract for the dissertation for publication in Dissertation Abstracts International.

GRAD 732 Doctoral Clinical Internship 1-4 hrs.

Designed for doctoral students pursing 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. Graded on a Credit/No Credit basis.

GRAD 735 Graduate Research 2-10 hrs.

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. Graded on a Credit/No Credit basis.

GRAD 740 Teaching in Higher Education 1-3 hrs.

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. Graded on a Credit/No Credit basis. Prerequisite: Permission of the department, college, and Graduate College is required.

GRAD 745 Teaching Practicum in Higher Education 1-3 hrs.

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 740 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. Graded on a Credit/No Credit basis. Prerequisite: Permission of the department, college, and Graduate College is required.

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.
EXTENDED UNIVERSITY PROGRAMS

Kalamazoo and Statewide Programs
Director: Ms. Natalie Morton
Kalamazoo and Statewide Programs provides undergraduate and graduate courses in a variety of formats, including weekends, field experience classes and two-week summer intensive programs. Courses may be applied to degrees or certificates or can be taken for personal or professional development. In addition, the office extends the University's resources to students and organizations on the east side of the state. For more information, call (616) 387-4167 or click on www.kzoo.wmich.edu.

Distance Education
Director: Dr. Craig Kami
www.dde.wmich.edu
The Department of Distance Education (DDE) partners with WMU academic units to offer educational opportunities via alternative delivery methods. Courses are offered through the department of distance education via four primary delivery methods (Compressed Video Interactive Television (CVIT), Tape Delay, Web-based, and Paper-based self instruction). Some courses are offered via "hybrid" or combined methods. Currently, each branch campus and the main campus have CVIT rooms that connect through high speed data lines between the campuses and the main campus allowing students and faculty to participate in course activity simultaneously. Video-tape delay courses allow for course lectures to be taped and delivered to students viewing at a time that is convenient to them, in the comfort of their own home. Web based courses are offered each semester providing an on-line learning environment from the Colleges of Arts and Sciences, Aviation, Business, Education, Engineering and Applied Sciences, and Health and Human Services. For more information, call (616) 387-4216.

Self-instructional courses are also available. The Department of Distance Education offers over 110 undergraduate credit courses using a variety of media. Courses are developed by University faculty. Registration and completion dates are flexible but under most circumstances, students have up to a year to complete the course. These credit courses may be applied to an undergraduate degree, subject to limitations defined by the University, college, or department in which the student is studying. Information may be obtained by calling (616) 387-4195.

Conferences and Seminars
The Office of Conferences and Seminars provides professional program development and management of conferences and non-credit seminars in cooperation with University departments, professional groups, and community organizations. In addition to program development, management includes registration, fiscal services, marketing, AV and teleconferencing, speaker and exhibit coordination and all other logistics. Programs can take place anywhere in the U.S. For more information, call (616) 387-4174 or click on www.conferences.wmich.edu.

Graduate Programs and Courses Offered in Branch Campuses
A listing of the University's graduate degree programs and courses offered in each of the branch campuses is available in the current Schedule of Course Offerings, which may be obtained at any branch campus office, the main office of Extended University Programs in Kalamazoo (269-387-4160), the Registrar's Office in the Seibert Administration Building in Kalamazoo, or on the World Wide Web at the following address (http://www.wmich.edu/eup). Admission and registration information is also contained in the Schedule of Course Offerings. The Schedule of Course Offerings is published for each semester and session and is available well in advance of the registration period.

Branch Campuses
Extended University Programs' administrative offices are located in Elsworth Hall on Western's main campus in Kalamazoo. Branch campuses and sites follow:

Battles Creek
Mr. Anthony De Rose, Director
Kendall Center
50 W. Jackson
Battles Creek, MI 49017-3505
(616) 965-5380
www.bc.wmich.edu

Grand Rapids
Dr. James Schultz, Director
2333 East Beltline, S.E.
Grand Rapids, MI 49546-5936
(616) 771-9470
www.gr.wmich.edu
- and -
200 Ionia Avenue, S.W.
Grand Rapids, MI 49503
(616) 771-4100

Holland Regional Site at Hope College
B-05 100 E. 8th St.
Holland, MI 49423
(616) 392-1143
www.tolland.wmich.edu
Lansing
Dr. Darrell Johnson, Director
Verndale Office Park
6105 W. St. Joseph Hwy., Suite 205
Lansing, MI 48917
(517) 327-1480
www.lg.wmich.edu

