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Accountancy

Admission

The M.Acc. program is primarily designed for students who possess an undergraduate degree in accounting or its equivalent. The minimum components of an equivalent undergraduate degree in accounting are outlined below. Applicants deficient in any of these areas are required to successfully remedy the deficiency by completing the appropriate undergraduate preparatory courses or the graduate equivalent. Individual courses may be waived for students who have successfully completed comparable courses at a regionally accredited institution. Waiver of prerequisite course work is a judgment made by the director of the M.Acc. program. It is based on the grade received, credit hours, when the course was completed, course content, focus, and other factors.

Applicants who do not possess an undergraduate degree in accounting may be admitted on a limited basis if space is available. Admission for these few slots is very competitive. To be considered, such applications must be received by April 1 for admission the following Fall Quarter.
Candidates should consult with the M.Acc. Program Director for further details concerning policies and procedures.

Degree Requirements

Prerequisites

The M.Acc. program is primarily designed for students who possess an undergraduate degree in accounting or its equivalent. The minimum components of an equivalent undergraduate degree in accounting are outlined below. Applicants deficient in any of these areas are required to successfully remedy the deficiency by completing the appropriate undergraduate preparatory courses or the graduate equivalent. Individual courses may be waived for students who have successfully completed comparable courses at a regionally accredited institution. Waiver of prerequisite course work is a judgment made by the director of the M.Acc. program. It is based on the grade received, credit hours, when the course was completed, course content, focus, and other factors.

Applicants who do not possess an undergraduate degree in accounting may be admitted on a limited basis if space is available. Admission for these few slots is very competitive. To be considered, such applications must be received by April 1 for admission the following Fall Quarter.

Candidates should consult with the M.Acc. Program Director for further details concerning policies and procedures.

Business Prerequisites: (waived for students with undergraduate degrees in business or a Master in Business Administration degree from AACSB-accredited schools)

- Economics
- Finance
- Management Science
- Management

• Marketing
• Communications
• Business Writing

Accounting Prerequisites: (waived for students with undergraduate degrees in accounting from AACSB-accredited schools.)

• Accounting Principles
• Intermediate Financial Accounting
• Managerial (Cost) Accounting
• Taxation
• Accounting Systems
• Auditing and Assurance Services

Course of Study

M.Acc. Curriculum

I. Required	**17**
ACC 741 Financial Accounting Topics and Research	4
ACC 744 Attestation Topics and Research	4
ACC 747 Professional Issues Seminar	1
ACC 750 Capstone Project	4
LAW 735 Law for Accountants	4
II. Select two	**8**
ACC 742 Government and Not-for-Profit Accounting	4
ACC 743 Taxation Topics and Research	4
ACC 745 Accounting Information Technology	4
ACC 757 International Accounting (4)	4
ACC 780 Special Topics in Accounting	4
III. Select 5 other electives	**20**
May include coursework listed in part II above in excess of 8 hours May include 4 hours internship May include graduate coursework at the 600 or 700 level taken to fulfill business or accounting prerequisites	
Total Required	**45**

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Aerospace Medicine

Introduction

The aerospace medicine Master of Science degree program is conducted by the Boonshoft School of Medicine's Department of Community Health, Division of Aerospace Medicine. The program addresses aviation and spaceflight biomedical issues including physiological, psychological, bioengineering, and clinical factors. Selection and periodic examination requirements for aircrew are detailed, as are normal and pathological changes associated with aircrew and the flight environment.

Admission

The minimum requirement for admission to the M.S. degree program in aerospace medicine is the M.D. or equivalent medical degree, a clinical year of medical training, at least steps one and two of the USMLE, and the general requirements for admission into the School of Graduate Studies, for North American physicians. International physicians need the MD or equivalent degree and be able to meet the general requirements of admission to the School of Graduate Studies. Prospective students communicate with the Aerospace Medicine divisional office for acceptance (not with the Department of Community Health). It is possible that certain advanced students can take individual courses in the curriculum and apply these to other degree programs.

Degree Requirements

Students must complete the required courses and a research project. A research thesis option is also available.

Faculty

Professors
Stanley R. Mohler (Emeritus), aerospace medicine
Mary Anne Frey (Emerita), aerospace physiology

Associate Professor
Robin E. Dodge (director), division of aerospace medicine

Assistant Professor
Farhad Sahiar (director), aerospace medicine residency program

Instructors
Morton Nelson, epidemiology
Adrienne Stolfi, biostatistics

Program Description

Required Core Courses
CMH 601, 602, 621, 622, 641, 642, 643, 651, 654, 655, 700, 701, 711, 721, 723, 726, 731, 789, 850 or 899

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Applied Behavioral Science: Criminal Justice and Social Problems

Introduction

The Applied Behavioral Science Program currently offers Master of Arts degree in Criminal Justice and Social Problems.

The Criminal Justice and Social Problems track emphasizes methodology and theoretical courses and topics-focused workshops aimed at improving the research and intellectual foundations for employment and professional advancement in the criminal justice fields. Students in the program typically work for, or plan to work for, the courts, probation offices, police agencies, prison administrations, or private and public programs for juvenile offenders.

The training received in basic social science skills and knowledge is also a useful foundation for those who wish to proceed to doctoral-level study in a number of fields. An optional practicum provides field experience for those without prior experience in a criminal justice field. The program culminates in an applied research effort that, at the student's option, takes the form of either a journal article project or a traditional thesis. Courses are offered primarily in the evenings and workshops primarily on the weekends to accommodate employed students.

Admission

In addition to meeting the admission requirements of the School of Graduate Studies, students applying for admission into the Criminal Justice and Social Problems M.A. degree program are generally expected to have an undergraduate degree in criminal justice, social work, or a social science (such as sociology, psychology, or political science). Significant experience working in a criminal justice field can substitute for this expectation for students with degrees in other fields. Admission is generally for summer or fall quarters.

Faculty

Professors
Jeanne Ballantine (emeritus), applied research methods, sociology of education
Marlese Durr, organization, occupations and work, research methods

Associate Professors
Anna Bellisari, human evolution, human growth and development, cultural diversity, women's issues
Jacqueline Bergdahl, women and crime, methodology
Michael Norris, criminology, race and ethnic relations
Chigon Kim, methodology, race and ethnic relations
Karen Lahm (director), criminology, deviance, women and crime, methodology

David Orenstein, theoretical foundations, qualitative methods
Geoffrey Owens, Tanzania, political economy, suburbanization
Tracey Steele, crime and social control, gender, sexuality

Assistant Professors
LaFleur Small, health care and the elderly, populations
Julianne Weinzimmer, social stratification and inequality, ethnic and conflict identity

Financial Assistance

The ABS program offers several graduate assistantships and graduate tuition scholarships. Graduate scholarships for both part-time and full-time students may be available through the School of Graduate Studies. Awards of financial assistance are generally for the entire academic year, which begins with the fall quarter. Applications for assistantships are obtained from the ABS office and should be submitted to that office by May 15.

Course of Study

Core Requirements	**24**
ABS 701 Methodology I	4
ABS 702 Methodology II	4
ABS 703 Applied Methodology	4
ABS 751 Theoretical Foundations	4
ABS 752 Explaining Crime	4
ABS 753 Criminal Justice	4

Additional Courses (four options)	**24**
Option 1 (for students with sufficient work experience in the field who select to complete a project)	
ABS 788 Graduate Seminar in Applied Behavioral Science	12
Elective Alternatives (to be selected with an advisor)	8
ABS 798 Graduate project	4
Option 2 (for students with sufficient work experience in the field who select to complete a traditional thesis)	
ABS 788 Graduate Seminar in Applied Behavioral Science	8
Elective Alternatives (to be selected with an advisor)	8
ABS 799 Thesis Research	8
Option 3 (for students without sufficient work experience in the field who select to complete a project)	
ABS 788 Graduate Seminar in Applied Behavioral Science	12
ABS 779 Practicum	8
ABS 798 Graduate Project	4
Option 4 (for students without sufficient work experience in the field who select to complete a traditional thesis)	
ABS 788 Graduate Seminar in Applied Behavioral Science	8
ABS 779 Practicum	8
ABS 799 Thesis Research	8

Total	**48**

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Biochemistry and Molecular Biology

Introduction

The Department of Biochemistry and Molecular Biology offers a program of study leading to the Master of Science degree in biochemistry and molecular biology. The major purpose of the M.S. program is to provide the student with a strong biochemical background that can serve as a basis for further graduate or professional study. Graduate study with faculty in the Department of Biochemistry and Molecular Biology leading to a Doctor of Philosophy degree is available through the Biomedical Sciences Ph.D. Program.

Major research interests of the department are grouped into three interrelated areas: molecular structure and function, molecular genetics, and the application of magnetic resonance (MR) to biomedical research. Specific research projects deal with the structure and function of membranes, proteins and enzymes, nucleic acids, chromatin structure and function, molecular genetics, nucleotide metabolism, and the use of MR to study biochemical phenomena.

Admission

Applicants must fulfill the requirements for admission established by the School of Graduate Studies. A bachelor's degree in the biochemical, biological, or chemical sciences, including course work in organic chemistry, physics, and calculus, is generally required. In addition, letters of recommendation are an important admission consideration.

Degree Requirements

Qualification for the Master of Science degree requires a candidate to fulfill the requirements of the School of Graduate Studies, to complete departmental course work, and to submit an acceptable research thesis.

Summary of Course and Thesis Requirements

1.Biochemistry lecture sequence (BMB 750 and 752). A grade of B must be obtained in each quarter of these courses. If a B is not obtained, the student may repeat the course (or courses) once. A repeat of BMB 750 and/or 752 must be completed within a year of the quarter in which the deficiency occurs.

2.Research Perspectives (BMB 702).

3.Research Ethics (BMB 703).

4.Graduate seminars: a total of 6 credit hours of graduate-level seminars in biochemistry or other departments.

5.Two additional 700-level courses: these may include 700-level courses from other departments.

6.The student and his or her thesis advisor will have the responsibility for selecting advanced courses and seminars suited to each student's program needs and interests.

7.The thesis must be based on hands-on research. BMB 899 (or BMB 699) must be taken each quarter the student performs laboratory research. The thesis advisory committee must be made up of at least three faculty from the Department of Biochemistry. The student will orally defend the completed thesis and present a departmental seminar on his or her research.

Faculty

Professors

Gerald M. Alter, Ph.D., Protein structure and dynamics
Steven J. Berberich, Ph.D. (Interim Chair), regulation of cell proliferation, oncogenes
Julian G. Cambronero, Ph.D., Leukocyte cell signaling, molecular basis of chemotaxis
Michael Leffak, Ph.D., DNA replication in human cells, and its relationship to inherited disease
Daniel T. Organisciak, Ph.D., visual biochemistry, membrane function, neuronal lipid metabolism
Lawrence J. Prochaska, Ph.D., energy-transducing membranes, cytochrome oxidase
Nicholas V. Reo, Ph.D., Cellular metabolism; NMR-based metabolomics
Robert A. Weisman, Ph.D. (Emeritus), in vivo magnetic resonance, positron emission tomography

Associate Professor

Madhavi Kadakia, Ph.D., Characterization of p63 and p73 responsive gene expression using DNA microarray
John V. Paietta, Ph.D., (Graduate Program Director) molecular genetics, gene expression

Assistant Professors

Oleg Paliy, Ph.D., host-pathogen interactions; intestinal microbiology; systems biology
Yong-jie Xu, M.D. Ph.D., molecular mechanism of the DNA replication checkpoint

Research Assistant Professors

Guoqi Liu, Ph.D.,
Michael Markey, Ph.D., Molecular genetics of tumor suppressors including genomics based approaches

Adjunct and Joint Faculty

Patrick B. Dennis, Ph.D., adjunct assistant professor, regulation of ribosomal biosynthesis and breakdown
Rajesh Naik, Ph.D., adjunct professor,
Paul G. Seybold, Ph.D., professor (chemistry), chemical carcinogens, physical biochemistry

Voluntary Faculty

Darrell E. Fleischman, Ph.D., adjunct associate professor, photobiology

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Biological Sciences

Introduction

The program leading to the Master of Science provides students with the opportunity to gain a solid foundation in modern interdisciplinary biology in preparation for careers as professional biologists in industry, government, or education and research organizations or for further professional training.

Areas of specialization available through the Department of Biological Sciences are:
• Wetlands Restoration
• Parasitology and Microbiology
• Morphological and Molecular Evolution
• Speciation and Ecological Genetics
• Nuclear structure and Function
• Plant Responses to Environmental Stressors
• Comparative & Ecological Physiology
• Cellular Mechanism in Skin
• Scientific Inquiry in Learning and Teaching
• Evolutionary Biology
• Exercise Physiology
• Endocrinology
• Freshwater Ecosystems
• Large-scale ecology, Conservation, and Forest Ecology

Instructional areas within the department consist of formal course work, laboratory research, and special topic seminars. In order to provide flexibility and an interdisciplinary approach, specific prerequisites for many graduate courses are not listed. However, areas of prior training are recommended for students in order to obtain maximum benefits. In addition, the other life science departments (Biochemistry and Molecular Biology, Anatomy and Physiology, Pharmacology and Toxicology) as well as the Departments of Chemistry, Geological Sciences, Mathematics and Statistics, Physics, Psychology, and the College of Engineering and Computer Science, currently offer courses that support the biology program. A graduate in biology, therefore, may receive exposure to subjects in the field of specialization, in related biological fields, and in supporting disciplines outside the department.

Students may pursue an M.S. degree in biology through one of two options. Option One requires the submission and oral defense of a thesis based on original research performed while enrolled as a graduate student at the university. Although there is little specific course work required for this option, candidates will be advised to enroll in graduate-level courses deemed appropriate for successful understanding of the research to be undertaken. Option Two is a course work option that requires the successful completion of 45 quarter credits of graduate-level course work, including a critical literature review, a laboratory rotation, and a

final oral examination. The desired option can be elected by students only after consultation with the chair of the graduate committee. Consideration for electing the appropriate option must be given to the availability of research topics and advisors and to the student's research and educational interests.

All candidates, regardless of the option chosen, are required to obtain a major advisor and an advisory committee. The advisory committee will help formulate a study program, provide counseling, and evaluate student progress. If a student is uncertain of a major field of interest or of an appropriate option, the department graduate committee will assign a temporary advisor who will function in place of an advisory committee until the student selects an option and is accepted by an advisory professor.

All candidates must meet requirements for the Master of Science degree defined in the section Degree Requirements. They must, in addition, meet the specific requirements of the option chosen.

For additional information on the department and its programs, you might wish to consult our web site at http://biology.wright.edu.

Environmental Sciences Core
The requirements for the Master of Science degree in biology are quite flexible, and include a thesis and nonthesis option. The department also permits a student to pursue an advanced course of study that ensures an interdisciplinary environmental perspective. Both the thesis and nonthesis M.S. degree options in biological sciences can be specialized to provide an interdisciplinary environmental prospective. For this option, a student's advisory committee must include a member from outside the department, e.g., a member of the geology or chemistry faculty. And, in addition to meeting the general requirements for the Master of Science degree in biology, course requirements for the environmental core include:

• Environmental chemistry
• Geologic and environmental applications of geographic information systems
• Environmental statistics
• Risk assessment
• Environmental sciences seminar
• Two environmental sciences electives outside the biology department

A student completing these requirements will receive an M.S. degree in environmental sciences.

Admission

To meet the minimum requirement for admission to the graduate program in biological sciences, applicants must fulfill the requirements for admission established by the School of Graduate Studies. In addition, a bachelor's degree in the biological or biochemical sciences including course work in organic chemistry, physics, and calculus is generally required. Admission preference is given to students with a grade point average of 3.0 or better on a 4.0 grading scale. Letters of recommendation and GRE General Test scores are also used in evaluating students for admission.
MCAT and LSAT scores can substitute for GRE scores.

Degree Requirements

Students who are candidates for the Master of Science degree in biology must meet the following requirements:

1. The candidate must complete a minimum of 45 quarter credits. A maximum of 12 credits

of graduate courses may be transferred from other institutions. At least 30 quarter hours must be at the 600-800 level in biological sciences and related fields.

2. One course in scientific or technical writing (such as BIO 608 or ENG 533 and 544) is required.

3. Candidates must be registered in the quarter in which they defend their thesis.

4. The candidate must maintain a 3.0 cumulative average; no more than 9 credit hours of “C” grades may be applied to the degree.

5. The degree options have the following requirements:

Option 1:

a. Candidates must complete at least four graduate seminars. Three of the four graduate seminars must be offered by the Department of Biological Sciences faculty as BIO 800.

b. The College of Science and Mathematics requires a Program of Study to be filed with the School of Graduate Studies by the start of the third quarter of enrollment for full-time students, and by the time 18 hours have been taken for part-time students.

c. Candidates must submit an approved thesis proposal with the Graduate Committee by the end of the third quarter. This proposal should be prepared in consultation with the student’s advisory committee. Students who have not done so will not be permitted to continue enrollment in BIO 899 (Graduate Research). Upon acceptance of the thesis proposal by the advisory committee, one copy is filed in the graduate student’s file. Research may deviate from the original proposal; however, suitable supplementary information must be submitted to the advisory committee.

d. Candidates must submit and orally defend a thesis based on original research performed while enrolled as a graduate student at the university.

Option 2:

a. Candidates must complete 45 credit hours of graduate course work. For all Option 2 students, except those in the Environmental Sciences program, a maximum of 12 credits can be earned in departments other than life science departments.

b. Four graduate seminars are required, two of which must be taken in the Department of Biological Sciences.

c. Candidates must form an advisory committee and file a Program of Study before the end of their third quarter (or 25 credit hours).

d. Candidates must complete 4–6 credit hours of BIO 699 (Special Problems in Biology). A copy of their written report must be put in the student’s department file. A maximum of 6 credit hours of BIO 699 and BIO 899 together can apply to degree requirements.

e. Candidates must write a critical review (BIO 799) and pass an oral exam administered by the advisory committee upon completion of course work. A maximum of 6 credit hours of BIO 799 can apply to degree requirements.

Related Graduate Programs

In addition to the Master of Science degree in Biological Sciences, faculty in the Department of Biological Sciences participate in several other graduate programs. The

department supports The Interdisciplinary Master of Science in Teaching (M.S.T.) program offered by the College of Science and Mathematics. Several faculty in the Department are affiliated with the Master of Science degree in Microbiology and Immunology. Faculty also supervise graduate students in two doctoral programs leading to the Ph.D. degree: one program is in Environmental Sciences; the other is in Biomedical Sciences. See elsewhere in the graduate catalog for descriptions of these four programs.

Facilities

The Department of biological Sciences is housed in two buildings, the Biological Sciences building and the Matthew O. Diggs Laboratory for Life Science Research. The Biological Sciences building was completed in 1975 and presently is being renovated. It contains approximately 100,000 square feet and houses facilities of the Biological Sciences; Biomedical Sciences; Clinical Laboratory Science; and the Neuroscience, Cell Biology, and Physiology. The new Matthew O. Diggs III Laboratory for Life Science Research, which opened in November 2007 is at the forefront of "green" building design. The facility is one of the first university research laboratories in Ohio registered under Leadership in Energy and Environmental Design (LEED).

The LEED Green Building Rating System(TM) is the nationally accepted benchmark for the design, construction and operation of high-performance green buildings. LEED promotes a whole-building approach to sustainability through a variety of energy-saving methods. A research laboratory typically consumes four times more energy than a normal classroom building, but the new facility will use far less energy than most facilities of its kind.

The green building technologies in the 45,000-square-foot building include:
1. A 30 percent reduction in water use by installing waterless urinals, low- flow lavatories and other plumbing fixtures;
2. A reduction in "heat island effect" through an Energy Star roof that reflects more sunlight back into the atmosphere using fewer dark surfaces;
3. Day lighting to 75 percent of the building through vertical glazing, which accepts more winter solar heat;
4. Sunshading devices that help manage solar heat gain;
5. Low Volatile Organic Compound (VOC) emitting adhesives and sealants, paints, carpet and composite wood are used throughout;
6. At least 75 percent of the waste from construction and demolition will be recycled or salvaged, instead of sent to landfills and incinerators;
7. Reduced energy consumption through heat recovery, efficient HVAC equipment and increased insulation;
8. Continuous measurement and verification of energy consumption.

The department maintains classrooms and research laboratories with specialized instrument rooms, cold rooms, constant temperature rooms, animal rooms, a greenhouse, radioisotope laboratories, an electron microscopy center including complete darkroom capability. Major items of available research equipment include liquid scintillation counter; amino acid analyzer; infrared, visible, and ultraviolet spectrophotometers; spectrofluorometer; DNA and protein chip technology; flow cytometer; confocal microscope; greenhouse and experimental garden; field and aquatic sampling gear; preparative ultracentifuges; nuclear magnetic resonance spectrometer; mass spectrometer; a wide range of instruments for light microscopy; transmission and scanning electron microscopes; preparative and analytical chromatography instruments; specialized cell and tissue culture facilities, and facilities for recombinant DNA research; and computer services, A biological preserve plus additional wooded areas on campus totaling 200 acres provide opportunities for field-oriented research and teaching experiences. Nearby natural areas include an extensive wetlands and a wide variety of aquatic habitats.

The department has excellent working relationships with other departments on campus,

with the scientific complex of Wright-Patterson Air Force Base, and with several facilities that are affiliated with the Wright State University School of Medicine.

Faculty

Professors

James P. Amon, (emeritus) microbial ecology, including molecular biology, cell biology, and electron microscopy
Larry G. Arlian, (emeritus) medical entomology, immunoparasitology, physiology
Donald Cipollini, Jr., plant physiological ecology
David L. Goldstein (chair), comparative physiology of osmoregulation, physiological ecology, ornithology
Barbara E. Hull, cell biology, histology, electron microscopy, reconstruction of skin in vitro
Dan E, Krane, molecular and genome evolution, human population substructuring
James R. Runkle, plant ecology, general ecology

Associate Professors

Scott E. Baird, developmental genetics
Mark D. Mamrack, cellular biochemistry, signal transduction, carcinogenesis
Mill W. Miller, (Graduate Program Director) cellular and developmental biology/nuclear transport
Roberta L. Pohlman, exercise physiology
James H. Tomlin, science education, learning theory
Yvonne Vadeboncoeur, aquatic ecology

Assistant Professors

Volker Bahn, large-scale ecology & conservation biology
Paula Bubulya, nuclear structure & gene expression
Katherine Excoffon, virology & cell biology
Lisa Kenyon, scientific inquiry in learning and teaching
Jeff Peters, molecular ecology
Tom Rooney, conservation biology
Melissa Schen, scientific reasoning skills as it pertains to undergraduates
John Stireman, evolutionary biology

Financial Assistance

Graduate teaching assistantships (GTA) and tuition scholarships are available on a competitive basis, and graduate research assistantships (GRA) may be available by arrangement with individual faculty. These appointments carry a waiver of most tuition and instructional fees for both residents and nonresidents, and GTA and GRA appointments also include a stipend. Appointments are made for the academic year and may be renewed for a second year. Additional assistantship support may be available for the summer quarter. See the “Financial Assistance, Fees, and Tuition” section of the graduate catalog for details.

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Biomedical Engineering

Introduction

The Department of Biomedical, Industrial, and Human Factors Engineering offers a program of graduate study leading to a Master of Science in Engineering (M.S.E.) degree with a major in biomedical engineering. The M.S.E. program is broad in scope and emphasizes portable concepts in the design and analysis of complex physical systems using modeling, synthesis, and optimization techniques, and bridges interdisciplinary engineering areas such as controls, robotics, electronics, and communications.

A Ph.D. in engineering with a major in biomedical engineering is also available. For details, see Engineering Ph.D. Program.

Admission

To be considered for admission to the M.S.E.-Biomedical Engineering program, students must first satisfy basic requirements of the School of Graduate Studies. This includes having a bachelor's degree in engineering or a related area with an overall undergraduate grade point average of at least 2.7 (on a 4.0 scale) or an overall undergraduate grade point average of at least 2.5 with an average of 3.0 or better for the last 90 quarter hours (60 semester hours) earned toward the undergraduate degree. International students must have a TOEFL score of at least 550/213 or an IELTS score of at least six. In addition, the program requires students from non-ABET accredited undergraduate programs to submit general GRE test scores. Program admission decisions are based on complete application information including overall academic performance and standardized test scores where applicable.

Collaboration

The Dayton Area Graduate Studies Institute provides collaboration opportunities through the graduate engineering courses, faculty, and research resources of the Air Force Institute of Technology, the University of Dayton, The Ohio State University, and the University of Cincinnati.

Degree Requirements

Students should plan a program of study in consultation with a faculty advisor. The program of study should be finalized by the time the student completes 12 credit hours of graduate study.

The following requirements must be met for the Master of Science in Engineering degree:

1. Completion of 45 graduate credit hours in courses that have prior approval by a BIE graduate advisor.

2. At least 36 of the total 45 graduate credit hours must be engineering or computer engineering courses. At least 24 of these must be biomedical engineering courses.

3. At least 24 of the 45 graduate credit hours must be courses numbered 700 or above.

4. At least 6 of the total 45 graduate credit hours must be courses in mathematics, statistics, or computer science.

5. Students may choose either a thesis option or a 45 credit hours graduate advanced course work option. The thesis option consists of a research project satisfying all requirements of the School of Graduate Studies. The final report (thesis) must be completed and successfully defended in an oral examination before the major committee. Up to 12 credit hours of 899, Thesis, may count toward degree requirement of 45 graduate credit hours.

Facilities

Graduate students have access to a wide range of computer systems interconnected by local and wide-area networks. Access is available to three DEC Alpha AXP 4000/610's; numerous Sun, DEC, and Silicon Graphics fileservers and workstations; X-windowing terminals; and personal computers. Access is also available to the Ohio Supercomputer via the Ohio Academic and Research Network (OARNET). In addition, each graduate faculty member has a well equipped research laboratory with a network of heterogeneous computers and peripherals. Please visit http://www.cs.wright.edu/bie/ for details. Also see section on Computing and Telecommunications Services (CaTS).

Faculty

Professors

Thomas N. Hangartner, biomedical engineering, medical imaging, CT scanning, instrumentation, computers
Ping He, biomedical engineering, medical imaging, ultrasonics, instrumentation, biomedical signal processing
S. Narayanan (chair), modeling, interactive systems, simulation, decision aiding
Chandler A. Phillips, human control systems, biomechanical modeling, orthotic and ergonomic engineering
Blair A. Rowley, biomedical engineering, rehabilitation engineering, computer applications to augmentative communication, instrumentation, bioelectric effects of low-level electrical currents on tissue growth and healing, engineering education methodologies

Affiliated Professor

Marvin Miller, bone strength and density in infants and children, radiological imaging, biomechanical bone mechanisms, medical genetics

Associate Professor

David B. Reynolds, prosthetics/orthotics engineering, biomechanics, biomimetics, pneumatic muscle, biofluid mechanics

Assistant Professor

Julie A. Skipper, biomedical engineering, medical imaging, CT scanning, instrumentation, computers

Lecturer

David M. Kender, biomedical electronics, human factors engineering

Graduate Assistantship

Assistantships are available to students on a competitive basis. Students awarded assistantship support are eligible for stipends and remission of tuition fees. Interest in financial support should be indicated at the time of application.

Research

Research in biomedical engineering currently encompasses two main areas: medical imaging and ergonomic/biomechanical engineering. Included are orthotic/prosthetic engineering, orthopedic engineering, soft-tissue biomechanics, medical ultrasound with emphasis on soft tissue characterization, specialized CT scanners with emphasis on sensitivity and imaging of bone, computerized augmentative communications for the disabled and applied biomaterials. Facilities include laboratories at the university and at area hospitals. The Biomedical Imaging Laboratory and the Air Force Research Laboratory offer unique opportunities for research projects involving instrumentation, mechanics, and computers applied to medical and industrial-government problems. Graduate students in biomedical engineering work on real-life problems.

Research at Wright State is not limited to academic laboratory facilities. Several industrial companies, laboratories, and Wright-Patterson Air Force Base are involved in joint research efforts with the university and have unique facilities that are available for faculty and graduate research.

Graduate School
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Last updated by the WSU Web Team (mnr).
Please send comments to Denise Thomas-Hoskins.

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Biomedical Sciences Ph.D. Program

Introduction

This interdisciplinary program leads to the Doctor of Philosophy degree in biomedical sciences. It recognizes the interrelatedness of the various traditional disciplines and seeks to educate scientists who are qualified to develop this potential. Classroom and laboratory instruction stresses experiences that span a broad spectrum of knowledge.

The program provides an integrated background in biological, physical, chemical, and computational disciplines in addition to an in-depth experience in research. Graduates are expected to be sufficiently flexible to participate in solving a broad range of complex biomedical problems.

The primary aim of the program is to prepare students for a research career. In-depth study is possible in a number of areas.

Admission

Entrance Requirements

Applicants should have:
1. A baccalaureate degree from an accredited institution

2. An undergraduate grade point average of at least 3.0 on a 4.0 scale

3. One year of mathematics, including introductory calculus

4. One year of physics

5. One year of biology

6. Two years of chemistry, including an organic chemistry sequence

7. A minimum TOEFL score of 600 paper/100 internet/6.5 IELTS (international students)

8. Acceptable scores on the general GRE test

Prospective students must submit one official transcript from each institution attended. Under special circumstances, deficiencies in prerequisites may be waived or corrective measures arranged by action of the Admissions Committee.

All application material should be submitted by March 15.

Degree Requirements

Students will master a series of core and advanced content courses, and complete at least two laboratory rotations. These serve as an interdisciplinary base for the development of dissertation research. The institution awards the degree when the student satisfactorily completes the required work.

The program first develops a reservoir of basic knowledge through an interdisciplinary core, consisting of a combination of biochemistry and molecular biology, cell biology, chemistry, human physiology, and intercellular communication. The advanced curriculum is organized into interdisciplinary areas of concentration.

The program requires students to take 18 credit hours of advanced courses, a course each quarter, pass a preliminary examination, and produce an acceptable dissertation based on original research.

Waiver of Program Requirements

Students may petition for exemption from all or part of the core curriculum. Petitions may also be submitted for waiver of credit for previous graduate courses taken in another accredited program. Course credit of up to 12 credit hours may be waived providing (a) the grade attained in each course is a B or above, (b) the course was taken within five years of the actual waiver, and (c) the course relates to the area of concentration chosen in this program. Petitions for obtaining credit for laboratory experiences may be made, subject to the same credit hour limitations and time constraints as for courses.

The program does not have a fixed time for the awarding of the Ph.D. degree. This depends on the rate of progress of the individual student, but averages five years. Graduate credit applied toward the doctoral degree is valid for only nine years from the date the student enters the program. Extenuating circumstances must be acceptable to the Academic Policies Committee of the Biomedical Sciences faculty, the program director, and the dean of the School of Graduate Studies.

A minimum of 90 credit hours toward the doctoral degree must be completed at Wright State University.

Dissertation

Each student chooses a faculty member who will guide and direct the dissertation research on a daily basis. In addition, a supervisory committee is formed to periodically review the student's progress. The relationship between the student, the faculty advisor, and the committee is central to the program. The committee determines when the research may be considered complete and must approve the written dissertation, as well as the student's public defense of it. The committee certifies to the program director the competency and achievement of the dissertation.

Grade Standards

Graduate students working toward the Doctor of Philosophy degree must maintain at least a 3.0 grade point average in all graduate courses and in all other graduate work that is assigned letter grades. Dissertation research will receive grades of progress made (M) or unsatisfactory (U) until the dissertation is accepted; these will then be converted to a pass/fail grade (P/U). A 3.0 GPA and the recommendation of the student's supervisory committee and the program director are required for graduation.

Probation

Any student whose cumulative grade point average falls below 3.0 will be placed on probation. For students beyond Year I, failure to re-attain a cumulative GPA of 3.0 within the next 12 credit hours of course work will result in a recommendation for dismissal from the program.

A first-year student enrolled in the core curriculum must achieve an overall grade point average of at least 3.0 after completing Year I. A student who completes Year I with a GPA of less than 2.7 will be recommended to the dean of the School of Graduate Studies for dismissal from the program. Students with a GPA above 2.7 but below 3.0 must re-attain a 3.0 by the end of the next quarter (fall). Students who fail to attain a GPA of 3.0 by the end of fall quarter following Year I will be recommended for dismissal from the program. Students who receive a C in a core course during Year I may repeat the course while continuing advanced courses as determined by the program director. If a student repeats a core course, the grade received the second time will be used in calculating the student's GPA.

Students who fail the preliminary examination at the end of the second year will either be dropped from the program or be allowed one reexamination, depending on the recommendation of the Examination Committee.

Matters pertaining to dismissal for non-academic matters are handled by the Office of Student Affairs.

Summary of Requirements
Listed below is a summary of the requirements for the Doctor of Philosophy degree in biomedical sciences at Wright State University. Students must:

1. Complete core and advanced courses with a minimum grade point average of 3.0 (B)

2. Choose a dissertation director and a supervisory committee with the approval of the program director

3. Pass a preliminary examination

4. Prepare a written dissertation proposal

5. Accumulate a minimum of 150 didactic, laboratory, and research quarter hours

6. Conduct an acceptable original research problem, submit an approved written dissertation, and make a successful public defense

7. Be certified by the program director as having completed all requirements for the Ph.D. degree

8. Meet residency requirements

9. Be registered in the quarter in which the degree is conferred

10. Deposit one (1) electronic pdf copy of the dissertation at OhioLINK http://www.ohiolink.edu/etd/submit2/ or with the School of Graduate Studies for transmittal to OhioLINK, and one (1) printed copy of the dissertation with the BMS Program Office no later than 30 days after the end of the quarter in which the degree will be granted

11. Fulfill all requirements within nine years of entrance into the program

MD/PhD Degree
Students who have an M.D. degree or are in good standing in the preclinical curriculum of an accredited medical school may be exempted from the BMS core curriculum. Depending on the area of concentration and the recommendation of the dissertation director, a student may be exempted from 12 hours of advanced courses based on medical credit. Similarly, one of the two lab rotations may be exempted if a student has previously participated in a

research project. Topics for the preliminary exam shall be specified by the supervisory committee. Students must accumulate a minimum of 100 quarter hours in the biomedical sciences. All other requirements for the Ph.D. in biomedical sciences are the same as listed previously.

Faculty

The program is a cooperative effort between the College of Science and Mathematics and the School of Medicine.

The program faculty at Wright State reside in a number of departments including biochemistry and molecular biology; biological sciences; chemistry; community medicine; computer science and engineering; biomedical, industrial, and human factors engineering; family medicine; mathematics and statistics; medicine; neuroscience, cell biology, and physiology; pathology; pediatrics; pharmacology and toxicology; psychiatry; psychology; and surgery. In addition, the 70 plus faculty members who participate in the program include scientists from affiliated institutions including the Tri-Service Toxicology Laboratory at Wright-Patterson Air Force Base, the Kettering/Scott Magnetic Resonance Laboratory, and the Veterans Affairs Medical Center in Dayton.

Financial Assistance

Predoctoral assistantships are available to students on a competitive basis. Students awarded assistantship support are eligible for stipends and remission of tuition fees. There are no special forms to submit for financial assistance. Students interested in financial support should indicate their interest in the personal statement of the application. MD/PhD student are awarded tuition remision during both the MD and PhD portions of their studies and a monthly stipend during their PhD studies.

Program Description

Areas of Concentration

Faculty research interests represent a broad spectrum of the biomedical sciences and are concentrated in the areas of specialization described in subsequent sections. Within each area of concentration, and across areas, there are extensive interactions and collaborations that enhance the interdisciplinary approaches and training opportunities available to students in the advanced curriculum and dissertation phases of the program. In the advanced curriculum, course requirements will be tailored to fit the needs of individual students according to their area of interest. Through this series of lecture, laboratory, seminar, and independent study experiences, students will be trained to draw on a multidisciplinary background to attack current problems in the biomedical sciences.

Some of the most important aspects of biomedical research today concern the elucidation of the regulatory mechanisms of cellular and molecular processes and the genetic factors that determine the structural and functional differences between cells. These important areas are central to the teaching and research activities of faculty and students.

Neuroscience and Physiology

This Area of Concentration comprises two areas of research strengths that are grouped to take advantage of an innovative synergy. Research and training in neurobiology is intensifying at Wright State University, just as it is in the international scientific community. Laboratories are actively investigating wide-ranging topics in cellular (e.g., synaptic and circuit formation and function) and behavioral neurobiology (e.g., stress endocrinology), using cutting-edge technology from molecular biology, imaging, and electrophysiology.

Studies have important relevance to advances in neurodegeneration, activity dependence of synapses, plasticity and development of spinal cord, etc. The scientific environment for neurobiology on campus is further strengthened by the Comprehensive Neuroscience Center (CNC), which organizes research and training resources and sponsors scholarly events. Physiology is synonymous with function, and at Wright State University, there is formidable strength in studying function in a wide variety of cell types, including blood cells, muscle cells, and epithelial cells. A common theme in these studies is a focus on mechanisms in the cell membrane that exchanges ions, nutrients, and water. Sophisticated cell and molecular technologies are applied in studies that have important consequences for understanding illnesses such as Cystic Fibrosis, bowel disease, and myopathy. An immediate synergy occurs between neurobiology and physiology as a result of the fact that ion channels and transporters are fundamental to the function of all cell types, and play a fundamental role in the excitability of neurons.

Molecular Genetics and Cell Biology

Opportunities for research training in the Molecular Genetics and Cell Biology Area of Concentration extend across the molecular, cellular, intercellular, and organismal levels of biology. During the course of study, students in this area can choose to become part of a wide range of laboratory projects, including investigations into the mechanisms of inherited disease, infection and immunity, signal transduction, and evolution. The spectrum of experimental approaches includes in vitro systems, bacterial, fungal, animal, and human cell culture, whole animal models, and population studies.

Students in this area have the chance to experience research first hand, using the most modern tools and techniques in molecular and cell biology from experts in these fields. Among the many techniques applied to these experimental systems are DNA cloning and sequencing, genetic manipulation of bacterial, insect, and animal cells and their viruses, protein mutagenesis and expression, high resolution light and fluorescence microscopy, flow cytometry, mass spectroscopy, bioinformatics, and proteomics.

Whether it is in the characterization of a novel signaling protein controlling tumorigenesis, or the discovery of new pathways regulating apoptotic cell death, the hallmark of the BMS Program study is an emphasis on interpersonal learning, exemplified by close student-faculty interactions and peer exchange. Laboratory studies are supplemented by informal and formal seminars, journal clubs, laboratory meetings, travel to national meetings and student-mentor discussions. Students with a degree concentration in Molecular Genetics and Cell Biology are equipped for careers in academia, clinical research and testing, or industry in areas including molecular biology, cell biology, immunology, pharmacology, and ecology.

Structural and Quantitative Biology

Concentration in Structural and Quantitative Biology represents the best of traditional research training in areas such as biochemistry, biophysics, molecular biology, computer science, engineering, and physiology, interfaced with the emerging disciplines at the forefront of the biomedical sciences, such as computational and theoretical biology, cellular dynamics and engineering, structural biology, and biomedical imaging. Departments as diverse as chemistry, anatomy, physiology and neuroscience, biochemistry and molecular biology, pharmacology and toxicology, computer science, and biomedical engineering are represented in this area of concentration, but the members of this area share the common interest of understanding their research interest in first, a quantitative manner and, second, at the structural level. Students in this area can be exposed to such state-of the art research environments as high field magnetic resonance and metabolomics, intracellular and extracellular cell signaling pathways and their relationships to cellular function, computer modeling of macromolecular structure and metabolic pathways within cells, designing and constructing of biomimetic sensoring systems, three-dimensional imaging of organs and tissues using x-rays, ultrasound and computation tomography, and computer analysis of large genomic and medical databases for disease prediction or proteomic

profiling. Research laboratories in this concentration feature small groups and close faculty-student mentoring in diverse environments which include the traditional university setting, free-standing research institutes, and hospital-based clinical settings. Students who choose Structural and Quantitative Biology as an area of concentration will gain credentials and the competitiveness for future employment in industry, academia, or medical centers.

Integrative Biology and Toxicology
A degree in Biomedical Sciences with a concentration in Integrative Biology and Toxicology would provide an individual with scientific skills that are related to understanding and investigating integrated biological systems. This Area of Concentration prepares individuals for research careers in medical, academic, and industrial environments. The uniqueness of this concentration is its emphasis on the mammalian organism as a whole or one specific organ system as an integrated part of the whole organism. The cardiovascular system, with its endocrine and neural control, is an exciting and fruitful area for the understanding of human disease and treatment. Population-based epidemiology studies dramatically increase our understanding of human growth, development, and body composition. Studies of defense against biological and chemical threats, as well as chemical toxicology, prepare individuals for relevant and significant contributions in Integrative Biology and Toxicology is the ticket for entry into a fulfilling and lifelong scientific career.

MD/PhD Dual Degree
Do you have an interest in clinical and research aspects of medical sciences? If so, consider the MD/PhD dual degree program. During the first two years of this program, students complete the pre-clinical portion of the medical school curriculum and two research rotations. Students then select thesis mentors who are strongly committed to including them on their biomedical research teams. The next three years are focused on cutting-edge research, and the defense of the resulting dissertation. Lastly, the final two clinical years of the medical school curriculum and the boards are completed. With both degrees, students are prepared to enter high-impact careers that span the breadth of the health care system.

Learning with Disability
This concentration is designed to provide a broad and comprehensive education, realistic work experiences, and opportunities for problem-centered research in the area of learning with disability. Technology-based Learning with Disability is an interdisciplinary concentration in four doctoral programs: Biomedical Sciences; Human Factors and Industrial/Organizational Psychology; Engineering; and Computer Science and Engineering.

The strength is the framing of questions about the biology and nature of basic human capabilities and limitations as well as about the potentials of modern technologies in a way that addresses concerns relevant to the design of effective systems for learning and development. The area is designed to encourage students to “test” basic theory from their home disciplines against practical challenges of contributing to a multidisciplinary approach to real world problems. Students’ research experience will be enhanced with dedicated, cross-discipline facilities.

This concentration incorporates three interconnected and interdependent research efforts, namely: understanding the basic biology, nature, and development of human abilities and disabilities; exploring the opportunities afforded by advanced technologies to expand human capabilities through multimodal interfaces and enhanced visualizations; and addressing the practical problems of the design on human-technology systems that broaden and enhance learning experiences.

Course of Study

Course of Study	Total # of Credit hours
Core Courses (Specific to Area of Concentration)	21
Research Ethics	1
Introduction to Research	5
Laboratory Rotations (two minimum)	6-12
BMS Student Seminar (quarterly)	15
Core Seminar	2
Advanced Courses	18
Advanced Seminar (two minimum)	2
Dissertation Research	TBD
Total (minimum requirement)	**150**

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Last updated by the WSU Web Team (mnr).
Please send comments to Denise Thomas-Hoskins.

Graduate Programs

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Business

Introduction

The Raj Soin College of Business is committed to providing quality education that is both broad based and professionally relevant; to creating an environment that fosters faculty development and strengthens the college's links with the external community; and to exceeding the high standards of personal and professional conduct advanced by AACSB International, which accredited the college's M.B.A. program in 1979. As a result of this commitment to teaching, research, service, and outreach, the university's mission extends to the growth and development of the metropolitan Dayton area and Miami Valley, and explores problems that have local, state, regional, national, and international applications.

The Raj Soin College of Business offers degree programs leading to the Master of Business Administration (M.B.A.) degree, the Master of Science (M.S.) degree in Social and Applied Economics, the Master of Science (M.S.) degree in Logistics Management, and the Master of Accountancy (M.Acc.) degree. Each student's program is planned on an individual basis, taking into consideration the student's background, needs, and objectives. This allows any program to be built on the student's undergraduate work in business, the arts, sciences, engineering, or other fields of study.

A chapter of Beta Gamma Sigma, the national scholastic honor society in the field of business and administration, was established by the College of Business and Administration in 1976.

The M.B.A. Degree
The mission of the Wright State M.B.A. degree program is to develop managers and leaders whose understanding and vision encompass the total organization. Graduates will work effectively within and across functional areas and understand the entire organization and its environment. Consistent with this mission, the primary learning objectives of the program are to develop in our students a cross-functional understanding of organizational operations; further develop students' critical and analytical thinking skills; enhance students' communication skills—oral, written, and interpersonal; and develop the ability to work collaboratively.

The M.S. Degree in Social and Applied Economics
For more information about the Master of Science Degree in Social and Applied Economics program, see Economics section.

The M.S. Degree in Logistics Management
This program combines the study of business administration with advanced logistics courses. In an era of shrinking product life cycles, proliferating product lines, shifting distribution chains, and changing technology, mastery of logistics has become an essential ingredient of competitive success. The M.S. program in Logistics Management provides an

excellent background for this purpose. For more information on this program, see M.S. in Logistics Management section.

The M.Acc. Degree
The aim of the Master of Accountancy (M.Acc.) program is to provide students with a broad set of competencies designed to facilitate success in professional accounting careers and to qualify graduates to sit for the uniform CPA examination in the state of Ohio. See M.Acc. degree requirements.

Admission

Admission to the M.B.A. or Master of Accountancy program requires submission of the form “Application for Admission to a Graduate Status” to the School of Graduate Studies. All applicants for admission to a degree program must pay the application fee, submit official transcripts from all colleges/universities attended, submit a current resumé, and direct Educational Testing Service to forward an official score report to Wright State for the Graduate Management Admission Test (GMAT). International applicants must submit an official score report for the Test of English as a Foreign Language (TOEFL) with a score of at least 550/213 or a band of 6.0 on the International English Language Testing System test. Applicants must have an earned baccalaureate degree (or the equivalent) from a regionally accredited institution.

Applicants for the M.Acc. degree program should have an undergraduate degree with a major or concentration in accounting in addition to the above requirements. Those with deficiencies may be required to successfully complete selected preparatory courses. Students without the undergraduate accounting major will be required to take undergraduate preparatory courses before beginning the M.Acc.; all such students should contact the Department of Accountancy before enrolling.