Muskegon
Ms. Deborah N. Newson, Director
Stevenson Center for Higher Education
221 S. Quarterline Road
Muskegon, MI 49442-1742
(231) 777-0500
www.mus.wmich.edu

South Haven
Mr. Leonard Seawood, Director
125 Veterans Boulevard
South Haven, Michigan 49090
(269) 637-7502
www.sh.wmich.edu

Southwest
Mr. Leonard Seawood, Director
2785 E. Napier Drive
Benton Harbor, MI 49022
(269) 934-1500
www.sw.wmich.edu

Traverse City at NMC University Center
Ms. Mary Swartz, Director
220 Dendrinos Dr., Suite 200-S
Traverse City, MI 49684
(231) 995-1788
www.tc.wmich.edu
Alexander 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. Dismissal indicates that a student is no longer admitted to the University and may not register.

Academic standing
The status of a student 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."

Active admission status
An applicant admitted to a graduate degree or graduate certificate program or to Permission to Take Graduate Classes (PTG) status retains active admission status for two years from the time of admission, as well as for one year from the date of the last enrollment as a graduate student at Western Michigan University. If a student never enrolls during the two years following the effective admission date, the student's admission status is canceled and thereafter the student must submit an entirely new application and be formally admitted again before registration may occur. An enrolled student who has not registered for more than one year must complete and have approved a Readmission Application before registration may occur.

Assistantship
A University-administered salary (payment for service) and stipend (gift) 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 professional or service unit to an appointed graduate student. Cognates may be, and often are, courses outside the department of the student's discipline, often to enable the student to examine the relationship of the discipline to other areas.

Certificate program
A graduate certificate is awarded for the satisfactory completion of a nondegree graduate program designed around a narrow, applied, and coordinated curriculum which has a professional focus. A graduate certificate program may be either multidisciplinary or unidisciplinary 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 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.

Students who have completed all of 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. 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.

Closed class
A term used during the registration process to indicate that a course has reached its maximum capacity and is therefore "closed" to further registrations.

Cognate
A course, or courses, related in some way to the major areas 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.

Continuing education courses and programs
Graduate courses and programs offered through Extended University Programs in the Regional Centers of Battle Creek, Benton Harbor/St. Joseph, Grand Rapids, Lansing, and Muskegon, or elsewhere away from the Kalamazoo campus.

Continuous enrollment
Following a student's first enrollment in 700 (Master's Thesis) or 720 (Special Project) or 730 (Dissertation), the student must have continuous enrollment in 700/720/730 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 700/720/730; 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 the required 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.

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 100 through 499. Courses numbered 500 through 599 are for upperclass and graduate students. (Graduate students register for graduate credit in 500-level courses; undergraduate students register for undergraduate credit in 500-level courses.) Courses for graduate students only are numbered 600 through 799.

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 will be granted only for graduate courses in which a grade of "C" or better is earned. Graduate credit may not be earned in a 500-level or 600-level course by attendance in an undergraduate course in a related area.

Credit/No Credit
A method used to evaluate performance in courses which is also recorded on the grades sheet. “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
A unit of academic credit. One credit hour usually represents one hour of class time per week. See also semester hour and quarter hour below.

Credit load
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
For each doctoral student a doctoral dissertation committee shall be appointed to review the dissertation proposal, procedures, and results; to make suggestions relative to these concerns to the student; and to decide whether to approve the dissertation and the oral defense as fulfilling these requirements for the doctoral degree. All members of the committee must approve the dissertation and its oral defense, and the dissertation must be in a form acceptable to the student and to The Graduate College before the student may be graduated with 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 need not be a faculty member in a related 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.

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.

Drop
An official procedure for withdrawing from individual courses without removing registration from all classes. The deadline for the last day to drop a course without academic penalty (grade of “W” on the transcript) is noted each semester or session in the Schedule of Course Offerings. 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 “F” 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 an undergraduate 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 graduate advisor in addition to those undergraduate courses required to complete the bachelor's degree. Dual enrollment is permitted for the calendar year only, and the 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; 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.

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.

Field experience, practicum, work experience, co-op
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) a method used to evaluate performance in a course; 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
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 average
The numerical value given to letter grades. A* is equivalent to 4 points; “A” to 3.5 points; “B+” to 3 points; “B” to 2.5 points; “B-” to 2 points; “C+” to 1.5 points; and “D” to 1.0 point. An “E” or “X” is equivalent to zero points.

Grade point average (GPA)
A student's average computed by dividing total honor points by total credit hours attempted. See also Honor points below.

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 dissertation, specialist project, and dissertation committees.