The Raj Soin College of Business admits only those individuals who show high promise for successful completion of the program. Admission to the program is based on a variety of criteria including past academic performance, standardized test score(s), intellectual capacity (including analytical and quantitative skills), preparedness for graduate study, and other factors.

Regular Admission in Business

Applicants who have submitted all materials for admission to the program will be considered by the college’s graduate admission committee for regular admission. An admission index (AI), overall or last half, is computed for each applicant. The AI is computed by multiplying the overall undergraduate GPA by 200 and adding the total GMAT score. The college’s graduate admission committee looks for an AI of 1100 or greater for regular admission. Applicants who have completed any graduate course work must have a minimum graduate GPA of 3.0. International applicants must have a score of at least 550/213 on the TOEFL.

Conditional Admission in Business

Applicants who have been denied admission, but who believe they are qualified for graduate work, may petition for conditional admission status. Applicants seeking such status must petition the School of Graduate Studies and the Raj Soin College of Business. Graduate credit earned while in this status can be applied toward degree requirements. Regular admission status will be granted once all admission requirements are satisfied and the student completes 12 hours of graduate credit with a cumulative GPA of 3.0. A student who does not meet these conditions will be dismissed.

Provisional Admission in Business

Under certain conditions, an applicant may be admitted provisionally (for one quarter) pending receipt of the official credentials. Provisional admission is granted for one quarter to allow the applicant the time necessary for Wright State to receive the official documents. Provisional admission is not a final admission category. Once all official documents are received, the college will make a final decision to admit or not.

If admission requirements are not met during the quarter in which a student was admitted provisionally, registration for future quarters will be denied and the student will lose graduate credit for any graduate courses completed during the quarter.

Provisional Admission in Accountancy

Students without the undergraduate accounting major (or business degree) will be required to complete preparatory courses with a minimum GPA of 3.0 before they can attain regular admission status.

Nondegree or Transient Admission in Business

Applicants who meet all School of Graduate Studies requirements for nondegree admission or transient admission will be admitted into these categories. Students wanting to switch to degree status must reapply to the School of Graduate Studies for such status and may apply only 12 credit hours of Stage II requirements toward the degree.

Degree Requirements

Foundation Course Work
The following outlines the preparatory foundation course requirements for the M.B.A. degree program. Candidates should consult with a graduate advisor in the Raj Soin College of Business for information on the policies and procedures to waive the foundation courses.

All candidates must demonstrate an understanding of accountancy, finance, economics and statistics. Students deficient in any of these areas are required to successfully remedy the deficiency by completing the appropriate foundation course(s). Foundation courses may be waived for individuals who have completed comparable courses at regionally accredited institutions. Waiver of foundation course work is based on the grade received, credit hours, course content, age of course, focus, and other factors. Additionally, students may demonstrate competency by successfully passing a proficiency test.

All foundation courses should be taken before starting 700-level MBA courses unless permission is granted by the director of the MBA Program.

Foundation Courses
MBA 510 (4) Survey of Accounting
MBA 520 (4) Survey of Economics
MBA 530 (4) Survey of Finance
MBA 580 (4) Survey of Quantitative Business Analysis

MBA CORE and Concentrations
After completing (or being waived from) the prerequisite foundation courses, students begin the MBA program with the MBA Core, 36 credit hours of course work that are common to all MBA students. Students should enroll in MBA 750 – Leading Teams and Organizations, as the first core course. Students cannot enroll in the capstone course, MBA 755, until they have completed all core MBA courses and obtain permission from Director of the MBA program. Students also complete a twelve credit-hour concentration chosen from the list shown below.

Students have the flexibility to choose and structure concentration(s) to meet their career objectives. Foundation courses cannot be used as electives within the concentration area(s). Students taking graduate business courses are expected to follow course prerequisite requirements.

MBA CONCENTRATIONS

Economics

Required:
EC 709 Applied Econometrics
EC 715 Applied Microeconomics
EC 717 Applied Macroeconomics

Finance

Required:
FIN 710 Investment Management
FIN 742 Seminar in Financial Management
FIN 790 Seminar in International Financial Management

Flexible Business

12 hours of 700 level courses from RSCOB.

International Business

Choose 3:
FIN 790 Seminar in International Financial Management
MS 700 Global Supply Chain Management
MKT 716 International Marketing
EC 719 International Economics
ACC 757 International Accounting

Management, Innovation and Change

Required:
MGT 706 Organizational Development & Change
Choose 2:
LAW 620 Legal Aspects of Managing a Diverse Workforce
MGT 766 Managing for Creativity & Innovation
MKT 775 Entrepreneurship

Management of Information Technology

Required:
MIS 700 Information Systems Development
Choose 2:
MIS 705 Electronic Commerce
MIS 710 Managing Business Data
MIS 720 Telecommunications Management
MKT 740 E-Commerce

Marketing

Required:
MKT 700 Product & Price Management
MKT 705 Advertising & Sales Promotion
Choose 1:
MKT 775 Entrepreneurship

MKT 740 E-Commerce
MKT 716 International Marketing

Project Management
Required:
MGT 770 Fundamentals of Project Management
MGT 773 Project Management & Control Techniques
Choose 1:
MGT 772 Project Contract Management
EC 740 Cost Benefit Analysis & Social Project Evaluations
MKT 775 Entrepreneurship

Dual Degree with Economics
Students may obtain both the M.B.A. degree and the M.S. degree in Social and Applied Economics under the dual-degree program, which permits common course work to apply to both programs as long as the courses are completed within the time limit set for completion of graduate degree programs. This policy does not apply to students who received a M.B.A. degree or M.S. degree in economics from schools other than Wright State. Contact the director of M.B.A. programs and the director of M.S. in Social and Applied Economics Program for further details.

Dual Degree with Nursing
Students may obtain both the M.B.A. degree and the M.S. degree in administration of nursing and health care systems under the dual-degree program, which permits common course work to apply to both programs. Students who receive a M.B.A. degree or M.S. degree in nursing from schools other than Wright State cannot enter this dual degree program. For further information, contact the director of graduate programs in business and logistics management and director of M.S. in nursing program.

Faculty

Accountancy

Professors
James Greenspan (chair), financial accounting
Susan Lightle, auditing, financial accounting
Hans Dieter Sprohge, managerial and financial accounting
John C. Talbott Jr., taxation and managerial accounting

Associate Professor
David M. Bukovinsky, managerial and governmental accounting

Assistant Professors
Kevin F. Brown, accountancy
John K. Cook, accountancy
Carolyn Hartwell, financial accounting
Paul Lin, accounting systems

Economics

For list of Department of Economics graduate faculty, see Economics

Finance, Insurance, and Real Estate

Professors
Fall M. Ainina (chair), financial management, investments
Peter W. Bacon (emeritus), financial management
Nicolas Gressis, financial management, investments
James E. Larsen, real estate, financial institutions
Robert J. Sweeney, financial management

Associate Professors
Khurshid Ahmad (emeritus), insurance, real estate, personal finance
Marlena Akhbari, financial management
Carol Wang, finance
Richard E. Williams, financial management, investments, estate planning

Assistant Professor
Marlena Akhbari, financial management

Management

Professors
Riad A. Ajami (chair), management
Francis J. (Bud) Baker, project management, leadership, strategic management
Jeanette Davy, organizational behavior, organizational development, human resource strategy, compensation
Charles J. Hartmann (emeritus), legal environment of business, government regulation
Joseph A. Petrick, international management, management ethics, quality management, leadership studies, environmental management
Michael Z. Sincoff, management
William M. Slonaker, legal environment of business, legal aspects of business organizations, legal aspects of commercial transactions, labor law, real estate law
Ann C. Wendt, labor relations, human resource management, public policy

Associate Professors
Todd Dewett, organizational behavior, leadership
Scott Williams, organizational behavior, strategic management

Assistant Professors
David Bright, organizational development and change, positive organizational scholarship, appreciative inquiry, forgiveness in organizations, social issues in management
Melissa Gruys, predicting, defining, and examining employee performance and work behavior, predicting and preventing counterproductive work behavior

Information Systems and Operations Management

Professors
Joseph W. Coleman, statistical analysis, simulation, management information systems
Andrew Lai (interim chair) (emeritus), supply chain management, logistics, management science, management information systems
Michael Cleary (emeritus), management science, information systems
Nadia R. Sanders, forecasting, decision theory, materials management, expert systems
Vikram Sethi (chair), cultural and organizational issues of information systems, organizational transformation. transnational information systems, process refinement
Vincent Yen, operations research, statistics, management information systems, systems development, decision support systems

Associate Professors
George G. Polak, network optimization, supply chain modeling, discrete and combinatorial

optimization
Larry B. Weinstein, integration of production and maintenance planning, TQM in manufacturing, ISO/QSS 9000 certification

Assistant Professors
Jung Choi, software metrics, IS development methodologies and software productivity and quality
Barbara B. Denison, small business applications, systems analysis and design
Kevin P. Duffy, information systems, operations management

Anand Jeyaraj, information systems with overlaps in organizational behavior, influence tactics, and social networks; adoption, diffusion, and assimilation of information systems
Shu Schiller, virtual teams and communities, online customer services and communication, instant messaging, Web-enhanced teaching and learning, information systems theories, qualitative information systems research
Arijit Sengupta, information systems, operations management
Hong Wang, AI search techniques and optimization, decision support systems and models, telecommunications, behavioral and strategic MIS/DSS
Frederick R. Watson (emeritus), linear and integer programming, network modeling and optimization

Adjunct Assistant Professor
Martin H. Davis, Jr., management science and information systems, Director, Logistics and Supply Chain Management Master of Science (M.S.) Program and Master of Information Systems (M.I.S.) Program

Marketing

Professors
Herb Brown (emeritus), marketing
Peter Carusone (emeritus), marketing
Pola Gupta, consumer behavior, marketing strategy, marketing research, Internet marketing
Robert Kegerreis (president emeritus; professor emeritus), marketing
Inder P. Khera, marketing strategy, consumer behavior, international marketing, marketing of services
James M. Munch (chair), marketing
Rosemary P. Ramsey, marketing
Paula M. Saunders (emeritus), marketing strategy, service marketing, direct marketing

Associate Professors
Charles S. Gulas, advertising, consumer behavior, marketing management, entrepreneurship
Robert A. Ping Jr., marketing management, marketing research

Assistant Professors
Wakiuru Wamwara-Mbugua, marketing management, consumer behavior

Course of Study

MBA Program

MBA 710 Strategic Cost Management	4
MBA 720 Analysis of Global Economic Conditions	4
MBA 730 Financial Analysis and Decision Making	4
MBA 740 Legal and Ethical Decision Making	4

MBA 750 Leading Teams and Organizations	4
MBA 760 Marketing Strategy	4
MBA 770 Information Technology and Business Transformation	4
MBA 780 Supply Chain Management	4
MBA 755 Developing and Implementing Competitive Strategies	4
(Prerequisite: All core MBA courses)	
CONCENTRATION (Three courses)	12
TOTAL MINIMUM CREDIT HOURS REQUIRED	**48**

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Graduate Programs

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Chemistry

Introduction

The Department of Chemistry offers a graduate program leading to the Master of Science degree in chemistry. Balanced programs of course work and research are individually designed to prepare students for careers as professional chemists or for advanced degree study. Joint programs with other departments are encouraged for students interested in pursuing interdisciplinary research with emphasis in chemistry.

The department also supports the Interdisciplinary Science and Mathematics Master of Science in Teaching (M.S.T.) program offered by the College of Science and Mathematics.

Admission

In order to meet the minimum requirements for admission to the graduate program in chemistry, applicants must fulfill the requirements for admission established by the School of Graduate Studies. In addition, applicants must have completed basic calculus, one year of physics, and approximately 50 quarter hours (33 semester hours) of chemistry, including lecture and laboratory courses in general chemistry, quantitative analysis, and introductory courses in organic, inorganic, and physical chemistry. Students who do not meet these requirements will be asked to do some remedial work in addition to fulfilling the usual graduate degree requirements.

Degree Requirements

In order to qualify for the Master of Science degree, candidates must fulfill the requirements of the School of Graduate Studies, complete 30 credit hours of course work and a minimum of 15 credit hours of thesis research, submit an acceptable thesis, and pass a written or an oral examination. Students will normally concentrate in one of the following areas: analytical, environmental, inorganic, organic, physical or polymer chemistry, or chemical education.

Courses
Candidates for the Master of Science degree must complete 30 credit hours of course work in chemistry and related fields, including designated chemistry core courses (as outlined below). The chemistry courses must be numbered 600 or above and comprise a program acceptable to the advisory committee. The related courses must be numbered 500 or above and be acceptable to the advisory committee. In addition to courses in the traditional areas of analytical, inorganic, organic, and physical chemistry, courses are also offered in applied areas such as environmental, medicinal, and polymer chemistry.

Core Course Requirements
Five core areas have been designated from which each M.S. chemistry candidate must

take at least one course. Acceptable core courses are listed below. No substitution will be allowed.
Physical Chemistry
CHM 750, 751, 752
Inorganic Chemistry
CHM 720, 721, 722
Organic Chemistry
CHM 744, 746, 748
Analytical Chemistry
CHM 637, 762, 763
Applied Chemistry which includes:
Environmental Chemistry: CHM 610, 611, 612
Polymer Chemistry: CHM 661
Medicinal Chemistry: CHM 640, 641
Toxicological Chemistry: CHM 643, 644

Language Requirement

A reading knowledge of a foreign language is not required for the Master of Science degree in chemistry. However, certain students, because of the nature of their specific area of interest in chemistry, may be required to demonstrate an ability to read chemical literature in a foreign language.

Residency Requirement

Full-time residency is not required to qualify for the Master of Science degree. However, students must be registered for three consecutive quarters of full- or part-time study.

Thesis

The candidate must enroll in CHM 899 (thesis research) under the supervision of an advisor approved by the chemistry graduate studies committee. An acceptable thesis based on a minimum of 15 credit hours of laboratory or theoretical research (CHM 899) must be submitted to the thesis advisory committee (chaired by the candidate's advisor and selected by the advisor, student, and the department chair). After the presentation of the thesis and at least two weeks prior to the date proposed for conferring the degree, the candidate must pass a written or an oral examination. If the student's record is satisfactory, the scope of the examination will generally be confined to the candidate's field of specialization.

Four copies of the final draft of the thesis must be submitted to the thesis advisory committee and the department chair for approval prior to binding. After approval by the School of Graduate Studies, one copy will be deposited in the library. One copy each is kept by the advisor, the graduate, and the department chair.

Environmental Sciences

The environmental sciences concentration was developed by the College of Science and Mathematics to promote interdisciplinary research. Accordingly, for a student with a strong interest in chemistry and in the environment, a Master of Science degree in chemistry with a concentration in environmental sciences has been designed. This program entails approximately two more courses than the regular chemistry major, but provides much greater breadth and depth in environmental sciences than the traditional chemistry major would obtain.

The advisory committee of the student selecting this option will differ from the usual committee in that at least one individual will be a faculty member from outside the

chemistry department, e.g., a member of the biology or geology faculty. In addition to meeting the general requirements for the Master of Science degree in chemistry, including the preparation and defense of a research-based thesis, course requirements for the environmental track include:

• geologic and environmental applications of geographic information systems or hydrogeology or hydrogeochemistry;
• environmental statistics;
• risk assessment;
• environmental sciences seminar (1 hour); and
• two environmental sciences electives outside the chemistry department.

A student completing these requirements will receive an M.S. degree in chemistry with an emphasis in environmental science.

Environmental Sciences Ph.D. Program

In addition, students in chemistry can pursue an interdisciplinary Ph.D. in Environmental Sciences. See the separate listing for that program.

Faculty

Professors
Rubin Battino (Emeritus), physical chemistry
Sue C. Cummings (Emerita), inorganic and bioinorganic chemistry
William A. Feld, organic and polymer chemistry
John J. Fortman (Emeritus), inorganic chemistry and chemical education
Roger K. Gilpin (Mead Professor of Environmental Sciences), analytical and environmental chemistry
Ivan J. Goldfarb (Emeritus), polymer chemistry
Vladimir Katovic, analytical, inorganic, and environmental chemistry
Daniel M. Ketcha, organic and natural products chemistry
M. Paul Servé (Emeritus), organic and medicinal chemistry
Paul G. Seybold, physical and biophysical chemistry
Thomas O. Tiernan (Emeritus), physical, analytical, and environmental chemistry
Kenneth Turnbull (chair), organic chemistry

Associate Professors
Daniel D. Bombick, analytical chemistry and mass spectrometry
David A. Dolson, physical chemistry and laser spectroscopy
Eric A. Fossum, organic and polymer chemistry
David A. Grossie, inorganic chemistry and X-ray crystallography
George G. Hess (Emeritus), organic, analytical, and environmental chemistry
Steven Higgins, solid-liquid interface dynamics and chemistry
Suzanne Lunsford, chemical education
Audrey E. McGowin, analytical and environmental chemistry

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Graduate Programs

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Computer Engineering

Introduction

The Department of Computer Science and Engineering offers a program of graduate study leading to the Master of Science in Computer Engineering degree. The program balances theory, software, hardware, and practice with degree requirements concentrated in the areas of computer design and analysis. Most courses are offered in the late afternoon to allow practicing computer professionals to begin the program on a part-time basis.

The department also offers the Master of Science in Computer Science degree and the Ph.D. in Computer Science and Engineering, as well as graduate certificates in Database Management and Design, Software Engineering, and Software Management.

Admission

A student may be admitted to the Master of Science in Computer Engineering program with the equivalent of an ABET accredited bachelor's degree in computer engineering and satisfaction of the admission requirements as set forth by the School of Graduate Studies.

Specific prerequisites for admission to the Master of Science degree program in computer engineering are shown below. Students may be admitted conditionally while making up minor deficiencies.

1. An accredited bachelor's degree with an overall minimum grade point average of 3.0 for regular graduate status. Students may be admitted conditionally if they have an undergraduate grade point average of 2.7 or above and at least a 3.0 grade point average in all courses in items 2 and 3 below.

2. Computer Science and Engineering prerequisites: Data structures, operating systems, and computer organization. The materials covered in these classes are equivalent to CS 400, CS 433, and CEG 320.

3. Mathematics and Science Prerequisites: One year sequence in calculus, matrix or linear algebra, ordinary differential equations, a one year sequence in calculus based physics, and probability and statistics.

4. The Graduate Record Examination (GRE-the general test): a minimum combined score of 1050 on the verbal and quantitative exams is expected.

NOTE: The GRE will be waived for students applying for the Master's program in the following cases: a) a person with a Wright State University BS or BA degree from the College of Engineering and Computer Science whose undergraduate GPA is above 3.3, b) a person with a graduate degree in Engineering, Science, or Mathematics from an

American institution. The GRE is highly recommended for anyone who is or will be applying for graduate assistantships.

Degree Requirements

The program requires forty eight graduate credit hours in Computer Science or Computer Engineering that include the Computer Engineering Core and the completion of either the thesis or non-thesis option requirements.

COMPUTER ENGINEERING CORE
Distributed Computing: CEG 730
Computer Architecture: CEG 720
Computer Networks: CEG 702
Computer Engineering Mathematics: CEG 770

THESIS OPTION
Completion of forty-eight graduate credit hours in an approved program of study, including twenty hours of formal coursework at the 700-800 level (CEG 795, Independent Study, cannot be used to meet this requirement). Satisfactory completion of a Masters thesis is required in this option with a maximum of twelve hours of independent study and thesis work counted towards the degree.

NON-THESIS OPTION
Completion of forty-eight graduate credit hours in an approved program of study. The forty eight hours must include the core and at least sixteen additional hours of CS/CEG formal coursework at the 700/800 level. A maximum of 4 hours of independent study may be counted toward the degree.

Courses: All CS and CEG graduate courses listed in the catalog (with the exception of CS 600, and CEG 633) and EE 701, EE 710, EE 761, EE 649 may be used to complete the credit hour requirements. Other courses may be used to satisfy the requirements only if they are listed in a program of study that has been approved by the department prior to enrollment in the course.

The Department of Computer Science and Engineering maintains a “three C policy” for graduate students. A graduate student who receives 9 or more credit hours of grades C, D, F, X, or U in computer science or computer engineering graduate courses will be recommended to the Graduate School for dismissal at any time the student’s CS/CEG graduate GPA (including the repeated courses) falls below 3.0. Dismissal action will be taken by the School of Graduate Studies. The rule includes prerequisite courses taken for graduate credit (500/600 level), independent study, and thesis research. Note that repeating a course replaces the grade in the calculation of the GPA but does not remove it from consideration of this rule.

A maximum of 12 graduate credit hours may be transferred after admission to the computer engineering degree program by petitioning the Graduate Study Committee.

Students who have been employed as teaching or research assistants through the School of Graduate Studies are required to complete the thesis option.

Facilities

A wide range of computing systems interconnected via the campus-wide network support all the degree programs in the department. A variety of high-end and special-purpose systems are available for research through the Ohio Supercomputer Center. University and college systems include a variety of servers and workstations running current operating systems including Linux, Mac OS, and Windows. Department facilities provide specialized

systems and support equipment tailored to specific curriculum and research areas. These include a Linux-based Operating Systems and Internet Security lab, an Immersive Visualization and Animation Theater lab, and a variety of workstations and personal computers providing software tools for project design and development. The program also has access to one of the most advanced visualization and presentation environments in the nation, the Appenzeller AudioVisualization Lab, located in the Joshi Research Center. The Department has laboratories dedicated research in assistive technologies, RFID, vision interfaces and systems, medical image analysis, parallel and distributed computing, evolvable hardware, database systems, data mining, mobile information and communications, software engineering, artificial intelligence, adaptive vision, advanced computer networking, semantic web services oriented computing, scientific workflows, business process management, and bioinformatics.

Faculty

Professors

Nikolaos G. Bourbakis, (Director, Assistive Technologies Research Center), information security (encryption, information hiding, compression, forensics), computer systems (distributed, formal languages, processors, modeling), applied artificial intelligence (knowledge representation, planning, learning, autonomous agents, natural language processing), machine vision and image processing (architectures, languages, algorithms), Robotics (navigation, grasping, 3-D space maps, walking), assistive technology (blind, deaf, paraplegic), biomedical (bioimaging, cells modeling, neuromorphic systems, brain surgery, brain biometrics, endoscopy, human-eye)

Chien-In Henry Chen (Department of Electrical Engineering), computer aided design, verification and testing of VLSI circuits and systems, specifically in digital analog, mixed-signal designs, and system-on-a-chip (SoC), VLSI and FPGA implementation of signal processing and communication systems like GPS and digital wideband receivers

Soon M. Chung, database, data mining, Grid computing, parallel processing, XML, multimedia, computer architecture

Guozhu Dong, database systems, data mining and knowledge discovery, data warehousing and integration, data cubes and OLAP, bioinformatics, knowledge management, information and internet security

Arthur A. Goshtasby, computer vision, computer graphics, geometric modeling, medical image analysis

Jack Jean, high-performance computer architectures, RFID applications

Kuldip S. Rattan (Department of Electrical Engineering), fuzzy control, robotics, digital control systems, prosthetic/orthotics and microprocessor applications

Mateen M. Rizki, evolutionary computation, pattern recognition, image processing, machine intelligence

Amit P. Sheth, semantic web; information integration & analysis; services science; workflow management; data & knowledge intensive applications in biomedical, health care, and national security domain

Thomas A. Sudkamp (Chair), fuzzy set theory, soft computing, approximate reasoning

Krishnaprasad Thirunarayan, semantic web: knowledge representation and reasoning, programming languages: specification, design and implementation

Bin Wang, communication networks, wireless sensor and mobile networks, UWB, dynamic spectrum access, cognitive radio, information theory, network coding, algorithm design, quality of service, dense wavelength division multiplexing (DWDM) optical networks, network security, network modeling, analysis, simulation, protocol design and development

Associate Professors

Travis E. Doom, bioinformatics, digital design automation, computer architecture and operating systems, optimization theory, and engineering education

John M. Emmert (Department of Electrical Engineering), physical VLSI design in nanoscale technologies, physical design automation for VLSI, mixed-signal design, built-in self-test, and fault tolerance for VLSI systems

John C. Gallagher, Adaptive and Evolvable Hardware, Autonomous Robotics, neural networks, machine intelligence, computational neuroscience
Prabhaker Mateti, distributed computing, Internet security, formal methods in software design
Yong Pei, distributed computing, multimedia system and networking, sensor network, information theory, bio-networks, distributed signal processing
Michael L. Raymer, evolutionary computation, pattern recognition, bioinformatics, protein structure modeling, molecular evolution, forensic bioinformatics, computational toxicology

Assistant Professors
Keke Chen, secure and privacy-preserving computing, databases, data mining and information visualization, web science, and social computing
Pascal Hitzler, semantic web, knowledge representation, automated reasoning, mathematical founddatins
Meilin Liu, embedded systems, compiler, loop transformation techniques, computer architecture, information security
Shaojun Wang, machine learning, natural language processing, information theory
Thomas Wischgoll, scientific visualizations, biomedical imaging, flow visualization, information visualization, computer graphics, image processing and feature extraction

Graduate Assistantship

Teaching assistantships are available on a competitive basis for students who have established strong academic credentials and can demonstrate good communication and teaching skills. Departmental Graduate Research Assistantships are also available and are associated with research projects of the faculty. They are normally awarded by or based on the recommendation of individual faculty. Application forms for these assistantships are available from the Department and on web at http://www.cs.wright.edu/cse/. To be considered for an assistantship, a student must be admitted to a graduate program or have an application on file with the Graduate School. Assistantships are also available from the Dayton Area Graduate Studies Institute (DAGSI). Applications are available from DAGSI at http://www.dagsi.org.

Research

A steadily increasing number of funded research projects support modern graduate research in such areas as medical imaging, multimedia systems and applications, biometrics, assistive technologies, soft computing and evolvable hardware, intelligent agents and robotics, data mining and databases, bioinformatics, networking and mobile computing, wireless and internet security, RFID applications, the semantic web, and services science.

Recent and current sources of research support include federal agencies, military agencies, and local industries. Research at Wright State University is not limited to on-campus laboratory facilities. Several industrial laboratories, Wright-Patterson Air Force Base laboratories, and the Major Shared Resource Center at Wright-Patterson Air Force Base are involved in joint research efforts with the university. In addition, the new Joshi Research Center and daytaOhio are focal points for new technologies that advance data management solutions and data management innovation.

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Computer Science

Introduction

The Department of Computer Science and Engineering offers a program of graduate study leading to the Master of Science degree in Computer Science.

The program balances theory, software, hardware, and practice with degree requirements concentrated in the areas of theory and software. Most courses are offered in the late afternoon to allow practicing computer professionals to begin the program on a part-time basis.

The Department also offers the Master of Science in Computer Engineering degree and the Ph.D. in Computer Science and Engineering, as well as graduate certificates in Database Management and Design, Software Engineering, and Software Management.

Admission

A student may be admitted to the Master of Science in Computer Science program with a bachelor's degree in computer science, or related areas and appropriate experience, and satisfaction of the admission requirements as set forth by the School of Graduate Studies.

Specific prerequisites for admission are shown below. Students may be admitted conditionally while making up minor deficiencies.

1. An accredited bachelor's degree with an overall minimum grade point average of 3.0 for regular graduate status. Students may be admitted conditionally if they have an undergraduate grade point average of 2.7 or above and at least a 3.0 grade point average in all courses in items 2 and 3 below.

2. Computer Science prerequisites: Data structures, operating systems, and computer organization. The materials covered in these classes are equivalent to CS 400, CS 433, and CEG 320.

3. Mathematics and Science Prerequisites: Introduction to calculus, one year of science, linear or matrix algebra, discrete mathematics, probability and statistics.

4. The Graduate Record Examination (GRE-the general test): a minimum combined score of 1050 on the verbal and quantitative exams is expected.

The GRE will be waived in the following cases: a) a person with a Wright State University BS or BA degree from the College of Computer Science and Engineering and Computer Science whose undergraduate GPA is above 3.3 and who is applying for a M.S. program and b) a person with a graduate degree in Engineering, Science, or Mathematics from an

American institution who is applying for a M.S. program. The GRE is highly recommended for anyone who is or will be applying for graduate assistantships.

Degree Requirements

The program requires forty eight graduate credit hours in Computer Science or Computer Engineering that include the Computer Science Core and the completion of either the thesis or non-thesis option requirements.

COMPUTER SCIENCE CORE
Distributed Computing: CEG 730
Programming Languages: CS 784
Computational Complexity: CS 740
Database Systems: CS 701

THESIS OPTION
Completion of forty-eight graduate credit hours in an approved program of study, including twenty hours of formal coursework at the 700-800 level (CS 795, Independent Study, cannot be used to meet this requirement). Satisfactory completion of a Masters thesis is required in this option with a maximum of twelve hours of independent study and thesis work counted towards the degree.

NON-THESIS OPTION
Completion of forty-eight graduate credit hours in an approved program of study. The forty eight hours must include the core and at least sixteen additional hours of CS/CEG formal courses at the 700/800 level. A maximum of 4 hours of independent study may be counted toward the degree.

Courses: All CS and CEG graduate courses listed in the catalog, (with the exception of CS 600, and CEG 633), may be used to complete the credit hour requirements. Other courses may be used to satisfy the requirements only if they are listed in a program of study that has been approved by the department prior to enrollment in the course.

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John C. Gallagher, Adaptive and Evolvable Hardware, Autonomous Robotics, neural networks, machine intelligence, computational neuroscience
Prabhaker Mateti, distributed computing, Internet security, formal methods in software design

Yong Pei, distributed computing, multimedia system and networking, sensor network, information theory, bio-networks, distributed signal processing
Michael L. Raymer, evolutionary computation, pattern recognition, bioinformatics, protein structure modeling, molecular evolution, forensic bioinformatics, computational toxicology
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Pascal Hitzler, semantic web, knowledge representation, automated reasoning, mathematical founddatins
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Computer Science and Engineering Ph.D. Program

Introduction

The Department of Computer Science and Engineering offers a program of graduate study leading to the Doctor of Philosophy degree in computer science and engineering. The Ph.D. degree is awarded for demonstrated, scholarly excellence in study and research that provides a significant contribution to the fields of computer science or computer engineering. The program requires a concentration of study and research in specific areas of computer science and engineering. Programmatic strength lies in the unique blend of faculty expertise, in the combination of theory with software and hardware design, and in the laboratory facilities available to the program. Most courses are offered in the late afternoon to allow practicing computer professionals to begin the program on a part-time basis.

The department also offers Master of Science in Computer Science and Master of Science in Computer Engineering degrees, as well as graduate certificates in Database Management and Design, Software Engineering, and Software Management.

Admission

Students may be admitted to the Ph.D. program in Computer Science and Engineering with a baccalaureate degree or a master’s degree in computer science, computer engineering, or a related area and appropriate experience; satisfaction of the admission requirements as set forth by the School of Graduate Studies; and a record that indicates potential for a career in computer science and engineering research, as evaluated by the department’s admission committee. It may be possible to make up minor background deficiencies after admission to the program by taking appropriate courses.

Minimum expectations are a baccalaureate or master's degree from an accredited institution in computer science, computer engineering, or related discipline with a grade point average of at least 3.3 and a score on the Graduate Record Examination (GRE) of at least 1150. The Graduate Record Examination is not required of students with a master's degree from the Wright State University College of Engineering and Computer Science, provided that a grade point average of 3.6 or better was achieved.

Degree Requirements

Credit Requirements:
A student entering the program with a Bachelor of Science or Bachelor of Arts degree must complete a minimum of 136 credit hours.

A student entering the program with a Masters degree in Computer Science, Computer Engineering, or a related field from a regionally accredited university must complete a

minimum of 91 credit hours.

The following course requirements must be satisfied in completing the necessary number of credit hours.

Course Requirements:
A student must complete a minimum of 76 hours of course work at the graduate level. CS 600 and CEG 633 will not be counted toward meeting this requirement.

The 76 credit hours in courses must include:

•Completion of either the Computer Science or Computer Engineering core courses.

•At least 40 hours of formal computer science and computer engineering courses available to graduate students only (CS/CEG 700/800 level). A course other than those listed may be used to satisfy the graduate only course requirement only if it is part of a coherent program and has received approval from the Graduate Studies Committee prior to enrollment in the course.

•At least 24 hours of graduate level CSE technical electives including at least 8 hours of formal course work. Up to 12 hours of thesis research (CS 799 or CEG 799) taken at Wright State in the successful completion of a Masters thesis may be included in these hours.

•At least 12 credit hours of graduate courses outside of the CSE Department e.g. mathematics or statistics, electrical engineering, psychology, biology, etc. that provide a coherent second area of specialization that complements the student's research area.

Courses that are co-listed as CS or CEG cannot be used toward this requirement (Except MTH 607, MTH 619, MTH 656, MTH 658, EE 619, EE 654, EE 656,EE 659, EE 662, and HFE 665).

Formal Courses:

For the purposes of the course requirements given above, a formal course is defined as follows:

A formal course meets on a regularly scheduled basis throughout the quarter as specified in the quarterly university bulletin. In a formal course, a faculty member delivers a series of lectures and students are evaluated using a combination of projects, presentations, and examinations. Consequently, this excludes seminars, independent study, thesis research, dissertation research, principles of instruction, or other directed research hours. However, the 24 hours of graduate level CSE technical electives allows for 16 hours of independent study type courses but not thesis or dissertation research.

1. Graduate Core Curriculum

The core curriculum is designed to ensure that students completing a graduate degree have demonstrated competence at the graduate level in a breadth of core topics in the discipline.

CS core curriculum:

Areas: Associated Course Distributed Computing CEG 730
Database Systems CS 701
Programming Languages CS 784
Computational Complexity CS 740

CEG core curriculum

Areas: Associated Course
Distributed Computing CEG 730
Computer Networks CEG 702
Computer Architecture CEG 720
Computer Engineering Mathematics CEG 770

2. Additional Requirements:
A student's program of study must include:
Registration for the Candidacy Examination (CS 894 or CEG 894)
Registration for the Dissertation Defense (CS 896 or CEG 896)
Registration for the 36 hours of Residency Research (CS 897 or CEG 897)

3. Qualifying Examination:

The successful completion of the Qualifying Examination demonstrates that the student has attained a breadth of knowledge in computer science or computer engineering at the graduate level. The examination may be passed either by outstanding performance on the core courses or through a series of written examinations.

Within the first two quarters of entering the Ph.D. program and prior to taking any of the core courses, the student must indicate whether he/she will take the Qualifying Examination by the core curriculum or by a written examination. Students selecting to qualify for the Ph.D. program by the core curriculum must declare whether they will complete the Computer Science or the Computer Engineering core.

Examination by Core Curriculum
A student wanting to satisfy the Qualifying Examination requirement by completing the core curriculum must register for CS/CEG 892 (Qualifying Examination) the quarter that the last core course is taken. The student will pass the qualifying examination and be given a grade of P in CS/CEG 892 if she/he received either 4 As, or 3 As and a B in the core courses. Otherwise, the student will be given a grade of M.

A student who receives a grade of M in CS/CEG 892 may retake the final examination in any of the core courses at the next offering of the course. The effective grade of a core course for the purpose of calculating the Qualifying Examination grade point average (QEGPA) will be the higher of the original course grade and the subsequent examination grade. If at any time the student’s QEGPA in core courses reaches 3.75, the M grade in CS/CEG 892 will be changed to P. Alternatively, the M grade will be changed to P if the student’s QEGPA in core courses reaches 3.5 and either:

1. the student's GPA in her/his approved program of study exceeds 3.75, or
2. the student's GPA in her/his approved program of study falls between 3.5 and 3.75 and the student demonstrates progress in her/his research by having a paper accepted in a journal or a competitive conference in computer science or computer engineering.

A student who receives a grade of P in CS/CEG 892 within two years in the program will be declared to have passed the Qualifying Examination. Otherwise, the student will be declared to have failed the Qualifying Examination and will be recommended for dismissal from the Doctoral program.

Written Examination
The written examination will cover the areas from the core curriculum courses. If this option is chosen, the student must take the examination within 4 quarters of entering the program. The examination will consist of a two-hour examination on each of the topics. A grade point

average of at least 3.75 on the examinations is required to pass.

Second Written Examination
Students not passing the written examination on the first attempt will be given one additional opportunity to pass at the next available offering of the written examination. The student is required to take the examination in each area in which he/she did not receive an A on the first examination. The grades obtained on the second examination will replace those from the first examination. A grade point average of at least 3.75 on the two combined examinations is required to pass. Any student who fails to pass the examination on the second attempt will be dismissed from the Doctoral program.

WSU Masters Students
Students entering the Ph.D. program with a Masters in Computer Science or Computer Engineering from Wright State will be credited with passing the Qualifying Examination if their performance on the core courses in the Masters program satisfies the criteria for passing the Qualifying Examination by coursework described above.

Students must register for CS 892 or CEG 892 to take the written examination. Students will be notified of the results within two weeks of the final session of the examination.

4. Residency Research:

A student must enroll in three quarters over two consecutive years of Residency Research (CS/CEG 897. A student will generally enroll in residency research after completing the Ph.D. Qualifying Examination. Enrollment in residency research prior to completion of the Qualifying Examination will be permitted only by the petition to the Graduate Studies Committee.

5. Candidacy Examination:

The Candidacy Examination permits the student to present his/her proposed research to the dissertation committee and the public. The dissertation committee may be formed only after completion of the Qualifying Examination, but prior to the Candidacy Examination. It is the responsibility of the student to find a faculty member who agrees to be the dissertation director and who will supervise the student's research. The dissertation director, in consultation with the dissertation committee, will determine when the student has identified a program of research suitable for a Ph.D. dissertation and is prepared to take the Candidacy Examination. The examination will consist of a public presentation of the proposed research and a question-and-answer period. The dissertation committee may also have an interrogatory session with the student that is closed to the public. Unanimous consent of the dissertation committee is required to pass the Candidacy Examination.

The research proposal must exhibit the student's thorough background knowledge of the research area, indicate previous work in the area, and explicitly outline the proposed research to be undertaken in the dissertation.

6. Dissertation Defense:

In the Dissertation Defense, the student presents the results of his/her research to the dissertation committee and the public. The dissertation director, in consultation with the dissertation committee, will determine when the student has completed sufficient research to defend the dissertation.

The dissertation director is the chair of the Dissertation Defense. The examination consists of a public presentation of the student's research and a question-and-answer period. The dissertation committee may also have an interrogatory session with the student that is closed to the public. Unanimous consent of the dissertation committee is required to pass

the Dissertation Defense.

7. Publication Requirement:

The student must have at least one journal paper of which he/she is the first author accepted for publication from his/her dissertation research. The dissertation committee will specify peer reviewed journals appropriate for the satisfaction of this requirement.

A paper published in a highly selective conference may satisfy this requirement with the agreement of the dissertation committee and the Director of the Ph.D. Program.

8. Time Limit:

Students must complete all the requirements for a doctoral degree within 10 years from the date that student was admitted to the Ph.D. program.

The department has a “three C rule” for graduate students. A graduate student who receives 9 or more credit hours of grades C, D, F, X, or U in computer science or computer engineering graduate courses will be recommended to the Graduate School for dismissal at any time the student’s CS/CEG graduate GPA (including the repeated courses) falls below 3.0. Dismissal action will be taken by the School of Graduate Studies. The rule includes prerequisite courses taken for graduate credit (500/600 level), independent study, and thesis research. Note that repeating a course replaces the grade in the calculation of the GPA but does not remove it from consideration of this rule.

Facilities

A wide range of computing systems interconnected via the campus-wide network support all the degree programs in the Department. A variety of high-end and special-purpose systems are available for research through the Ohio Supercomputer Center. University and college systems include a variety of servers and workstations running current operating systems including Linux, Mac OS, and Windows. Department facilities provide specialized systems and support equipment tailored to specific curriculum and research areas. These include a Linux-based Operating Systems and Internet Security lab, an Immersive Visualization and Animation Theater lab, and a variety of workstations and personal computers providing software tools for project design and development. The program also has access to one of the most advanced visualization and presentation environments in the nation, the Appenzeller AudioVisualization Lab, located in the Joshi Research Center. The Department has laboratories dedicated research in assistive technologies, RFID, vision interfaces and systems, medical image analysis, parallel and distributed computing, evolvable hardware, database systems, data mining, mobile information and communications, software engineering, artificial intelligence, adaptive vision, advanced computer networking, semantic web services oriented computing, scientific workflows, business process management, and bioinformatics.

Faculty

Professors

Nikolaos G. Bourbakis, (Director, Assistive Technologies Research Center), information security (encryption, information hiding, compression, forensics), computer systems (distributed, formal languages, processors, modeling), applied artificial intelligence (knowledge representation, planning, learning, autonomous agents, natural language processing), machine vision and image processing (architectures, languages, algorithms), Robotics (navigation, grasping, 3-D space maps, walking), assistive technology (blind, deaf, paraplegic), biomedical (bioimaging, cells modeling, neuromorphic systems, brain surgery, brain biometrics, endoscopy, human-eye)
Chien-In Henry Chen (Department of Electrical Engineering), computer aided design,

verification and testing of VLSI circuits and systems, specifically in digital analog, mixed-signal designs, and system-on-a-chip (SoC), VLSI and FPGA implementation of signal processing and communication systems like GPS and digital wideband receivers
Soon M. Chung, database, data mining, Grid computing, parallel processing, XML, multimedia, computer architecture
Guozhu Dong, database systems, data mining and knowledge discovery, data warehousing and integration, data cubes and OLAP, bioinformatics, knowledge management, information and internet security
Arthur A. Goshtasby, computer vision, computer graphics, geometric modeling, medical image analysis
Jack Jean, high-performance computer architectures, RFID applications
Kuldip S. Rattan (Department of Electrical Engineering), fuzzy control, robotics, digital control systems, prosthetic/orthotics and microprocessor applications
Mateen M. Rizki, evolutionary computation, pattern recognition, image processing, machine intelligence
Amit P. Sheth, semantic web; information integration & analysis; services science; workflow management; data & knowledge intensive applications in biomedical, health care, and national security domain
Thomas A. Sudkamp (Chair), fuzzy set theory, soft computing, approximate reasoning
Krishnaprasad Thirunarayan, semantic web: knowledge representation and reasoning, programming languages: specification, design and implementation
Bin Wang, communication networks, wireless sensor and mobile networks, UWB, dynamic spectrum access, cognitive radio, information theory, network coding, algorithm design, quality of service, dense wavelength division multiplexing (DWDM) optical networks, network security, network modeling, analysis, simulation, protocol design and development
Bin Wang, communication networks, wireless sensor and mobile networks, UWB, dynamic spectrum access, cognitive radio, information theory, network coding, algorithm design, quality of service, dense wavelength division multiplexing (DWDM) optical networks, network security, network modeling, analysis, simulation, protocol design and development

Associate Professors

Travis E. Doom, bioinformatics, digital design automation, computer architecture and operating systems, optimization theory, and engineering education
John M. Emmert (Department of Electrical Engineering), physical VLSI design in nanoscale technologies, physical design automation for VLSI, mixed-signal design, built-in self-test, and fault tolerance for VLSI systems
John C. Gallagher, Adaptive and Evolvable Hardware, Autonomous Robotics, neural networks, machine intelligence, computational neuroscience
Prabhaker Mateti, distributed computing, Internet security, formal methods in software design
Yong Pei, distributed computing, multimedia system and networking, sensor network, information theory, bio-networks, distributed signal processing
Michael L. Raymer, evolutionary computation, pattern recognition, bioinformatics, protein structure modeling, molecular evolution, forensic bioinformatics, computational toxicology
Bin Wang, communication networks, wireless sensor and mobile networks, UWB, dynamic spectrum access, cognitive radio, information theory, network coding, algorithm design, quality of service, dense wavelength division multiplexing (DWDM) optical networks, network security, network modeling, analysis, simulation, protocol design and development

Assistant Professors

Keke Chen, secure and privacy-preserving computing, databases, data mining and information visualization, web science, and social computing
Pascal Hitzler, semantic web, knowledge representation, automated reasoning, mathematical founddatins
Meilin Liu, embedded systems, compiler, loop transformation techniques, computer

architecture, information security
Shaojun Wang, machine learning, natural language processing, information theory
Thomas Wischgoll, scientific visualizations, biomedical imaging, flow visualization, information visualization, computer graphics, image processing and feature extraction

Graduate Assistantship

Teaching assistantships are available on a competitive basis for students who have established strong academic credentials and can demonstrate good communication and teaching skills. Departmental Graduate Research Assistantships are also available and are associated with research projects of the faculty. They are normally awarded by or based on the recommendation of individual faculty. Application forms for these assistantships are available from the Department or on web at http://www.cs.wright.edu/cse/. To be considered for an assistantship, a student must be admitted to a graduate program or have an application on file with the Graduate School. Assistantships are also available from the Dayton Area Graduate Studies Institute (DAGSI). Applications are available from DAGSI at http://www.dagsi.org.

Research

A steadily increasing number of funded research projects support graduate research in areas such as medical imaging, multimedia systems and applications, biometrics, assistive technologies, soft computing and evolvable hardware, intelligent agents and robotics, data mining and databases, bioinformatics, networking and mobile computing, wireless and internet security, RFID applications, the semantic web, and services science. A strong research faculty in the Department of Computer Science and Engineering is assisted by qualified research faculty in mathematics, statistics, and electrical engineering.

Research at Wright State University is not limited to on-campus laboratory facilities. Several industrial laboratories, Wright-Patterson Air Force Base laboratories, and the Major Shared Resource Center at Wright-Patterson Air Force Base are involved in joint research efforts with the university. In addition, the Joshi Research Center and daytaOhio are focal points for new technologies that advance data management solutions and data management innovation.

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Last updated by the WSU Web Team (mnr).
Please send comments to Denise Thomas-Hoskins.

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Earth & Environmental Sciences

Introduction

The Department of Earth and Environmental Sciences offers two master's degree programs—the Master of Science and Master of Science in Teaching (Earth Science). The Master of Science program prepares students for careers as professional earth scientists in industry, government, or education, or for continued graduate study. Current program concentrations are in earth sciences (hydrogeology, geophysics, geochemistry) and environmental sciences. The department is widely recognized for its applied and multidisciplinary programs and maintains a strong emphasis on practical field applications.