Graduate Research and Creative Scholars Award
The Graduate Studies Council and The Graduate College annually present two categories of recognition awards to graduate students: the Department Graduate Research and Creative Scholars Award and the 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 the nominalization, the student will be designated as a Department Graduate Research and Creative Scholar.
among the Department awardees, a faculty committee will select those students whose research or creative activity has exceptional merit to be designated as University Graduate Research and Creative Scholars.

Graduate Student Advisory Committee
The Graduate Student Advisory Committee 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 course 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 graduate dean, filed in the student's academic folder in the Records Office, and used to audit the student's eligibility for the degree at the time the student applies for graduation.

Graduate Studies Council
The Graduate Studies Council of the Faculty Senate reviews, develops, and recommends policy regarding graduate education at Western Michigan University.

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. 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 May graduation, and April 1 for August graduation.

Students who change a graduation date need to complete a new application for graduation. No fee or the change is required. The Records Office will not change a student's graduation date unless the student submits this new application for graduation.

Grant
Financial assistance awarded to a student which does not have to be repaid; usually based on need.

Guest student
A degree student from another college who is temporarily admitted to Western Michigan University for one semester. The credits earned are usually transferred back to the student's home institution. See also MIGS below.

Guidelines for the Preparation of Theses, 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 purchase in Western's Campus Bookstore, or for free downloading at <http://www.wmich.edu/grad/guidelines.PDF>.

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, telephone the Research Compliance Officer in the Office of the Vice President for Research, 387-8293.

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. A student must be passing the course to be eligible for an "I." An "I" is not given as a substitute for a failing or low grade. Incomplete grades will convert to an "X" if not removed within one calendar year, or sooner if so stipulated by the instructor. The instructor assigning the grade of "I" will complete an official Report of Incomplete Work form indicating the remaining requirement(s) for the student to complete and the time allowed for the completion of this work. The instructor will keep a copy of this form, and the student will receive another copy along with the grade report issued by the Registrar's Office.

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 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 of completing the research on a specific topic.

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 a grade to the Registrar's Office. See also Readings course below.

Institute
An organizational unit similar in nature to a Center, as defined above, but which is 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.

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, telephone the Research Compliance Officer in the Office of the Vice President for Research, 387-8293.

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, telephone the Office of the Vice President for Research, 387-8298.

Interdisciplinary
Designating a combination of subject matter from two or more disciplines within a course or program.

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 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
Western Michigan University 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.

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.

Michigan residence requirements
The requirements for identifying or establishing permanent residence in Michigan for tuition assessment purposes.

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.

Nondegree student
A student who has been admitted to a nondegree category (usually to a certificate program only or to PTG status) and is not otherwise seeking a master's, specialist, or doctoral degree.

Part-time student
A graduate student who takes fewer than nine hours during a semester (fall and spring) or fewer than five hours during a session (summer I and summer II). See also Class or credit hour load above.

Permission to Take Graduate Classes (PTG)
Permission to Take Classes (PTG status) is a limited admission status for a student with a baccalaureate degree to enable enrollment in graduate courses without pursuing a graduate degree. This status is also granted to a guest student from another university. Permission to Take Graduate Classes does not constitute admission to a graduate degree program, and departments may exclude students with this status from taking courses or may limit the transfer of PTG hours to a degree program should the student later be admitted to a degree program.

Portfolio
A collection of work (e.g., paintings, writings, etc.) which may be used to demonstrate competency in an academic area.

Practicum
See Field experience, practicum, work experience, co-op above.
Prerequisite
A requirement, often the completion of a prescribed course, which must be met before a student may enroll in a specific course. See also Corequisite above.

Probation
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 also the section entitled "Admission Types" in this catalog.

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 document listing the course and other requirements necessary to earn a 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 departmental requirements. The Graduate Student Permanent Program is used to conduct the graduate 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
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: a) to provide the range of expertise necessary to advise a student in the conduct of the specialist project, and b) to ensure that evaluation of the project represents a consensus of professional competence in the student's chosen discipline. As a condition of proceeding, the 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 and other members of the project committee on the selection 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 designated as that of another mechanism, 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, Projects, and Dissertations.

Each project committee shall consist of a minimum of three members or associate members of the graduate faculty of Western Michigan University. Project committee members must be from the department or academic program in which the student is pursuing the specialist degree. The appointment of a special project committee requires the approval of 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 committee, including the qualifications for committee membership, the procedures used to select and appoint committee members, and the requirements 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.

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, telephone the Radiation Safety Officer in the Office of the Vice President for Research, 387-5933.