A nonthesis M.S. degree option is available for individuals seeking to gain expertise in earth or environmental sciences who already have an M.S. or Ph.D. degree in science or engineering from an accredited university, and who have completed a research thesis or dissertation.

The Master of Science in Teaching (Earth Science) program is designed for K–12 educators seeking to add content and education courses in Earth/Space Science that may lead to Ohio Early Childhood Education, Middle Childhood, or Adolescent Young Adult (AYA) licensure in Earth/Space Science; or for presently certified or licensed K–12 teachers seeking to improve their knowledge of Earth/Space Sciences.

In addition to the above programs, the department supports two interdisciplinary programs offered within the College of Science and Mathematics: Interdisciplinary Science and Mathematics Master of Science in Teaching (M.S.T.) and Interdisciplinary Environmental Sciences (M.S.).

For additional information on the department and its programs, you might wish to consult our Web site at www.geology.wright.edu/.

Admission

A candidate for the Master of Science degree must possess a Bachelor of Science degree or Bachelor of Arts degree from a recognized institution. Students must have a strong background in earth or environmental sciences with appropriate courses in supporting sciences, mathematics, and computer science. Students not meeting these requirements may be admitted with deficiencies. A candidate for the Master of Science in Teaching degree must possess a Bachelor of Arts or Bachelor of Science degree from a recognized institution.

Degree Requirements

Master of Science in Earth and Environmental Sciences

In addition to the requirements of the School of Graduate Studies, the following requirements of the Department of Earth and Environmental Sciences must be met:
1. Completion of 45 or more graduate credit hours apportioned in the following way: at least nine hours of thesis credit and at least 36 additional hours of graduate credit in an instructional program approved by the candidate's graduate committee, including colloquia or seminars as required by the department
2. Submission of an approved thesis based on original research
3. Satisfactory performance in a final thesis defense near the end of the degree program

Individual programs of study tailor course work, seminars, and research guided by faculty to the professional and educational goals of each student. Each graduate student is advised by a committee of three faculty members. Ultimate responsibility for fulfilling all requirements rests with the student.

Environmental Sciences Ph.D. Program
The department also participates in the interdisciplinary Ph.D., in Environmental Sciences, concentrating on Environmental Geophysics, Hydrogeology, and Geochemistry. See the separate listing for that program or consult the Web site www.wright.edu/academics /envsci/.

Master of Science in Teaching (Earth Science)
In addition to the requirements of the School of Graduate Studies, the following requirements of the Department of Earth and Environmental Sciences must be met:
1. Completion of a minimum of 45 graduate credit hours apportioned in the following way: a maximum of 12 credit hours in the College of Education and Human Services, 6 credit hours of project credit, 9 hours of field-based courses in earth sciences, and additional graduate courses approved by the student's graduate committee to fulfill the credit hour requirement
2. Submission of an approved project report
3. Satisfactory presentation of an approved project
Because graduate students working toward this degree are expected to have a wide range of backgrounds, programs must be designed on an individual basis. For instance, students may choose to focus on the environment by taking a suite of environmental sciences courses combined with a related environmental project. Graduate students are guided by an advisory committee consisting of two faculty members from within the department and one faculty member from education. This advisory committee is responsible for advice concerning the academic program including the project, the number of education courses, and the selection of other courses to fulfill candidacy requirements. Ultimate responsibility for fulfilling all requirements rests with the student.

Facilities

The Department of Earth and Environmental Sciences is housed primarily in the Brehm Laboratory. Department facilities include 12 teaching and research laboratories and a wide variety of specialized facilities. The department's research facilities and equipment are outstanding and lend critical support to its applied programs. The department's dedicated computer facilities provide PCs, Macs, and custom workstations for GIS, geological, hydrological, geophysical, and remote sensing applications.

In addition to the laboratory facilities described here, the department has an exceptional array of field equipment for faculty and student use. This equipment includes truck-mounted drilling rigs, trucks, vans, and other vehicles for field research. Two technicians are employed to maintain and improve both field and laboratory equipment.

The mineralogy/crystallography/petrology laboratories feature reference and display collections of minerals and rocks, Zeiss universal microscopes, and several student model microscopes. A Logitech thin-sectioning machine and facilities for mineral separations are

available.

The sedimentary petrology laboratory is equipped with a Wild stereomicroscope with drawing attachment, Nuclide Cathodoluminescence Luminoscope, Zeiss Universal petrographic microscopes, digital photography equipment, an interactive video-computer microscope system, UV luminescence equipment, an air abrasive unit, and the petrologic equipment listed previously.

Current research projects in carbonate sedimentology focus on the origin, depositional environments and diagenesis of Quaternary shallow-water carbonates, local and regional scale deposition and diagenesis of Mississippian limestones, and Silurian shallow-water carbonates in Ohio. Projects in clastic sedimentology focus on facies analysis of Paleozoic fluvial sandstones, Pleistocene glacial (fluvial and lacustrine) sediments, and the effects of sedimentary structures and facies distributions on ground water flow.

Several laboratories support research in hydrogeology and environmental geochemistry. Field campaigns are supported by equipment for sampling or in situ determination of both the physical and the chemical properties of hydrogeologic systems, including drilling rigs with numerous support vehicles, sample extraction apparatus, in situ sampling probes with automated digital data acquisition systems, and downhole geophysical logging tools. Two field sites with dedicated hydrogeological monitoring equipment are maintained.

The hydrogeochemistry laboratories comprise a complete line of analytical instrumentation for the analysis of aqueous chemical parameters, including ion chromatography, VIS/UV spectrophotometry, and gas chromatography. An organic geochemistry lab is equipped with the latest Hewlett-Packard gas chromatograph and automatic sampler, managed by a computer system and HP GC Chemstation software.

Current research includes the theory and the application of ground-water flow and pollution modeling, hydrogeochemical modeling, theory and application of environmental isotopes for the investigation of hydrologic systems, organic contaminant fate and transport, insular water resource planning and management, ground-water buffering of acid precipitation, acid-mine drainage, hydrogeology and diagenesis of carbonates, non-point source pollution (Sycamore Farms Experimental Watershed), wetland hydrogeology and hydrogeochemistry, hydraulics of fractured rocks, and the characterization of hazardous waste repositories.

The facilities and equipment supporting research in geophysics include a 120-channel seismic reflection system, geophysical workstations for seismic modeling, Sun workstations running PROMAX for seismic data processing, a new linux cluster donated by Hess being installed with Schlumberger 3D seismic analysis and interpretation, three gravity meters (LaCoste-Romberg and Worden), a magnetic gradiometer system, both GSSI SIR-2 and SIR-3000 ground-penetrating radar systems with a wide range of antennae, a Sting-Swift 2D/3D resistivity imaging system, a 48-channel Strataview engineering seismograph, a trailer-mounted Bison elastic wave generator, a Leica TCRA1105 total survey station and a Trimble GPS survey system.

Research on near surface geophysical studies related to environmental and engineering problems includes geophysical archaeology, karst/mine detection and mapping, geophysical mapping of levee integrity, and detection of old coal mines from scattering of in-seam seismic waves generated by active mining nearby. Additional research includes seismic refraction and reflection studies relating to the geology of Ohio and the U.S. continental interior.

The Department of Earth and Environmental Sciences has a remote sensing laboratory comprising a Sun Sparc 80 and personal computers with remote sensing data processing software and has the capability to download and process a variety of satellite and airborne

image formats. The facility includes a large-format plotter suitable for large-scale mosaics.

Additional research areas require only advanced computer facilities. Current research topics include the temporal dynamics of stream and river discharge, spatial patterns of hurricane landfall, spatial patterns of trees in a forest, patterns of land use, dynamics of coastal water-level change, and shoreline dynamics.

Excellent cooperative academic and research relationships exist with other departments on campus and with surrounding colleges and universities in southwestern Ohio. The department has wide-ranging capabilities and can accommodate through its facilities a very broad range of research ideas.

Faculty

Professors

Christopher C. Barton, analysis and forecasting of complex systems
Allen Burton (chair), aquatic toxicology, ecological risk assessment
C. Bryan Gregor, geochemical cycles, mass age distribution of sediments
Byron R. Kulander (Emeritus), structural geology, geophysics
Benjamin H. Richard (Emeritus), field geology, exploration geophysics
Robert W. Ritzi Jr., hydrogeology, hydrogeological modeling
Paul J. Wolfe (Emeritus), exploration geophysics

Associate Professors
Abinash Agrawal, contaminant hydrogeology, site remediation
Cindy Carney, carbonate petrology, carbonate sedimentology, diagenesis
Songlin Cheng, hydrogeochemistry, isotope hydrology, geographic information systems
David Dominic, fluvial and glacial sedimentology, hydrogeology
Ernest C. Hauser, near surface geophysics, subsurface imaging
William Slattery, teacher education, sequence stratigraphy
Doyle Watts, remote sensing, seismic data acquisition and processing, astrogeology

Assistant Professor
Rebecca Teed, teacher education and Quaternary paleoecology

Instructor
Huntting Brown, environmental management and law

Financial Assistance

Graduate teaching assistantships and graduate assistantships carrying stipends and fee remissions are awarded. Research assistantships connected with supported research projects and research contracts are also available. Tuition scholarships are available in special cases.

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Please send comments to Denise Thomas-Hoskins.

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Economics

Introduction

The Department of Economics offers a professionally oriented graduate program that leads to a Master of Science in Social and Applied Economics.

This program is designed to develop professional economists who can solve contemporary economic problems with a unique set of skills created by a curriculum that combines applied economics with social economics. In doing so, the program bridges the gap between research and the application of research for use in a wide variety of business and government professions. Students are encouraged to develop and evaluate new approaches to economic problem solving. The curriculum stresses research and field experience, which is complemented by the faculty's teaching and research emphasis on the interplay of theory and applications.

Admission

An applicant for graduate study in the social and applied economics program is required to meet the general requirements of the School of Graduate Studies and also to be accepted by the Graduate Studies Committee of the Department of Economics. Students need not have an undergraduate degree in economics to enter this program; however, the student's undergraduate grade point average (GPA) and, if applicable, graduate GPA will be considered. The Graduate Record Examination (GRE) general test is required. (Students selecting to do the dual degree with the MBA may substitute the GMAT for the GRE.)

Application forms for admission and for the GRE are available in the office of the chair of the Department of Economics or from the School of Graduate Studies. Both full- and part-time students are accepted for admission to the program.

Degree Requirements

Candidates for the Master of Science degree in Social and Applied Economics must successfully complete a minimum of 48 credit hours in courses numbered 600 or above, exclusive of prerequisite survey courses. Of the total 48 hours, 44 must be taken in the department (40 credit hours of courses plus four credit hours of internship). Students must achieve a cumulative grade point average of 3.0 in all graduate courses exclusive of the internship, which requires a grade of pass. No more than nine credit hours of C grades may be applied toward the degree.

As many as 12 graduate credit hours may be transferred into the M.S. program in social and applied economics by petition to the Graduate Studies Committee in the Department of Economics and subject to approval by the School of Graduate Studies.

All candidates are required to complete an internship. Prior to the internship, students should have completed a minimum of 24 credit hours (including EC 709 and EC 712). Approval by the student's advisor and the Graduate Studies Committee of the department is also required. Detailed information on internship objectives, standards, and supervision is available upon request from the director of the M.S. in economics program.

In very rare cases, the Graduate Studies Committee of the Department of Economics may require a student to take and pass a comprehensive written and/or oral examination as a degree requirement.

Prerequisites
A bachelor's degree in economics is not required prior to entering the program; however, basic courses in economics principles, introductory statistics, and calculus are minimum requirements. Students who have not had these courses or the equivalent should complete the courses before entering the program. Upon approval of the Graduate Studies Committee of the Department of Economics, students may make up deficiencies in program prerequisites after admission to the program, but before taking courses requiring these specific prerequisites. The following survey courses have been designed to meet the program prerequisites: EC 510 (for calculus), EC 509 (for statistics), and EC 521 and 522 (for principles of micro- and macro-economics). MBA 520 may be substituted for EC 521-522.

Faculty

Professors
John P. Blair, urban and regional economics, economic policy, public finance
Joseph G. Eisenhauer (Chair), economics of risk, ethics, labor economics, applied microeconomics, statistics
Rudy Fichtenbaum, econometrics, labor economics, macroeconomics, health economics
Paulette Olson, labor economics, history of economic thought, methodology, economics of gender
Evan W. Osborne, microeconomic theory, law and economics, public choice, international economics
Robert Premus, regional-urban economics, public finance, economic theory, monetary economics
G. Thomas Sav, microeconomics, public finance, energy economics, property rights
Thomas Traynor, forecasting, econometrics, industrial organization, microeconomics

Associate Professors
Tran Huu Dung, microeconomics, international economics, physical economics
Barbara E. Hopkins, comparative economic institutions, development economics, gender analysis, economics of the Pacific Rim

Assistant Professors
Sirisha C. Naidu, environmental and natural resource economics, economics of development and conservation
Zdravka Todorova, institutional economics, macroeconomics, monetary theory

M.S. Director
Leonard Kloft, globalization, economic history, international economics, cliometrics, electronic commerce

Financial Assistance

Other financial assistance programs are available for graduate students. This assistance may be provided through financial aid and/or graduate academic fellowships. For further information concerning financial aid, please contact the Office of Financial Aid. Information

regarding graduate academic fellowships may be obtained by contacting the director of the graduate program.

Graduate Assistantship

Assistantships are available on a competitive basis for the first year of study. Undergraduate GPA, GRE scores, letters of recommendation, TOEFL score, and other materials are used in the assistantship decision. The department reserves the right to adjust the level of funding conditional on the availability of funds and the student's academic progress. Assistantships require students to spend a specified amount of time assisting either in instruction or in research. The balance of their time is devoted to graduate studies. Graduate assistants are required by the graduate school to register for a minimum of eight hours of graduate credit per quarter (a maximum of six credit hours for each five-week summer term is considered the normal load).

Program Description

Any modification of the following program requirements requires petition approval by the department, college, and university graduate studies committees. The program is designed so that students may complete the degree in one calendar year.

Dual Degree with M.B.A.
Students may obtain both the Master of Business Administration degree and the Master of Science degree in Social and Applied Economics under the dual-degree program, which permits common course work to apply to both programs. This policy does not apply to students who receive an M.B.A. degree from schools other than Wright State. For further information, contact the director of the M.S. program in economics or the director of the M.B.A. program.

Course of Study

Required Courses	**36**
EC 709 Econometrics and Its Applications	4
EC 712 Forecasting Economic Activity	4
EC 715 Applied Microeconomics	4
EC 717 Applied Macroeconomics	4
EC 724 Development of Economic Thought	4
EC 725 Economic, Social and Ecological Systems	4
EC 726 Contemporary Political Economy	4
EC 780 Economic Problems Seminars	4
EC 785 Internship*	4
Electives	**12**
Choose three courses:	
EC 602 Monetary Economics	
EC 610 Introduction to Mathematical Economics	4
EC 635 Comparative Capitalist Institutions	4
EC 644 Problems of Economic Development and Transition	4
EC 645 Political Economy of Women	4
EC 719 International Economics	4
EC 722 Economics for Managers	4

EC 730 Regional and Urban Economics	4
EC 731 Economics of Public Finance	4
EC 740 Cost-Benefit Analysis and Social Project Evaluation	4
EC 755 The Economics of Health and Health Policy	4
EC 765 Labor Market Theory and Policy	4
EC 777 Economic Studies	4
EC 781/782/783 Research in Economics	
Two courses must be in economics. One course may be noneconomics. Approval of advisor is required for electives taken outside of the Raj Soin College of Business.	
Economics	8-12
Noneconomics	0-4
Total	**48**

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Economics Education

Introduction

The Center for Economic Education has been established as a center of excellence to increase economic understanding in a designated 15-county area through a number of community outreach programs.

Program Description

The center offers courses designed for the special needs of kindergarten through twelfth grade teachers and administrators. Each course helps participants develop an understanding of economic principles and concepts and demonstrates materials and methods useful in teaching the K–12 curricula. Participants are challenged to develop teaching units for their classrooms or schools.
Although graduate credit is awarded for these courses, this credit may not be applied toward the M.B.A. or M.S. in Social and Applied Economics degrees.
The Center for Economic Education offers in-service training to teachers on a wide range of educational topics. Workshops provide a practical approach to teaching that can be useful in preparing for proficiency testing.

Graduate School
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Last updated by the WSU Web Team (mnr).
Please send comments to Denise Thomas-Hoskins.

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Education and Human Services - An Overview

Introduction

The College of Education and Human Services offers programs leading to graduate degrees in the following areas: leadership development, educational leadership, with programs in curriculum and supervision (M.A. and M.Ed.)and school administration (M.A. and M.Ed.); teacher leader (M.Ed.); student affairs in higher education, educational technology, library media (M.A., M.Ed.), human services with programs in counseling (M.A., M.S.), rehabilitation counseling (M.R.C.), and student personnel services (M.A., M.Ed.); and teacher education, with a classroom teacher program that includes a variety of concentrations and specialized areas in K–12 such as art, and special education/intervention specialist (M.A., M.Ed.). In order to accommodate increased academic requirements by the state of Ohio, Wright State offers graduate initial licensure programs for Middle Childhood Education, Adolescent to Young Adult Education, and Multi-Age Education which lead to Master's of Education (M.Ed.) degree. Concentrations in these programs are listed in the Graduate Degrees, Programs, and Credit section and are described in detail in the following pages.

Admission

In addition to meeting requirements for admission established by the School of Graduate Studies (these requirements can be reviewed at this Web site http://www.wright.edu /academics/catalog/grad/admissions/), candidates for these degrees who do not meet the minimum cumulative GPA requirement to waive the GRE or MAT, must submit satisfactory Graduate Record Examination (GRE) or Miller Analogies Test (MAT) scores, unless otherwise noted (see Admission Standards). The Adolescent to Young Adult Education, Multi-Age Education (Art), and Middle Childhood Education initial teacher licensure programs require passing scores on the state of Ohio's mandated Praxis II Specialty (Content) Area Exam(s). Contact the college's Office of Student Services or visit their Web site at www.cehs.wright.edu/ss/ to learn more about the Praxis II exams. Multi-Age Education (Spanish, French) licensure programs require passing scores on the Oral Proficiency Interview (OPI) and the Writing Proficiency Test (WPT) at the advanced/low level.

All students considering graduate-level courses in education and human services should do so with the understanding that graduate study differs in quality expectations from undergraduate study. Graduate study requires that students be increasingly self-directed and possess strong analytical skills. Students are not guaranteed a master's degree or a recommendation for a teaching credential by attending and completing courses. Exit requirements must be met in all programs.

Admission to the College of Education and Human Services is based on the candidate's written statement of purpose, consideration of undergraduate and/or graduate cumulative

grade point average, submission of satisfactory scores on either the MAT, GRE, or other required examination, and in some cases, letters of reference
and a personal interview (see Admission Standards).

Technology Policy
For admission to the college, all College of Education and Human Services students, graduate and undergraduate, part-time and full-time, will be expected to certify that they own or have access to a computer and the Internet.

In order to meet the mission of the college "…to prepare professionals to meet the Educational, leadership, and human services needs of a diverse, democratic society," it is necessary for our students to play an active role in the technological environment the college and Wright State University are creating to assist in the completion of this mission. An increasing number of classes and options will become available to students using a variety of distributed learning formats; library resources are available in a growing number of full-text formats, and global connections via telecommunications will be part of daily operations. Students preparing to become professionals in education and human service areas must demonstrate appropriate and effective skills and knowledge in technological aspects of their work.

Minimum equipment requirements are recommended by Wright State University's Computing and Telecommunications Services (CaTS). Please check the following Web Site http://www.wright.edu/cats/purchase/pcguidelines.html for current
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The college supports Macintosh computers in faculty and staff offices and maintains a computer lab. Wright State University has purchased a site license for most Microsoft software (see the Web page for Wright State's Computing and Telecommunications Services, http://www.wright.edu/cats/ for details).

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In order for an Ohio college or university to prepare educators for licensure by the Ohio Department of Education, we must demonstrate that we meet the standards of the National Council for Accreditation for Teacher Education (NCATE). Programs that meet NCATE standards are approved to prepare educators to hold licenses in Ohio. NCATE standards require that all programs that lead to an educator license (including administrators, teachers, school counselors, etc.) must document how our programs prepare our candidates successfully to meet the challenges of today's schools. This documentation must be uniform and systematic across all programs and licensure areas that the college offers. In addition, the college must show how faculty, staff and school partners utilize this information systematically to continuously improve our programs over time.

Since 2006 the college has utilized a data management system called Tk20 to collect key assessments to document the achievements of our candidates and programs. In order to do this, it is necessary for our faculty to ask students to submit certain assignments electronically. There is a one-time student fee of $100 to register for the Tk20 system. This system will be available to you and your professors for a period of seven years.

Accreditations
The College of Education and Human Services meets the standards of, and has been approved by, the Ohio State Board of Education and is a member of the American Association of Colleges for Teacher Education. The college's teacher education programs are accredited by the National Council for Accreditation of Teacher Education (NCATE). The college's community counseling, mental health counseling, and school counseling programs are accredited by the Council for Accreditation of Counseling and Related Educational Programs (CACREP), and the Rehabilitation Counseling programs carry the

Council on Rehabilitation Education (CORE)
accreditation.

Initial Teaching Credential
Students seeking to enroll in a Teacher Education program designed to deliver an initial teaching credential (license) are required to pass the Praxis II specialty/content area exam(s) as defined by current state of Ohio standards. Multi-Age Education (Spanish, French) licensure programs require passing scores on the Oral Proficiency Interview (OPI) and the Writing Proficiency Test (WPT) at the advanced/low level.
Candidates to these programs must contact the college's Office of Student Services for assistance in identifying the appropriate exam(s) for his/her desired teaching field. Students unable to achieve a passing score as defined by state of Ohio standards will not be admitted to a Teacher Education program. Students seeking to enroll in a Teacher Education program designed to deliver an initial teaching credential will not be required to take the GRE or MAT exams. An exception to this rule are the Intervention Specialist programs. Applicants to these programs must take the GRE or MAT exams, unless eligible to waive testing requirement based on cumulative GPA (see Waiver of GRE/MAT).

Admission Standards
Admission into regular status requires an overall undergraduate grade point average of 2.7 (based on a 4.0 grading system) or an overall undergraduate grade point average of 2.5, but with a 3.0 or better for the last 90 quarter hours (60 semester hours) earned toward the undergraduate degree. Admission into this status also requires approval of the department in which the programs are housed.

Candidates with a grade point average of less than 2.3 on a 4.0 grading system are not ordinarily admitted to graduate school. A petition process is available to formally request admissions not having met an admission standard .

Candidates for admission to the Department of Human Services must meet additional requirements, which include three letters of reference, a personal interview, and a writing sample.

Candidates for admission to certain programs in the Departments of Educational Leadership and Teacher Education must meet additional requirements, which include letters of reference, a personal interview, a writing sample, a self-assessment instrument, and Praxis II specialty area exams.

Waiver of GRE/MAT
Candidates to Educational Leadership master's degree programs, Health, Physical Education, and Recreation (HPR) programs, and select Teacher Education programs (including special education/intervention specialist) may not be required to submit passing GRE or MAT scores if their cumulative undergraduate GPA is a 3.0 or higher. Candidates to Teacher Education programs requiring a passing score on a PRAXIS II specialty area exam(s) or OPI/WPT exam must submit passing scores regardless of undergraduate GPA.

Candidates to Human Services programs may not be required to submit passing GRE or MAT scores if their cumulative undergraduate GPA is a 3.3 or higher.

Provisional
Under certain conditions, a student may be admitted provisionally (for one quarter only), pending receipt of credentials. If admission requirements are not met during the quarter in which a student was admitted provisionally, registration for future quarters will be denied and the student will lose graduate credit for any graduate courses completed during the quarter.

Conditional

Students who have an undergraduate grade point average of 2.5 or better, or who have an average between 2.3 and 2.5 with 2.7 or better in the last half of undergraduate work, may be granted conditional admission.

Regular admission to the College of Education and Human Services is granted after successful completion of 12 hours of course work with a grade of B or better in each course.

Teaching Licensure/Endorsement Candidate
Students who wish to complete licensure requirements at the graduate level but do not wish to pursue a graduate degree may be admitted as licensure candidates with the permission of the department in which the programs are housed. Persons pursuing a teacher licensure program are required to complete the Ohio Department of Education prescribed exams for their intended area(s) of licensure. Most licensure programs require seperate application to the college. Visit this web site for information - www.cehs.wright.edu/ss.

Nondegree Status
Persons who have a bachelor's degree may enroll in nondegree status for graduate courses without being admitted to a graduate program. If you are accepted into degree status at a later date, a maximum of one half (50 percent) of the graduate hours required for completion of degree requirements may consist of applicable graduate courses completed in nondegree status. The exception is that the Department of Human Services, allows only 12 hours of nondegree credit to be applied to one of its degree programs. Students in nondegree status are not considered candidates in a program.

Degree Requirements

Master of Arts
The Master of Arts (M.A.) degree in education may be obtained in almost all of the programs offered by the College of Education and Human Services. The M.A. degree requires a minimum of 45 credit hours including a thesis. A maximum of nine hours of thesis credit will be counted toward the M.A. degree. An oral defense is required for students writing a thesis. The examining committee will consist of three members of the graduate faculty selected by the student and advisor.

Each graduate student will be assigned an advisor upon admission as a degree student. The student is required to consult with the advisor to plan the program of study during the first quarter of graduate study.

Master of Education
The Master of Education (M.Ed.) degree may be obtained by completing one of two patterns: (a) a minimum of 45 credit hours of course work, (b) a minimum of 40 credit hours of course work, plus five credit hours of a research project.

Each graduate degree student will be assigned an advisor upon admission to the college. The student is required to consult with the advisor to plan the program of study during the first quarter of graduate study.

A program of concurrent degree and licensure work typically will require more course work than the standard master's degree program, and may require the individual to take undergraduate courses. These undergraduate courses apply to licensure requirements, but do not apply as graduate credit toward a master's degree.

An exit requirement must be successfully completed at the end of the program of study in all CEHS departments.

Master of Science
The Master of Science (M.S.) degree in counseling offers concentrations in five specialties: *mental health counseling, *community counseling, business and organizational management counseling, marriage and family counseling, and ocunseling exceptional children. The M.Ed. in *school counseling is also offered.

*Note: These three programs are accredited by the Council for Accreditation of Counseling and Related Education Program (CACREP). These programs require the completion of a practicum and/or internship.

The Master of Science in Leadership (MSLD) addresses the principles of individual-based leader development within the discipline of leadership, focusing on processes that build the capacity of groups.

Admission requirements include a completed graduate application submitted to the School of Graduate Studies. In addition to the application, candidates must also submit a writing sample and three letters of recommendation, and participate in a group interview. The Master of Science degree may be obtained by completing all requirements outlined in the student's program of study. The program of study is the student's contract with the School of Graduate Studies (SOGS), which outlines required courses and electives, department and SOGS academic standards, and any modifications agreed on by the student's academic faculty advisor.

Each graduate degree student will be assigned an advisor upon admission to the college. The student is required to consult with the advisor to plan the program of study during the first quarter of graduate study.

Successful completion of a written departmental comprehensive examination or equivalent is required at the end of each program of study.

Master of Rehabilitation Counseling
The Master of Rehabilitation Counseling (M.R.C.) program offers training and course work designed to develop skills in the holistic counseling process. The program prepares students for work within a wide variety of settings, and students may choose to specialize in either the rehabilitation of persons with severe disabilities or the rehabilitation of individuals who are chemically dependent. M.R.C. students must successfully complete a 600-hour internship. These programs are accredited by the Council on Rehabilitation Education (CORE).

Each graduate degree student will be assigned an advisor upon admission as a degree student. The student is required to consult with the advisor to plan the program of study during the first quarter of graduate study.

Successful completion of a written departmental comprehensive examination or equivalent is required at the end of the degree program.

Final Evaluation for Programs
For students in the M.A. programs, the oral defense of the thesis constitutes the major emphasis of the final evaluation. The examining committee will consist of three members of the graduate faculty selected with the student's advisor.

Students in the M.Ed., M.S., M.R.C., and M.A. programs must successfully complete a departmental comprehensive exit requirement. Should the student fail to pass the final comprehensive requirement, the student and advisor will plan a remedial program of study in preparation for reevaluation. Such a program could include independent study, further course work, or both. As a result, the quarter hour requirements for the degree may also be increased. Students may retake the comprehensive exit requirement a maximum of three

times. Students are required to participate in mandatory advising with their faculty following each unsuccessful attempt.

Thesis Procedures: For M.A. and M.S. Leadership Development Candidates

Students planning to write a thesis in partial fulfillment of the requirements for a master of arts degree should do the following:

1. Upon completion of EDL 751, EDL 852 and EDL 988 (consult with your advisor), register for one of the following to receive thesis credit:
ED 899 1–9 hours or
EDT 899 1-9 hours or
EDL 999 1–9 hours.
2. Prepare a preliminary thesis or project proposal following the college or departmental outline for proposals. This proposal is to be developed with the assistance of the faculty advisor.
3. Establish a thesis committee. It is customary, although not required, for a student's advisor to be a member of the committee. The remainder of the committee may include persons in the College of Education and Human Services or other disciplines and should be chosen as resource persons relative to the research. The function of the committee is to facilitate the student's progress toward completing the proposal, conducting the study, and preparing the final thesis. Further, the committee serves as the primary source of evaluation of the student's oral defense.
4. Upon completion of the oral defense, submit an electronic copy of the approved thesis to the School of Graduate Studies. The outline for thesis proposals may be obtained from their thesis advisor. The Graduate Thesis/Dissertation Handbook may be obtained from the School of Graduate Studies. Consult the School of Graduate Studies regarding instructions for loading your thesis on Ohio Link.

Also, selected Teacher Education Department (TED) programs require an Inquiry Project in lieu of a thesis-consult your faculty advisor.

Students planning on writing a thesis as partial fulfillment of the Master of Science in Leadership Development degree should do the follwing:

1. Upon completion of LDR 730, LDR 740 and LDR 750 (with deparment permission) register for LDR 999, 1 to 8 hours (consult with your advisor)
2. Establish a thesis committee with the assistance of your advisor
3. Prepare thesis in accordance with the School of Graduate Studies, Graduate Thesis Handbook

Faculty

Professors
Colleen Finegan, early childhood education, intervention specialist
Ron Helms, teacher education
Doug Roby, educational leadership
Charles W. Ryan, higher education
James Tomlin, science education/biology
Richard A. Wantz, counselor education

Associate Professors
Mary Ellen Bargerhuff, intervention specialist
Beth Basista, science education/physics
Angela Beumer-Johnson, English education
Timothy Boester, math education
Roger Carlsen, educational leadership/educational technology

Stephanie Davis, educational leadership/career and technical education
Thomas Diamantes, educational leadership
James Dunne, intervention specialist
Stephen B. Fortson, counselor education
Suzanne Franco, educational leadership
Scott Graham, educational leadership/organizational leadership
Grant Hambright, educational leadership
Charlotte Harris, teacher education
Phyllis A. Henderson, counselor education
Doris Johnson,teacher education
Mary Ann Jones, counselor education
Joseph Keferl, rehabilitation counseling
Marietta Langlois, health education
Jill Lindsey, educational leadership
Susann Mathews, mathematics education
Will Mosier, early childhood education
Richelle O'Connor, teacher education
D. Drew Pringle, health and physical education
Timothy Rafferty, educational leadership (emeritus)
Linda Ramey, teacher education
Patricia R. Renick, intervention specialist, transition to work (TTW)
Ken Schatmeyer, literacy education
William Slattery, science education/geology
Donna Tromski-Klingshirn, counselor education

Assistant Professors
Christa Agiro, English education
Anna Apova, math education
Susan Berg, educational leadership/school library media
John Haught, tesol education
Deborah Hess, early childhood education
Lisa Kenyon, science education/biology
Kathy Koenig, science education/physics
Sally Lamping, english education
Catherine Keener, intervention specialist
Kevin Lorson, physical education
Anna Lyon, early childhood education
Noeleen McIlvenna, social studies education
Benjamin Montague, art education
Nimisha Patel, teacher education
Michelle Reed, mathematics education
Eileen F. Self, counselor education
Rebecca Teed, science education/geology
Karen Wonders, health education

Senior Lecturer
Marguerite Veres, educational leadership/educational technology

Lecturers
Rebekah Bower, athletic training
Barbara Dunaway, sign language interpreting
Siobhan Fagan, athletic training
Judy Jagger-Mescher, health education
Greta Knigga, interpretor
Tracey Kramer, teacher education
Tony Ortiz, athletic training
Joanne Risacher, educational leader/student affairs in higher education

Gail Scott, intervention specialist

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Graduate Programs

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Education and Human Services - Career, Technical and Adult Education Classroom Teacher Program

Admission

Admission
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met in all programs.

Admission to the College of Education and Human Services is based on the candidate's written statement of purpose, consideration of undergraduate and/or graduate cumulative grade point average, submission of satisfactory scores on either the MAT or GRE, and in some cases, letters of reference and a personal interview (see Waiver of GRE/MAT).

Technology Policy
For admission to the college, all College of Education and Human Services students, graduate and undergraduate, part-time and full-time, will be expected to certify that they own or have access to a computer and the Internet.

In order to meet the mission of the college "…to prepare professionals to meet the educational, leadership and human services needs of a diverse, democratic society," it is necessary for our students to play an active role in the technological environment the college and Wright State University are creating to assist in the completion of this mission. An increasing number of classes and options will become available to students using a variety of distributed learning formats; library resources are available in a growing number of full-text formats, and global connections via
telecommunications will be part of daily operations. Students preparing to become professionals in education and human service areas must demonstrate appropriate and effective skills and knowledge in technological aspects of their work.

Minimum equipment requirements are recommended by Wright State University's Computing and Telecommunications Services (CaTS). Please check the following Web Site http://www.wright.edu/cats/purchase/pcguidelines.html for current information about minimum equipment requirements.

The college supports Macintosh computers in faculty and staff offices and maintains a computer lab. Wright State University has purchased a site license for most Microsoft software (see the Web page for Wright State's Computing and Telecommunications Services, http://www.wright.edu/cats/ for details).

Tk20
In order for an Ohio college or university to prepare educators for licensure by the Ohio Department of Education, we must demonstrate that we meet the standards of the National Council for Accreditation for Teacher Education (NCATE). Programs that meet NCATE standards are approved to prepare educators to hold licenses in Ohio. NCATE standards require that all programs that lead to an educator license (including administrators, teachers, school counselors, etc.) must document how our programs prepare our candidates successfully to meet the challenges of today's schools. This documentation must be uniform and systematic across all programs and licensure areas that the college offers. In addition, the college must show how faculty, staff and school partners utilize this information systematically to continuously improve our programs over time.

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Initial Teaching Credential (License)
Students seeking to enroll in a Career & Technical Education program designed to deliver an initial teaching credential (license) are required to hold a full-time teaching position in a Career and Technical Education program.

Admission Standards
Admission into regular status requires an overall undergraduate grade point average of 2.7 (based on a 4.0 grading system) or an overall undergraduate grade point average of 2.5, but with a 3.0 or better for the last 90-quarter hours (60-semester hours) earned toward the undergraduate degree. Admission into this status also requires approval by a degree program.

Candidates with a grade point average of less than 2.3 on a 4.0 grading system are not ordinarily admitted to graduate school. A petition process is available to formally request admissions not having met an admission standard.

Waiver of GRE/MAT Candidates to Educational Leadership master's degree programs, may not be required to submit passing GRE or MAT scores if their cumulative undergraduate GPA is a 3.0 or higher.

Provisional
Under certain conditions, a student may be admitted provisionally (for one quarter only), pending receipt of credentials. If admission requirements are not met during the quarter in which a student was admitted provisionally, registration for future quarters will be denied and the student will lose graduate credit for any graduate courses completed during the quarter.

Conditional
Students who have an undergraduate grade point average of 2.5 or better, or who have an average between 2.3 and 2.5 with 2.7 or better in the last half of undergraduate work, may be granted conditional admission.

Regular admission to the College of Education and Human Services is granted after

successful completion of 12 hours of course work with a grade of B or better in each course.

Licensure Candidate
Students who wish to complete licensure requirements at the graduate level but do not wish to pursue a graduate degree may be admitted as licensure candidates with the permission of the department in which the programs are housed. Many CEHS licensure programs require a seperate application to the college. Visit this web site for information - www.cehs.wright.edu/ss.

Faculty

Associate Professor
Stephanie Davis, educational leadership/career & technical education

Course of Study

Classroom Teacher: Career, Technical, and Adult Education (Master of Education)

Professional Education	**29**
CTE 611 Communication Techniques	4
CTE 621 The Learning Environment	4
CTE 631 Assessment and Instruction	4
CTE 651 Overview of Career & Technical Education (WebCT)	4
CTE 672 Clinical Practice	4
CTE 675 Priority & Mapping Curriculum	4
ED 631 Literacy Skills Through Adolescence	5
Core Courses	**8**
EDL 751 Statistics and Research in Education	4
CTE 730 Research in CTE (prerequisite: EDL 751)	4
Electives* 12 minimum	**12**
*To be determined by program advisor	
Total	**49**

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Graduate Programs

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Education and Human Services - Curriculum and Instruction: Teacher Leader

Admission

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All students considering graduate-level courses in education and human services should do so with the understanding that graduate study differs in quality expectations from undergraduate study. Graduate study requires that students be increasingly self-directed and possess strong analytical skills. Students are not guaranteed a master's degree by attending and completing courses. Exit requirements must be met in all programs.

Admission to the College of Education and Human Services is based on the candidate's written statement of purpose, consideration of undergraduate and/or graduate cumulative grade point average, submission of satisfactory scores on either the MAT, GRE, letters of reference.

Technology Policy
For admission to the college, all College of Education and Human Services students, graduate and undergraduate, part-time and full-time, will be expected to certify that they own or have access to a computer and the Internet.

In order to meet the mission of the college "…to prepare professionals to meet the Educational, leadership and human services needs of a diverse, democratic society," it is necessary for our students to play an active role in the technological environment the college and Wright State University are creating to assist in the completion of this mission. An increasing number of classes and options will become available to students using a variety of distributed learning formats; library resources are available in a growing number of full-text formats, and global connections via
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Admission Standards

Admission into regular status requires an overall undergraduate grade point average of 2.7 (based on a 4.0 grading system) or an overall undergraduate grade point average of 2.5, but with a 3.0 or better for the last 90-quarter hours (60-semester hours) earned toward the undergraduate degree. Admission into this status also requires approval by a degree program.

Candidates with a grade point average of less than 2.3 on a 4.0 grading system are not ordinarily admitted to graduate school. A petition process is available to formally request admissions not having met an admission standard. Candidates for admission to certain programs in the Departments of Educational Leadership and must meet additional requirements, which include letters of reference.

Waiver of GRE/MAT

Candidates to Educational Leadership master's degree programs, may not be required to submit passing GRE or MAT scores if their cumulative undergraduate GPA is a 3.0 or higher.

Provisional

Under certain conditions, a student may be admitted provisionally (for one quarter only), pending receipt of credentials. If admission requirements are not met during the quarter in which a student was admitted provisionally, registration for future quarters will be denied and the student will lose graduate credit for any graduate courses completed during the quarter.

Conditional

Students who have an undergraduate grade point average of 2.5 or better, or who have an average between 2.3 and 2.5 with 2.7 or better in the last half of undergraduate work, may be granted conditional admission.

Regular admission to the College of Education and Human Services is granted after successful completion of 12 hours of course work with a grade of B or better in each course.

Nondegree status
Persons who have a bachelor's degree may enroll in nondegree status for graduate courses without being admitted to a graduate program. If you wish to enroll in a degree program, only 50 percent of such credits may be applied to a degree program if they are appropriate, with the exception of the Department of Human Services, which only allows 12 hours of nondegree credit to be applied to one of its degree programs. Students in a nondegree status are not considered candidates in a program.

Faculty

Professor
Doug Roby, educational leadership

Associate Professors
Thomas Diamantes, educational leadership
Suzanne Franco, educational leadership
Scott Graham, educational leadership/organizational leadership
Grant Hambright, educational leadership

Assistant Professors
Yoko Miura, educational leadership

Senior Lecturer
Marguerite Veres, educational leadership/educational technology

Course of Study

Educational Leadership: Curriculum and Instruction: Teacher Leader	
Teacher Leader Course Work	**48**
EDL 710 Professional Growth and Development	1
EDL 711 School Leadership Seminar	1
EDL 712 Philosophical and Curricular Foundations	4
EDL 713 Applied Psychological Learning Theory	4
EDL 733 Professional Development for Teachers	4
EDL 751 Statistics and Research	4
EDT 757 Student Assessment	4
EDL 771 Educational Leadership Behavior	4
EDL 773 Curriculum Development for School Leaders	4
EDL 774 Analysis of Teaching	1
EDL 775 Instructional Management and Evaluation	4
EDL 776 Supervision of Instruction and Personnel	4
EDL 780 Ethics and Politics in Education	4
EDL 782 School Law	4
EDL 792 Professional Development & Change: From Theory to Practice	1
Total (minimum)	**48**

After satisfactorily completing the above requirements, students will be awarded a master's degree. Candidates may continue on after earning the MEd, CI:Teacher Leader to earn the following Administrative Licences: -Administrative Specialist: Curriculum, Instruction, and Professional Development (CIPD -Principal: Grades PK-6, Grades 4-9, Grades 5-12 -Superintendent

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Graduate Programs

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Education and Human Services - Educational Leadership: Classroom Teacher Programs - Computer Technology (MEd and Endorsement program)

Introduction

In addition to meeting requirements for admission established by the School of Graduate Studies (these requirements can be reviewed at this Web site http://www.wright.edu /academics/catalog/grad/admissions/), candidates for these degrees who do not meet the minimum cumulative GPA requirement to waive the GRE or MAT, must submit satisfactory Graduate Record Examination (GRE) or Miller Analogies Test (MAT) scores, unless otherwise noted (see Waiver of GRE/MAT).

All students considering graduate-level courses in education and human services should do so with the understanding that graduate study differs in quality expectations from undergraduate study. Graduate study requires that students be increasingly self-directed and possess strong analytical skills. Students are not guaranteed a master's degree by attending and completing courses. Exit requirements must be met in all programs.

Admission to the College of Education and Human Services is based on the candidate's written statement of purpose, consideration of undergraduate and/or graduate cumulative grade point average, submission of satisfactory scores on either the MAT, GRE, and letters of reference.

Technology Policy
For admission to the college, all College of Education and Human Services students, graduate and undergraduate, part-time and full-time, will be expected to certify that they own or have access to a computer and the Internet.

In order to meet the mission of the college "…to prepare professionals to meet the educational, leadership, and human services needs of a diverse, democratic society," it is necessary for our students to play an active role in the technological environment the college and Wright State University are creating to assist in the completion of this mission. An increasing number of classes and options will become available to students using a variety of distributed learning formats; library resources are available in a growing number of full-text formats, and global connections via telecommunications will be part of daily operations. Students preparing to become professionals in education and human service areas must demonstrate appropriate and effective skills and knowledge in technological aspects of their work.

Minimum equipment requirements are recommended by Wright State University's Computing and Telecommunications Services (CaTS). Please check the following Web Site http://www.wright.edu/cats/purchase/pcguidelines.html for current information about minimum equipment requirements.

The college supports Macintosh computers in faculty and staff offices and maintains a computer lab. Wright State University has purchased a site license for most Microsoft software (see the Web page for Wright State's Computing and Telecommunications Services, http://www.wright.edu/cats/ for details).

Tk20

In order for an Ohio college or university to prepare educators for licensure by the Ohio Department of Education, we must demonstrate that we meet the standards of the National Council for Accreditation for Teacher Education (NCATE). Programs that meet NCATE standards are approved to prepare educators to hold licenses in Ohio. NCATE standards require that all programs that lead to an educator license (including administrators, teachers, school counselors, etc.) must document how our programs prepare our candidates successfully to meet the challenges of today's schools. This documentation must be uniform and systematic across all programs and licensure areas that the college offers. In addition, the college must show how faculty, staff and school partners utilize this information systematically to continuously improve our programs over time.

Since 2006 the college has utilized a data management system called Tk20 to collect key assessments to document the achievements of our candidates and programs. In order to do this, it is necessary for our faculty to ask students to submit certain assignments electronically. There is a one-time student fee of $100 to register for the Tk20 system. This system will be available to you and your professors for a period of seven years.

Admission Standards

Admission into regular status requires an overall undergraduate grade point average of 2.7 (based on a 4.0 grading system) or an overall undergraduate grade point average of 2.5, but with a 3.0 or better for the last 90 quarter hours (60 semester hours) earned toward the undergraduate degree. Admission into this status also requires approval by a degree program.

Candidates with a grade point average of less than 2.3 on a 4.0 grading system are not ordinarily admitted to graduate school. A petition process is available to formally request admissions not having met an admission standard. Candidates for admission to certain programs in the Departments of Educational Leadership and must meet additional requirements, which include letters of reference.

Waiver of GRE/MAT

Candidates to Educational Leadership master's degree programs, may not be required to submit passing GRE or MAT scores if their cumulative undergraduate GPA is a 3.0 or higher.

Provisional

Under certain conditions, a student may be admitted provisionally (for one quarter only), pending receipt of credentials. If admission requirements are not met during the quarter in which a student was admitted provisionally, registration for future quarters will be denied and the student will lose graduate credit for any graduate courses completed during the quarter.

Conditional

Students who have an undergraduate grade point average of 2.5 or better, or who have an average between 2.3 and 2.5 with 2.7 or better in the last half of undergraduate work, may be granted conditional admission.

Regular admission to the College of Education and Human Services is granted after successful completion of 12 hours of course work with a grade of B or better in each course.