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. Enrollment in the appropriate graduate course (598, 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 maximum number of credits able 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 appeal procedure for a student who has been dismissed or who seeks to be continued on probationary admission status. The student may challenge the decision to be dismissed or continue on probationary admission status. See also Academic standards above.

Recombinant DNA Biosafety Committee (RDDBC)
All research that involves recombinant DNA molecules must be reviewed and approved by the Recombinant DNA Biosafety Committee prior to initiation. For more information, telephone the Research Compliance Officer in the Office of the Vice President for Research, 387-8293.

Re-entry
An enrollment procedure followed by a student who was previously enrolled in good standing at Western Michigan University but whose active enrollment was canceled. See also Active admission status above.

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 Schedule of Course Offerings available in the Registrar's Office.

Repeatability
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 (exclusive of both master's and doctorate degrees) at WMU. This number may be further limited by individual departments. Permission to retake a course must be obtained from the program advisor or graduate dean before registration for the course to be repeated taken 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.

Research tool
An 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. 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. Consult the program advisor for a full explanation.

Residency requirement
In specialist and doctoral degree programs, the student will devote at least one academic year of two consecutive semesters to sustained, full-time study to meet the "residency requirement." (Full-time enrollment in consecutive summer I and summer II sessions may count for one semester.) Some academic programs, however, have different residency requirements, and the student should consult with the appropriate program advisor for information about a specific program's requirement. See also Class or credit hour load above.

School
A single-discipline organizational unit which has an identification in the public mind beyond that of a department. Schools may have significant subject divisions 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
A unit of academic credit, usually representing one hour of class time per week for one semester. A "semester" is a unit of time, usually 15 weeks long, in the academic calendar of an institution. Western Michigan University uses the semester calendar. See also Quarter or term hour above.

Senior citizen, SCOPE admission status
A special admission status for persons sixty-two years of age or older that provides senior citizens with special privileges and opportunities for study at Western Michigan University. The Schedule of Course Offerings and the catalog are consulted for eligibility and registration information.

Session
A unit of time, 7-1/2 weeks long, in the academic calendar of Western Michigan University. The sessions occur in summer I and summer II. See also Semester above.

Time limit for completion of a degree
Master's students must elect and complete all work for the degree, including transfer work, 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 without a bachelor's degree, within six years preceding the date on which the specialist degree is conferred;
of request for an extension from the graduate dean. 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.

**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: a) to provide the range of expertise necessary to advise a student in the conduct of the master's thesis, and b) 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, Projects, and Dissertations.

Each thesis committee shall consist of a minimum of three members or associate members of the graduate faculty of Western Michigan University. 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 for appointing 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.

**Transcript**

A 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.

**Transfer credit**

Credit that is earned at another accredited institution and accepted toward a Western Michigan University 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. No grades nor honor points earned at another institution transfer to WMU and hence do not affect the WMU grade point average.

**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 Registrar's Office.

**Tuition**

The amount of money which must be paid for courses based on the number of credits for which the student registers.

**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 is 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 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.

**Unit of credit**

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

**University Microfilms, Inc. (UMI)**

See Bell & Howell above.

**Variable credit course**

Some courses list a range of credit hours (e.g., 1-4 hrs.) 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.

**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 in the Schedule of Course Offerings. 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" will be computed into the student's grade point average as hours attempted with zero honor points.
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**Faculty 209**
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<th>Institution</th>
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GRADUATE PROGRAMS, DEGREES, AND CONCENTRATIONS