Licensure Candidate
Students who wish to complete licensure requirements at the graduate level but do not wish to pursue a graduate degree may be admitted as licensure candidates with the permission of the department in which the programs are housed. Persons pursuing a library media specialist license are required to complete the Ohio Department of Education prescribed Praxis II(s) exam for their intended area of licensure.

Nondegree Status
Persons who have a bachelor's degree may enroll in nondegree status for graduate courses without being admitted to a graduate program. If you are accepted into degree status at a later date, a maximum of one-half (50 percent) of the graduate hours required for completion of degree requirements may consist of applicable graduate courses completed in nondegree status. Students in a nondegree status are not considered to be in a program.

Faculty

Associate Professors
Roger Carlsen, educational leadership (technology)

Assistant Professors
Susan Berg, educational leadership (school library media)

Senior Lecturer
Marguerite Veres, educational leadership (technology)

Course of Study

Classroom Teacher: Computer/Technology Education

*(see note regarding endorsement at the end of this program of study)

Introductory Course Work 14

To be taken in any sequence during the first 24 credit hours of graduate education course work: (select one from each category)

EDL 712 Philosophical and Curricular Foundations	4
OR	
EDL 713 Applied Psychological Learning Theory	4
EDL 751 Statistics and Research for Education	4
EDL 773 Curriculum Development for School Leaders	4

EDT 700 Entry Seminar for Educational Technology	2
EDT 716 Building On Line Applications	4
EDT 751 Media Literacy I	4
EDT 782 Developing Multimedia Productions	4
EDT 786 Educational Applications of Computers	4
EDT 817 Issues in Telecommunication	4
EDT 890 Internship	4
EDT Electives	8
Total	46

*All candidates seeking endorsement in computer/technology must provide evidence that the following foundations have been attained: basis technology operations and concepts (use computer operating systems and user interfaces to run programs, access, generate, and manipulate data, and to report results; evaluate performance of hardware and software components of computer systems and apply basic troubleshooting strategies as needed); personal and professional use of technology (apply tools for enhancing productivity and professional growth, use technology in communicating, collaborating, conducting research, and solving problems; includes equitable, ethical, and legal use of computer/technology resources); and application of technology instruction (teach computer/technology applications and use technology to support content areas).

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Graduate Programs

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Education and Human Services - Educational Leadership: Classroom Teacher Programs (Library Media)

Introduction

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Technology Policy
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Waiver of GRE/MAT

Candidates to Educational Leadership master's degree programs, may not be required to submit passing GRE or MAT scores if their cumulative undergraduate GPA is a 3.0 or higher.

Provisional

Under certain conditions, a student may be admitted provisionally (for one quarter only), pending receipt of credentials. If admission requirements are not met during the quarter in which a student was admitted provisionally, registration for future quarters will be denied and the student will lose graduate credit for any graduate courses completed during the quarter.

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Regular admission to the College of Education and Human Services is granted after successful completion of 12 hours of course work with a grade of B or better in each course.

Licensure Candidate
Students who wish to complete licensure requirements at the graduate level but do not wish to pursue a graduate degree may be admitted as licensure candidates with the permission of the department in which the programs are housed. Persons pursuing a library media specialist license are required to complete the Ohio Department of Education prescribed Praxis II(s) exam for their intended area of licensure.

Nondegree Status
Persons who have a bachelor's degree may enroll in nondegree status for graduate courses without being admitted to a graduate program. If you are accepted into degree status at a later date, a maximum of one-half (50 percent) of the graduate hours required for completion of degree requirements may consist of applicable graduate courses completed in nondegree status. Students in a nondegree status are not considered candidates in a program.

Faculty

Associate Professors
Roger Carlsen, educational leadership (technology)

Assistant Professors
Susan Berg, educational leadership (school library media)

Senior Lecturer
Marguerite Veres, educational leadership (technology)

Course of Study

Classroom Teacher: Library/Media

Introductory Course Work 14

To be taken in any sequence during the first 24 credit hours of graduate education course work: (select one from each category)

Foundations (select one) 4

EDL 712 Philosophical and Curricular Foundations

EDL 713 Applied Psychological Learning Theory

Statistics and Research 4

EDL 751 Statistics and Research for Education

Curriculum 4

EDL 773 Curriculum Development for School Leaders

Seminar 2

To be taken as a prerequisite to other EDT course work:

EDT 700 Entry Seminar for Educational Technology

Program Concentration-Library/Media* 32-33

*additional hours needed for Multi-Age licensure

EDT 731 School Library Media I: Administration 5 5

EDT 732 School Library Media II: Collection Development 5 5

EDT 733 School Library Media III: Teaching Information Literacy Skills 5 5

EDT 751 Educational Use of Video Technology 4 4

EDT 721 Cataloging and Classification 4 4

EDT 763 Young Adult Literature 4 4

OR

ED 721 Literature for Elementary Children 3 3

EDT 715 Internet and Database Searching 2 2

ED 716 Foundation of Reading Instruction 3 3

EDT 734 Internship 1 1

Required Exit Course 2
To be taken at the end of the program of study.

EDT 799 Exit Seminar in Educational Technology 2 2

A Department comprehensive portfolio will be required during the final quarter of course work on the program of study.

Total 48-49

*Students holding a valid teaching license may earn a Multi-Age Library/Media license by completing 56 hours of course work and passing the Praxis II exam for library media. Library/Media concentration course work can be applied toward these hours

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Graduate Programs

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Education and Human Services - Educational Leadership: Leadership Development

Introduction

The Master of Science in Organizational Leadership (MSLD) program addresses the principles of individual-based leader development within the discipline of leadership, focussing on processes that build the capacity of groups. The major goal of the program is to prepare candidates capable of applying knowledge, critical analysis, improvement strategies, and research to common challenges encountered in business, community, educational and nonprofit organizations. This program focuses on meeeting students' varying needs through relevant content and innovative, real-worl experiences maximizing their opportunities for both personal and organizational transformation. The curriculum includes integrated hands-on experiences to factilitate the mastery and application of key leadership competencies.

Admission

In addition to meeting requirements for admission established by the School of Graduate Studies (these requirements can be reviewed at this Web site http://www.wright.edu /academics/catalog/grad/admissions/), candidates for this degree who do not meet the minimum cumulative GPA requirement to waive the GRE or MAT, must submit satisfactory Graduate Record Examination or Miller Analogies Test scores, unless otherwise noted (see Waiver of GRE/MAT).

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Admission to the College of Education and Human Services is based on the candidate's written statement of purpose, consideration of undergraduate and/or graduate cumulative grade point average, submission of satisfactory scores on either the MAT, GRE, and letters of reference and interview.

Admission Standards
Admission into regular status requires an overall undergraduate grade point average of 2.7 (based on a 4.0 grading system) or an overall undergraduate grade point average of 2.5, but with a 3.0 or better for the last 90 quarter hours (60 semester hours) earned toward the undergraduate degree. Admission into this status also
requires approval by a degree program.

Candidates with a grade point average of less than 2.3 on a 4.0 grading system are not

ordinarily admitted to graduate school. A petition process is available to formally request admissions not having met an admission standard. Candidates for admission to certain programs in the Departments of Educational Leadership and must meet additional requirements, which include letters of reference.

Waiver of GRE/MAT
Candidates to Educational Leadership master's degree programs, may not be required to submit passing GRE or MAT scores if their cumulative undergraduate GPA is a 3.0 or higher.

Provisional
Under certain conditions, a student may be admitted provisionally (for one quarter only), pending receipt of credentials. If admission requirements are not met during the quarter in which a student was admitted provisionally, registration for future quarters will be denied and the student will lose graduate credit for any graduate courses completed during the quarter.

Conditional
Students who have an undergraduate grade point average of 2.5 or better, or who have an average between 2.3 and 2.5 with 2.7 or better in the last half of undergraduate work, may be granted conditional admission.

Regular admission to the College of Education and Human Services is granted after successful completion of 12 hours of course work with a grade of B or better in each course.

Nondegree Status
Persons who have a bachelor's degree may enroll in nondegree status for graduate courses without being admitted to a graduate program. If you are accepted into degree status at a later date, a maximum of one-half (50 percent) of the graduate hours required for completion of degree requirements may consist of applicable graduate courses completed in nondegree status.

Technology Policy
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Services, http://www.wright.edu/cats/ for details).

Faculty

Associate Professors
Scott Graham, organizational leadership
Jill L. Lindsey (chair) organizational leadership

Assistant Professor
Mindy McNutt, organizational leadership

Lecturer
Brenda Kraner, organizational leadership

Course of Study

Educational Leadership: Leadership Development

Master's Degree Coursework	**48**
LDR 701 Theories of Organizing, Leading and Change	4
LDR 710 Developing Interpersonal Competencies	4
LDR 705 Moral Leadership: Ethics, Social Justice, and Authenticity	4
LDR 707 Teaming, Communication, and Collaboration in a Global Society	4
LDR 703 Building Leadership Capacity	4
LDR 709 Organizational Intentionally and Sustainability	4
LDR 720 Emerging Issues in Leadership	4
LDR 730 Quantitative and Qualitative Methods of Research	4
LDR 740 Reviewing Leadership Literature	4
LDR 750 Research Design	4
LDR 760 Research Project **OR**	8
LDR 999 Thesis	8

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Graduate Programs

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Education and Human Services - Educational Leadership: Student Affairs in Higher Education and Sports Management Certificate

Admission

In addition to meeting requirements for admission established by the School of Graduate Studies (these requirements can be reviewed at this Web site http://www.wright.edu /academics/catalog/grad/admissions/), candidates for these degrees who do not meet the minimum cumulative GPA requirement to waive the GRE or MAT, must submit satisfactory Graduate Record Examination (GRE--800) or Miller Analogies Test (MAT--380) scores, unless otherwise noted (see Waiver of GRE/MAT). A professional goal statement, two professional letters of references and an interview with program faculty are also required of all applicants for this program.

All students considering graduate-level courses in education and human services should do so with the understanding that graduate study differs in quality expectations from undergraduate study. Graduate study requires that students be increasingly self-directed and possess strong analytical skills. Students are not guaranteed a master's degree by attending and completing courses. Exit requirements must be met in all programs.

Admission to the College of Education and Human Services is based on the candidate's written statement of purpose, consideration of undergraduate and/or graduate cumulative grade point average, submission of satisfactory scores on either the MAT, GRE, and letters of reference.

Technology Policy
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Admission Standards
Admission into regular status requires an overall undergraduate grade point average of 2.7 (based on a 4.0 grading system) or an overall undergraduate grade point average of 2.5, but with a 3.0 or better for the last 90 quarter hours (60 semester hours) earned toward the undergraduate degree. Admission into this status also requires approval by a degree program.

Candidates with a grade point average of less than 2.3 on a 4.0 grading system are not ordinarily admitted to graduate school. A petition process is available to formally request admissions not having met an admission standard. Candidates for admission to certain programs in the Departments of Educational Leadership and must meet additional requirements, which include letters of reference.

Waiver of GRE/MAT
Candidates to Educational Leadership master's degree programs, may not be required to submit passing GRE or MAT scores if their cumulative undergraduate GPA is a 3.0 or higher.

Provisional
Under certain conditions, a student may be admitted provisionally (for one quarter only), pending receipt of credentials. If admission requirements are not met during the quarter in which a student was admitted provisionally, registration for future quarters will be denied and the student will lose graduate credit for any graduate courses completed during the quarter.

Conditional
Students who have an undergraduate grade point average of 2.5 or better, or who have an average between 2.3 and 2.5 with 2.7 or better in the last half of undergraduate work, may be granted conditional admission.

Regular admission to the College of Education and Human Services is granted after successful completion of 12 hours of course work with a grade of B or better in each course.

Nondegree Status
Persons who have a bachelor's degree may enroll in nondegree status for graduate courses without being admitted to a graduate program. If you are accepted into degree status at a later date, a maximum of one-half (50 percent) of the graduate hours required for completion of degree requirements may consist of applicable graduate courses completed in nondegree status. Students in nondegree status are not considered to be candidates in a program.

Faculty

Professors
Charles W. Ryan, higher education

Associate Professors
Scott Graham (chair), educational leadership/organizational leadership

Instructors
Michael Cusak, educational leadership/sports management certificate
Joanne Risacher, educational leadership/student affairs in higher education

Adjunct faculty
Dan Abrahamowicz, vice president, student affairs
Joseph Berthiaume, associate director, residence services
Ed Busher, dean of student affairs and enrollment management, clark state community college
Rick Danals, director, student activities

Program Description

Student Affairs in Higher Education - Administration (SAHE)

The Student Affairs in Higher Education program provides education
practical experiences for individuals interested in careers in student services. The emphasis of this program is on the administrative perspective of student services that support student development. The Student Affairs in Higher Education program consistently graduated most entering students within two years of entry.

The primary mission of this program is to prepare students for leadership roles in higher education student affairs. Integrating theory and practice, maintaining strong interdisciplinary relationships, fostering high-quality research, and sponsoring activities that enhance the development of professionals are high priorities of the program.

Sports Management Certificate (SMP)
The Wright State University Sports Management Program (SMP) provides a distinctive opportunity for students enrolled in the M.A. or M.Ed. Student Affairs in Higher Education graduate program to earn a certificate in the sports management field. This SMP is also available to those enrolled in other master's degree programs and for those who seek such certification without pursuing a master's degree. The SMP provides students with skills to effectively manage a variety of sport-related enterprises. Graduates of the program may pursue careers in intercollegiate and high school athletic departments, public and private recreational facilities, sport marketing firms, professional sport organizations, and other organizations in sports management.

The SMP is designed to be flexible enough to provide certificate holders with a variety of professional options. The growth of sport and recreation related to interests in education and in the public and private sectors provides evidence of the need for qualified professional managers.

The SMP is integrated into the Masters in Student Affairs in Higher Education program through existing courses and new courses. Instructors for the new courses include faculty from the College of Education and Human Services, College of Business, and professionals from administrative departments and intercollegiate organizations.

Program Curriculum
The SMP will offer three academic options for prospective students:
1. For students enrolled in the Student Affairs in Higher Education Masters Program, the SMP will be available as a 22-hour certificate. Standards for admission to the graduate program apply.

2. The SMP will also be available as a 22-hour certificate for those students currently enrolled in graduate programs other than Student Affairs in Higher Education. Standards for admissions to the respective graduate programs apply.

3. The SMP will be available to those who choose to pursue a certificate in sports management without enrolling in a graduate program. This is a 22-hour program and admissions standards include a bachelor's degree from an accredited institution of higher education. Non-degree students must also apply to the Department of Educational Leadership for admission to the certificate program. The department admission decision will be based on the students overall academic preparation and suitability of career plans.

Course of Study

Educational Leadership: Student Affairs in Higher Education - Administration (SAHE)

Foundation Course Work	**27**
EDL 661 Diversity Issues	2
EDL 760 Introduction to Student Affairs in Higher Education	4
EDL 761 Student Development Theories and Their Applications	4
EDL 763 Campus Ecology	4
EDL 751 Educational Statistics and Research	4
EDL 765 Practicum in Student Affairs in Higher Education	4
EDL 767 Internship in Student Affairs in Higher Education	5
Professional Requirements	**22**
EDL 662 Workshop Design	2
EDL 762 Student Affairs Administration in Higher Education	4
EDL 764 Program Evaluation and Assessment in Student Affairs in Higher Education	4
EDL 768 Finance and Budget Management in Student Affairs in Higher Education	4
EDL 920 History and Philosophy of Higher Education in the U.S.	4
EDL 922 Law of Higher Education	4

Required for M.A. only

EDL 759 Qualitative Research	4
EDL 999 Thesis*	3

*May be repeated for additional credit hours to fulfill electives with advisor approval.

Advised Electives	**9 M.A.** **16 M.Ed.**
Total MEd	**65**
MA	**58**

Note: Students in the SAHE master's program may elect to complete a Sports Management Certificate as a part of the master's program, if interested. See sports management description (below) for details regarding the certificate.

Curriculum – Certification in Sports Management

Foundation

EDL 929 The Role of Athletics in Higher Education	4
SPM 708 Sports and Events Marketing	4
SPM 701 Current Issues in American Sports	3
EDL 767 Internship	5
Total	**16**

Content (6 credit hours required)

SPM 702 Finance, Law and Sports Management	4
SPM 703 Academic Support Service for Studeent Athletes	2
SPM 704 Recreation Management	2

SPM 705 Compliance and Regulation	2
SPM 706 Facilities and Events Management	2
SPM 707 Media Relations in Sports	2
Total	6
Certificate Completion	**22**

Notes

(1) Raj Soin College of Business course, in development.

(2) Offered every other year as a requirement for those not in the Student Affairs in Higher Education graduate degree program.

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Education and Human Services - Human Services (Counseling) Programs

Introduction

The Department of Human Services' programs share a common curriculum of courses associated with five different counseling concentrations. Students may choose to obtain a M.A. or M.S. degree in counseling with a specialization in mental health counseling; business and organizational management counseling; community counseling; marriage and family counseling; counseling exceptional children; or students may choose to obtain either a M.R.C. degree with a specialization in severe disabilities or chemical dependency, or a M.Ed. in school counseling.

Students entering the Human Services Department must complete a program of study that includes a general core curriculum and requirements specific for their area of concentration. Students plan their program of study in consultation with their faculty advisor, and elective courses may be chosen as appropriate.

Students must pass a written comprehensive examination at the conclusion of their plan of study. Department faculty will endorse students completing all requirements of their degree program.

The Council for Accreditation of Counseling and Related Educational Programs (CACREP) has conferred accreditation to the following program areas in the department: mental health counseling; community counseling and school counseling (M.Ed.). The Council on Rehabilitation Education (CORE) has accredited both rehabilitation counseling programs: severe disabilities and chemical dependency.

Admission

In addition to meeting requirements for admission established by the School of Graduate Studies (these requirements can be reviewed at this Web site http://www.wright.edu /academics/catalog/grad/admissions/), candidates for these degrees who do not meet the minimum cumulative GPA requirement of 3.3 to waive the GRE or MAT, must submit satisfactory Graduate Record Examination (GRE) or Miller Analogies Test (MAT) scores, unless otherwise noted (see Waiver of GRE/MAT).

All students considering graduate-level courses in human services should do so with the understanding that graduate study differs in quality expectations from undergraduate study. Graduate study requires that students be increasingly self-directed and possess strong analytical skills. Students are not guaranteed a master's degree by attending and completing courses. Exit requirements must be met in all programs.

Admission to the College of Education and Human Services is based on the candidate's

written statement of purpose, consideration of undergraduate and/or graduate cumulative grade point average, submission of satisfactory scores on either the MAT, GRE, or other required examination, and in some cases, letters of reference and a personal interview (see Waiver of GRE/MAT).

Technology Policy
For admission to the college, all College of Education and Human Services, graduate students part-time and full-time, will be expected to certify that they own or have access to a computer and the Internet.

In order to meet the mission of the college "…to prepare professionals to meet the Educational, leadership and human services needs of a diverse, democratic society," it is necessary for our students to play an active role in the technological environment the college and Wright State University are creating to assist in the completion of this mission. An increasing number of classes and options will become available to students using a variety of distributed learning formats; library resources are available in a growing number of full-text formats, and global connections via telecommunications will be part of daily operations. Students preparing to become professionals in education and human service areas must demonstrate appropriate and effective skills and knowledge in technological aspects of their work.

Minimum equipment requirements are recommended by Wright State University's computing and Telecommunications Services (CaTS). Please check the following Web Site http://www.wright.edu/cats/purchase/pcguidelines.html for current information about minimum equipment requirements.

The college supports Macintosh computers in faculty and staff offices and maintains a computer lab. Wright State University has purchased a site license for most Microsoft software (see the Web page for Wright State's Computing and Telecommunications Services, http://www.wright.edu/cats/ for details).

Admission Standards
Admission into regular status requires an overall undergraduate grade point average of 2.7 (based on a 4.0 grading system) or an overall undergraduate grade point average of 2.5, but with a 3.0 or better for the last 90 quarter hours (60 semester hours) earned toward the undergraduate degree. Admission into this status also requires approval by a degree program.

Candidates with a grade point average of less than 2.3 on a 4.0 grading system are not ordinarily admitted to graduate school. A petition process is available to formally request admissions not having met an admission standard. Candidates for admission to the Department of Human Services must meet additional requirements, which include three letters of reference, a personal interview, and a writing sample.

Waiver of GRE/MAT
Candidates to Human Services programs may not be required to submit passing GRE or MAT scores if their cumulative undergraduate GPA is a 3.3 or higher.

Provisional
Under certain conditions, a student may be admitted provisionally (for one quarter only), pending receipt of credentials. If admission requirements are not met during the quarter in which a student was admitted provisionally, registration for future quarters will be denied and the student will lose graduate credit for any graduate courses completed during the quarter.

Conditional
Students who have an undergraduate grade point average of 2.5 or better, or who have an

average between 2.3 and 2.5 with 2.7 or better in the last half of undergraduate work, may be granted conditional admission. Regular admission to the College of Education and Human Services is granted after successful completion of 12 hours of course work with a grade of B or better in each course.

Nondegree Status
Persons who have a bachelor's degree may enroll in nondegree status for graduate courses without being admitted to a graduate program. If you wish to enroll in a degree program, only 12 hours of such credits may be applied to a degree program in the Department of Human Services. Students in a nondegree status are not considered to be a candidate in a program.

Degree Requirements

Licensure Requirements for Professional Counselors (PC)

Students seeking to pursue eligibility for licensure as a professional counselor (PC) must complete a minimum of 90 hours. These 90 hours of courses must meet the state minimum requirement of 11 core areas of counselor training and five clinical areas. The 11 core areas include Counseling Theory and Practice (RHB 701); Techniques of Counseling (CNL 863); Counseling Practicum (CNL 864, 865 or RHB 865); Social and Cultural Foundations in Counseling (CNL 973); Human Growth and Development (CNL 971); Group dynamics, processing and counseling (CNL 667 or 767); Lifestyle and career development (CNL 762); Appraisal of the individual (RHB 705); Research and Evaluation (EDL 751) - Human Services section: Professional; legal, and ethical issues (CNL 972); and Counseling Internship (CNL 867, 954 or RHB 801).

The five clinical areas include the following courses: Personality Theory and Abnormal Behavior (CNL 950); Evaluation of Mental and Emotional Status (CNL 951); Diagnosis of Mental and Emotional Disorders (CNL 952); Methods of Intervention (depending on the student's major one of the following courses: CNL 779, CNL 664, CNL 773,CNL 769, CNL 778, CNL 961, RHB 704, RHB 731; Treatment of Mental and Emotional Disorders (CNL 953).

Licensure Requirements for Professional Clinical Counselors (PCC)
Students seeking to pursue eligibility for licensure as a professional counselor with the clinical endorsement (PCC) must fulfill all the academic requirements listed in the previous section, as well as complete 2 years of post-masters clinical supervision.