Accountancy .......................... M.A.
Anthropology .......................... M.A.
Applied Economics ....................... M.A. Ph.D.
Applied Mathematics .................... M.S.
Art ........................................ M.A. M.F.A.
Art Education ............................ M.A.
Audiology .................................. Au.D.
Biological Sciences ....................... M.S. Ph.D.
Biostatistics ............................. M.S.
Business Administration .................. M.B.A.
  Computer Information Systems
  Economics
  Finance
  General Business
  International Business
  Management
  Marketing
  Paper and Imaging Science
Careers and Technical Education .............. M.A.
Chemistry .................................. M.S. Ph.D.
Communication ............................ M.A.
Comparative Religion ........................ M.A.
Computational Mathematics ................. M.S.
Computer Engineering ..................... M.S.E.
Computer Science ........................ M.S. Ph.D.
Construction Management .................. M.S.
Counseling Psychology ..................... M.A. Ph.D.
Counselor Education ........................ M.A.
  Community Counseling
  Rehabilitation Counseling
School Counseling .......................... M.A.
Student Affairs in Higher Education .......
Counselor Education ........................ Ph.D.
Creative Writing .......................... M.F.A.
Development Administration ................. M.D.A.
Peace Corps Option ....................... M.S.
Earth Science ............................. M.S.
  Earth Science
  Earth Science (Teaching)
Education and Professional Development . M.A.
  Early Childhood Education
  Elementary School Teaching and Learning
  Reading
  Teaching at the Middle Level
Educational Leadership ........................ M.A.
  K-12 Central Office Administration
  K-12 Chief School Business Official
  K-12 Curriculum and Instruction
  K-12 School Principal
Organizational Analysis ....................
Educational Leadership ..................... Ed.S.
Educational Leadership ..................... Ph.D.
  Career and Technical Education
  Higher Education Leadership
  K-12 Administration
Organizational Analysis ....................
Educational Technology ........................ M.A.
  Electrical Engineering
  Electrical and Computer Engineering
  Engineering Management
  M.S.
English ..................................... M.A.
  Emphasis on Professional Writing
  Emphasis on Teaching
English ..................................... Ph.D.
  Creative Writing
Evaluation .................................. Ph.D.
  Evaluation, Measurement,
  and Research ............................ M.A. Ph.D.
Family and Consumer Sciences ............... M.A.
  Geography ............................ M.A.
  Geology ................................ M.S.
  Geology ................................ Ph.D.
  Hydrogeology
History ..................................... M.A.
  Public History
History ..................................... Ph.D.
Human Resources Development ................. M.A.
  Industrial Engineering .................. M.S.E. Ph.D.
  Interdisciplinary Health Studies ......... Ph.D.
  Manufacturing Engineering ............... M.S.
  Marriage and Family Therapy ............. M.A.
  Materials Science and Engineering ....... M.S.
  Mathematics ............................. M.A.
  Mathematics ................................ Ph.D.
  Collegiate Mathematics Education
  Mathematics Education .................... M.A. Ph.D.
  Mechanical Engineering .................. M.S.E. Ph.D.
  Medieval Studies ........................ M.A.
  Molecular Biotechnology .................. M.S.
  Music ..................................... M.M.
  Composition
  Conducting
  Music Education
  Music Therapy
  Performance
  Occupational Therapy ....................... M.S.
  Operations Research ........................ M.S.
  Orientation and Mobility ........................ M.A.
  for Children
Paper and Imaging Science and Engineering .................. M.S. Ph.D.
  Performing Arts Administration .......... M.F.A.
  Physical Education ....................... M.A.
  Athletic Training
  Exercise Science
  Pedagogy
  Special Physical Education
  Sports Management
  Sports Studies
Physician Assistant ........................ M.S.M.
Physics ..................................... M.A. Ph.D.
Political Science .......................... M.A. Ph.D.
Psychology ................................ M.A.
  Behavior Analysis
  Industrial/Organizational Psychology
Psychology ................................ M.A.
  Behavior Analysis
  Clinical Psychology
Public Administration ........................ M.P.A.
  Health Care Administration
  Human Resources Administration
  JD/M.P.A. Joint Program
  Law
  Nonprofit Leadership and Administration
  Public Management
Public Administration ........................ Ph.D.
  Rehabilitation Teaching .................... M.A.
Science Education .......................... M.A. Ph.D.
  Social Work
  Interpersonal Practice
  Policy, Planning, and Administration
Socio-Cultural Foundations and
  Educational Thought ....................... M.A.
Sociology ................................ M.A.
  Applied Sociology Option
  Disciplinary Option
Sociology ................................ Ph.D.
  Criminology
  Medial Sociology
Spanish ..................................... M.A. Ph.D.
Special Education .......................... M.A.
  Clinical Teacher
  Master Teacher
  Special Education Administration
  Special Education Technology
  Special Education
Speech Pathology and Audiology ............... M.A.
  Speech-Language Pathology
  Audiology
Statistics ..................................... M.S. Ph.D.
  Teaching Children Who Are Visually
  Impaired
  Teaching of Geography ...................... M.A.
  Teaching of Music ........................ M.A.
DUAL MASTER'S PROGRAMS
  Counselor Education and
  Rehabilitation Teaching ................. M.A./M.A.
  Teaching Children Who Are Visually
  Impaired and Orinigation
  and Mobility .............................. M.A./M.A.
GRADUATE CERTIFICATE PROGRAMS
  Alcohol and Drug Abuse
  Educational Technology
  Ethnic History
  Health Care Administration
  Holistic Health Care
  Nonprofit Leadership and Administration