Faculty

Professors

Richard A. Wantz, counselor education

Associate Professors

Stephen B. Fortson (chair), counselor education
Phyllis A. Henderson, counselor education
Mary Ann Jones, counselor education
Joseph Keferl, rehabilitation counseling
Donna Tromski-Klingshirn, counselor education

Assistant Professors

Eileen F. Self, counselor education

Course of Study

Counseling: Business and Organizational Management

Introductory Course Work	**12**
RHB 701 Counseling Theory and Practice	4
*CNL 863 Techniques of Counseling	4
EDL 751 Statistics and Research for Education (Human Services taught section)	4
*Unless permission is granted, you must take RHB 701 prior to or concurrent with CNL 863.	
Professional Requirements	**40**
CNL 667 Group Background and Theory	4
CNL 762 Career Development and Information Services	4
CNL 864 Practicum	4
CNL 971 Counseling for Life-Span Development	4
CNL 972 Legal, Professional, and Ethical Issues in the Human Services	4
CNL 973 Social and Cultural Foundations in Counseling	4
MBA 740 Legal and Ethical Decision Making	4
MBA 750 Leading Teams and Organizations	4
MGT 750 Organizational Development and Change	4
RHB 705 Behavioral Assessment	4
Electives	**8**
Total	**60**

Counseling: Exceptional Children

Introductory Course Work	**12**
RHB 701 Counseling Theory and Practice	4
*CNL 863 Techniques of Counseling	4
EDL 751 Statistics and Research for Education (Human Services taught section)	4
*Unless permission is granted, you must take RHB 701 prior to or concurrent with CNL 863.	
Professional Requirements (Counseling)	**23**
CNL 662 Problems in Student Personality and Development	4
OR	
CNL 663 Mental Health I	4
CNL 667 Group Background and Theory	4
OR	
CNL 767 Group Processes in Counseling and Guidance	4
CNL 769 Techniques of Child Counseling	4
OR	
CNL 778 Techniques of Play Therapy	4
CNL 865 Individual and Group Practicum with Exceptional Children	4
CNL 961 Counseling the Gifted	3
CNL 972 Legal, Professional, and Ethical Issues in Human Services	4
Professional Requirements (Special Education)	**12**
EDS 652 Education of Individuals with Physical, Sensory, and Motor Disorders	4
EDS 659 Communication and Consultation Skills for Special Educators	4
AND/OR	
EDS 722 Education of Students with Gifted Educational Needs	4
Recommended Electives	**20**
Total	**67**

Community Counseling

Introductory Course Work	**12**

RHB 701 Counseling Theory and Practice	4
*CNL 863 Techniques of Counseling	4
EDL 751 Statistics and Research for Education (Human Services section)	4
Professional Requirements	**56**
CNL 663 Mental Health I	4
CNL 664 Crisis Intervention Counseling	4
CNL 667 Group Background and Theory	4
CNL 767 Group Process in Counseling and Guidance	4
CNL 762 Career Development and Information Services	4
CNL 773 Mental Health II	4
CNL 779 Marriage and Family Counseling	4
CNL 865 Individual and Group Practicum	4
CNL 867 Internship: Community Counseling	12
CNL 971 Counseling for Life-Span Development	4
CNL 972 Legal, Professional, and Ethical Issues in Human Services	4
CNL 973 Social and Cultural Foundations in Counseling	4
RHB 705 Behavioral Assessment	4
Advised Electives	**4**
CNL 670 Counseling Workshop: Human Sexuality	1-3
CNL 770 Independent Study and Minor Problems	1-3
CNL 778 Techniques of Play Therapy	4
CNL 780 Systems Theory and Family Counseling	4
CNL 781 Advanced Techniques of Family Counseling	4
CNL 782 Techniques of Marital Counseling	4
CNL 961 Counseling the Gifted	3
RHB 730 Epidemiology of Chemical Dependency	4
RHB 731 Treatment Approaches in Chemical Dependency	4
Total	**72**

Counseling: Marriage and Family	
Introductory Course Work	**12**
RHB 701 Counseling Theory and Practice	4
*CNL 863 Techniques of Counseling	4
EDL 751 Statistics and Research for Education (Human Services section)	4

*Unless permission is granted, you must take RHB 701 prior to or concurrent with CNL 863.

Professional Requirements	**55**
CNL 762 Career Development and Information Services	4
CNL 779 Marriage and Family Counseling	4
CNL 780 Systems Theory and Family Counseling	4
CNL 781 Advanced Techniques of Family Counseling	4
CNL 782 Techniques of Marital Counseling	4
CNL 670 Counseling Workshop: Human Sexuality and Counseling	3
CNL 663 Mental Health I	4
CNL 971 Counseling for Life-Span Development	4
CNL 972 Legal, Professional, and Ethical Issues in the Human Services	4
CNL 973 Social and Cultural Foundations in Counseling	4
CNL 867 Internship: Marriage and Family Counseling	12
RHB 705 Behavioral Assessment	4
Electives†	**4**

†CNL 667 or CNL 767 is recommended for this major's elective in order to meet Ohio PC requirements. Students are also encouraged to take CNL 865 Practicum, which is also a requirement for PC licensure.

Total	**71**

Mental Health Counseling

Introductory Course Work	**12**
RHB 701* Counseling Theory and Practice	4
CNL 863* Techniques of Counseling	4
EDL 751 Statistics and Research for Education (Human Services section)	4

*Unless Permission is granted, RHB 701 must be taken prior to or concurrently with CNL 863

Professional Requirement, Courses to be taken after Introductory Course Work	**40**
RHB 705 Behavior Assessment (EDL 751 is a prerequisite)	4
CNL 663 Mental Health I	4
CNL 664 Crisis Intervention Counseling	4
CNL 667 Group Background and Theory	4
OR	
CNL 767 Group Process in Counseling and Guidance	4
CNL 762 Career Development and Information Services	4
CNL 773 Mental Health II	4
CNL 779 Marriage and Family Counseling	4
CNL 971 Counseling for Life-Span Development	4
CNL 972 Legal, Professional, and Ethical Issues in the Human Services	4
CNL 973 Social and Cultural Foundations in Counseling	4
Clinical Instruction, Courses to be taken after Professional Requirement	**16**
CNL 865 Individual and Group Practicum	4
CNL 867 Internship, Mental Health Counseling**	12

**Mental Health Counseling Internship is 900 Clock Hours

Courses to be completed after Professional Requirement and during or after Clinical Instruction	**17**
CNL 950 Personality Theory & Psychopathology	4
CNL 951 Clinical assessment in Counseling Practice	4
CNL 952 Diagnosis and Clinical Counseling Practice	4
CNL 953 Case Formulation and Clinical Intervention	4
CNL 670 Meeting the Challenge of Supervision or similar course	1
Advised Electives	**5**
CNL 860 Advanced Seminar in Counseling Research	1-6
RHB 730 Epidemiology of Chemical Dependency	4
Total	**90**

Rehabilitation Counseling: Chemical Dependency

Introductory Course Work	**12**
RHB 701 Counseling Theory and Practice	4
*CNL 863 Techniques of Counseling	4
EDL 751 Statistics and Research for Education (Human Services section)	4

*Unless permission is granted, you must take RHB 701 prior to or concurrent with CNL 863.

Professional Requirements	**62**

CNL 663 Mental Health I	4
CNL 779 Marriage and Family Counseling	4
CNL 667 Group Background and Theory	4
OR	
CNL 767 Group Processes in Counseling and Guidance	4
CNL 973 Social and Cultural Foundations in Counseling	4
RHB 700 Counseling: Severe Disability Foundations of Vocational Rehabilitation	4
RHB 704 Psychological Adjustment: Severe Disability	4
RHB 705 Behavioral Assessment	4
RHB 707 Medical Assessment: Chemical Dependency	4
RHB 711 Vocational Evaluation and Job Placement Techniques	4
RHB 720 Counseling: Severe Disability Case Management in Vocational Rehabilitation	4
RHB 730 Epidemiology of Chemical Dependency	4
RHB 731 Treatment Approaches in Chemical Dependency	4
†RHB 865 Rehabilitation Counseling Practicum	4
†RHB 801 Internship: Chemical Dependency	10
Total	**74**

Exit Requirements: Students must pass a written comprehensive examination.

Rehabilitation Counseling: Severe Disabilities

Introductory Course Work	**12**
RHB 701 Counseling Theory and Practice	4
*CNL 863 Techniques of Counseling	4
EDL 751 Statistics and Research for Education (Human Service section)	4

*Unless permission is granted, you must take RHB 701 prior to or concurrent with CNL 863.

Professional Requirements	**58**
CNL 667 Group Background and Theory	4
OR	
CNL 767 Group Processes in Counseling and Guidance	4
CNL 762 Career Development and Information Services	4
CNL 971 Counseling for Life-Span Development	4
CNL 972 Legal, Professional, and Ethical Issues in the Human Services	4
CNL 973 Social and Cultural Foundations in Counseling	4
RHB 700 Counseling: Severe Disability Foundations of Vocational Rehabilitation	4
RHB 702 Medical Assessment	4
RHB 704 Psychological Adjustment: Severe Disability	4
RHB 705 Behavioral Assessment	4
RHB 711 Vocational Evaluation and Job Placement Techniques	4
RHB 720 Counseling: Severe Disability Case Management in Vocational Rehabilitation	4
RHB 865 Rehabilitation Counseling Practicum	4
RHB 801 Internship: Severe Disability	10
Electives	**4**
Students' choice	
Total	**74**

Graduate School
E344 Student Union
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E-mail: wsugrad@wright.edu

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Graduate Programs

Back to Program List

Education and Human Services - Principalship (License - Grades PK-6, Grades 4-9, Grades 5-12)

Admission

Technology Policy
For admission to the college, all College of Education and Human Services students, graduate and undergraduate, part-time and full-time, will be expected to certify that they own or have access to a computer and the Internet.

In order to meet the mission of the college "…to prepare professionals to meet the educational, leadership, and human services needs of a diverse, democratic society," it is necessary for our students to play an active role in the technological environment the college and Wright State University are creating to assist in the completion of this mission. An increasing number of classes and options will become available to students using a variety of distributed learning formats; library resources are available in a growing number of full-text formats, and global connections via telecommunications will be part of daily operations. Students preparing to become professionals in education and human service areas must demonstrate appropriate and effective skills and knowledge in technological aspects of their work.

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Tk20
In order for an Ohio college or university to prepare educators for licensure by the Ohio Department of Education, we must demonstrate that we meet the standards of the National Council for Accreditation for Teacher Education (NCATE). Programs that meet NCATE standards are approved to prepare educators to hold licenses in Ohio. NCATE standards require that all programs that lead to an educator license (including administrators, teachers, school counselors, etc.) must document how our programs prepare our candidates successfully to meet the challenges of today's schools. This documentation must be uniform and systematic across all programs and licensure areas that the college offers. In addition, the college must show how faculty, staff and school partners utilize this information systematically to continuously improve our programs over time.

Since 2006 the college has utilized a data management system called Tk20 to collect key

assessments to document the achievements of our candidates and programs. In order to do this, it is necessary for our faculty to ask students to submit certain assignments electronically. There is a one-time student fee of $100 to register for the Tk20 system. This system will be available to you and your professors for a period of seven years.

Admission Standards
This licensure program is available to candidates who have completed the M.Ed. Curriculum & Instruction: Teacher leader program. In addition, students must meet requirements for admission established by the School of Graduate Studies.

Licensure Candidate
Students who wish to complete licensure requirements at the graduate level but do not wish to pursue a graduate degree may be admitted as licensure candidates with the permission of the department in which the programs are housed. Persons pursuing an administrative specialist or principal license are required to complete the Ohio Department of Education prescribed Praxis II exam(s) for their intended area of licensure.

Nondegree Status
Persons who have a bachelor’s degree may enroll in nondegree status for graduate courses without being admitted to a graduate program. If you wish to enroll in a degree program, only 50 percent of such credits may be applied to a degree program if they are appropriate, with the exception of the Department of Human Services, which only allows 12 hours of nondegree credit to be applied to one of its degree programs. Students in nondegree status are not considered candidates in a program.

Faculty

Professor
Doug Roby, educational leadership

Associate Professors
Thomas Diamantes, educational leadership
Scott Graham (chair), educational leadership
Grant Hambright, educational leadership

Assistant Professors
Suzanne Franco, educational leadership
Yoko Miura, educational leadership

Senior Lecturer
Margueite Veres, educational leadearship

Course of Study

Principal Courses Licensure after Master's degree (C&I: Teacher Leader)	**26**
EDL 991 Advanced Semimar in Educational Leadership	4
EDL 995 Advanced Institute for Educational Leadership	4
EDL 871 Management of a School	4
EDL 872 Staff Personnel Administration	4
EDL 873 Pupil Personnel Administration	4
EDL 874 School Business Management	4
EDL 870 Internship I: Principal*	4
EDL 890 Internship II: Principal*	4

(*equivalent of six months during the principal program)	4
Total for Principal Licensure program (with C&I: Teacher Leader)	**74**

Graduate School
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Graduate Programs

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Education and Human Services - Pupil Personnel Services Program (School Counselor)

Introduction

The student personnel services program, leading to the Master of Arts or Master of Education degree, offers a concentration in school counseling. This program is designed for students with professional backgrounds in education.

Students are expected to take electives in areas other than counseling and guidance. The student and the advisor mutually decide upon elective courses. Graduate courses in the behavioral sciences (anthropology, psychology, sociology) are suggested electives. Depending upon the student's background and educational objectives, other electives may be more appropriate.

Students entering the program for counselor preparation must complete both the admission procedures and the appropriate graduate core requirements for their area of concentration and complete an exit evaluation, which is a written comprehensive examination.

The following requirements and procedures must be met by students applying for the M.Ed. or M.A. degrees within student personnel services: complete appropriate graduate core requirements for area of concentration; complete an interview with the assigned advisor and file a planned program of study; demonstrate proficiency with specified counseling behaviors during CNL 863; and complete the application for a counseling practicum during the first week of the term preceding the quarter in which the practicum is offered, except for fall quarter for which application is made during the first two weeks of spring quarter.

Licensure Requirements for School Counselors (Ohio Department of Education)

Students seeking to pursue eligibility for licensure as a school counselor must complete coursework in core areas of counseling training. These core areas include Counseling Theory and Practice (RHB 701), Techniques of Counseling (CNL 863), Counseling Practicum (CNL 865), Social and Cultural Foundations in Counseling (CNL 973), Counseling for Life Span Development (CNL 971), Group Processes (CNL 667 or CNL 767), Career Development and Information Services (CNL 762), Behavioral Assessment (RHB 705), Statistics and Assessment (EDL 751), Legal, Professional, and Ethical Issues in Human Services (CNL 972), Exceptionality (EDS 655), Curriculum Theory and Practice (EDL 773), Program Development, Implementation, and Evaluation in School Counseling (CNL 765), and Counseling Internship (CNL 867). Students must pass the Praxis II specialty area exam and also apply for licensure to the Ohio Department of Education.

Admission

In addition to meeting requirements for admission established by the School of Graduate Studies, candidates for these degrees who do not meet the minimum cumulative GPA requirement to waive the GRE or MAT, must submit satisfactory Graduate Record Examination (GRE) or Miller Analogies Test (MAT) scores, unless otherwise noted (see Waiver of GRE/MAT). The Adolescence Young Adult, Multi-Age, and Middle Childhood initial teacher licensure programs require passing scores on the state of Ohio's mandated

Praxis II Specialty (Content) Area Exam(s). Contact the college's Office of Student Services or visit their Web site at www.cehs.wright.edu/ss/ to learn more about the Praxis II exams.

All students considering graduate-level courses in education and human services should do so with the understanding that graduate study differs in quality epectations from undergraduate study. Graduate study requires that students be increasingly self-directed and possess strong analytical skills. Students are not guaranteed a master's degree by attending and completing courses. Exit requirements must be met in all programs.

Admission to the College of Education and Human Services is based on the candidate's written statement of purpose, consideration of undergraduate and/or graduate cumulative grade point average, submission of satisfactory scores on either the MAT, GRE, or other required examination, and in some cases, letters of reference and a personal interview (see Waiver of GRE/MAT).

Technology Policy
For admission to the college, all College of Education and Human Services students, graduate and undergraduate, part-time and full-time, will be expected to certify that they own or have access to a computer and the Internet.

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Admission Standards
Candidates with a grade point average of less than 2.3 on a 4.0 grading system are not ordinarily admitted to graduate school. A petition process is available to formally request admissions not having met an admission standard. Candidates for admission to the Department of Human Services must meet additional requirements, which include three letters of reference, a personal interview, and a writing sample. Candidates for admission to certain programs in the Departments of Educational Leadership and Teacher Education

must meet additional requirements, which include letters of reference, a personal interview, a writing sample, a self-assessment instrument, and Praxis II specialty area exams.

Waiver of GRE/MAT
Candidates to Human Services programs may not be required to submit passing GRE or MAT scores if their cumulative undergraduate GPA is a 3.3 or higher.

Conditional
Students who have an undergraduate grade point average of 2.5 or better, or who have an average between 2.3 and 2.5 with 2.7 or better in the last half of undergraduate work, may be granted conditional admission.

Regular admission to the College of Education and Human Services is granted after successful completion of 12 hours of course work with a grade of B or better in each course.

Licensure Candidate
Students who wish to complete licensure requirements at the graduate level but do not wish to pursue a graduate degree may be admitted as licensure candidates with the permission of the department in which the programs are housed. Persons pursuing a School Counseling license are required to complete the prescribed Praxis II exam.

Nondegree Status
Persons who have a bachelor's degree may enroll in nondegree status for graduate courses without being admitted to a graduate program. If you wish to enroll in a degree program, only 50 percent of such credits may be applied to a degree program if they are appropriate, with the exception of the Department of Human Services, which only allows 12 hours of nondegree credit to be applied to one of its degree programs. Students in nondegree status are not considered to be candidates in a program.

Faculty

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Phyllis A. Henderson, counselor education
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Joseph Keferl, rehabilitation counseling
Donna Tromski-Klingshirn, counselor education

Assistant Professors
Eileen F. Self, counselor education

Course of Study

School Counseling

Introductory Course Work	**12**
RHB 701 Counseling Theory and Practice	4
*CNL 863 Techniques of Counseling	4
EDL 751 Statistics and Research for Education	4

*Unless permission is granted, you must take RHB 701 prior to or concurrent with CNL 863.

Professional Requirements	**60**
CNL 662 Problems in Student Personality and Development	4
CNL 667 Group Background and Theory	4
OR	
CNL 767 Group Processes in Counseling and Guidance	4
CNL 762 Career Development and Information Services	4
CNL 765 Pupil Personnel Services in the School and Community Resources	4
CNL 779 Marriage and Family Counseling	4

CNL 971 Counseling for Life Span Development	4
CNL 972 Legal, Professional and Ethical Issues in Human Services	4
CNL 973 Social and Cultural Foundations in Counseling	4
EDS 655 Exceptional Learners	4
EDL 773 Curriculum Development for School Leaders	4
RHB 705 Behavioral Assessment	4
CNL 865 Individual and Group Practicum	4
CNL 867 Internship: School Counseling	12
Electives	**to 5**
Total	**76-77**

Graduate School
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Graduate Programs

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Education and Human Services - Superintendent (License)

Admission

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Licensure Candidate
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Students who wish to complete licensure requirements at the graduate level but do not wish to pursue a graduate degree may be admitted as licensure candidates with the permission of the department in which the programs are housed. Persons pursuing a Superintendent license are required to complete the Ohio Department of Education prescribed Praxis II exam.

Nondegree Status
Persons who have a bachelor's degree may enroll in nondegree status for graduate courses without being admitted to a graduate program. If you wish to enroll in a degree program, only 50 percent of such credits may be applied to a degree program if they are appropriate, with the exception of the Department of Human Services, which only allows 12 hours of nondegree credit to be applied to one of its degree programs. Students in nondegree status are not considered candidates in a program.

Faculty

Professor
Doug Roby, educational leadership

Associate Professors
Thomas Diamantes, educational leadership
Suzanne Franco, educational leadership
Scott Graham, educational leadership
Grant Hambright, educational leadership

Assistant Professors
Xoko Miura, educational leadership

Senior Lecturer
Marguerite Veres, educational leadership

Course of Study

Superintendent Licensure	**34**
EDL 991 Advanced Seminar in Educational Leadership	1
EDL 995 Advanced Institute for Eduational Leadership	1
EDL 858 Advanced Educational Measurement	4
EDL 980 Community Relations	4
EDL 971 Superintedent/Staff/Board Relationships	4
EDL 973 Advanced Curriculum Development	4
EDL 992 School Culture and Professional Growth	4
EDL 993 School District Business Management	4
EDL 970 Internship I: Superintendent	4
EDL 990 Internship II: Superintendent	4

Graduate School
E344 Student Union
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E-mail: wsugrad@wright.edu

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Last updated by the WSU Web Team (mnr).
Please send comments to Denise Thomas-Hoskins.

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Education and Human Services - Teacher Education Programs

Introduction

The Teacher Education Department offers programs that lead to licensure as a teacher, to master's degrees, or to both. Each program has a brief description before the requirements. The list below represents the programs available from the Teacher Education department:

Master's Degree Programs for Initial Teacher Licensure (for those who are not teachers)

Classroom Teacher: Middle Childhood Education
Classroom Teacher: Adolescent to Young Adult Education
Classroom Teacher: Multi-Age Education

Master's Degree Programs for Initial Teacher Licensure and for Current Teachers Seeking Advanced Study and/or Additional Teaching Credentials

Classroom Teacher: Intervention Specialist: Mild to Moderate Educational Needs
Classroom Teacher: Intervention Specialist: Moderate to Intensive Educational Needs
Classroom Teacher: Early Childhood Intervention Specialist
Classroom Teacher: Library Media (see Educational Leadership)

Master's Degree Programs for Teachers Seeking Advanced Study and/or Additional Teaching Credentials (Not Initial Teacher Licensure Programs; must have an initial teaching license)

Classroom Teacher: Advanced Studies
Classroom Teacher: Reading
Literacy Specialist Endorsement
Middle Childhood Generalist Endorsement (endorsement program only)
Pre-Kindergarten Special Needs Endorsement (endorsement program only)
Transition-to-Work Endorsement

Admission

In addition to meeting requirements for admission established by the School of Graduate Studies (these requirements can be reviewed at this Web site http://www.wright.edu /academics/catalog/grad/admissions/), candidates for these degrees who do not meet the minimum cumulative GPA requirement to waive the GRE or MAT, must submit satisfactory Graduate Record Examination (GRE) or Miller Analogies Test (MAT) scores, unless otherwise noted (see Waiver of GRE/MAT). The Adolescent to Young Adult, Multi-Age, and Middle Childhood initial teacher licensure programs require passing scores on the state of

Ohio's mandated Praxis II Specialty (Content) Area Exam(s). Contact the college's Office of Student Services or visit their Web site at www.cehs.wright.edu/ss/ to learn more about the Praxis II exams.

All students considering graduate-level courses in education and human services should do so with the understanding that graduate study differs in quality expectations from undergraduate study. Graduate study requires that students be increasingly self-directed and possess strong analytical skills. Students are not guaranteed a master's degree by attending and completing courses. Exit requirements must be met in all programs.

Admission to the College of Education and Human Services is based on the candidate's written statement of purpose, consideration of undergraduate and/or graduate cumulative grade point average, submission of satisfactory scores on either the MAT, GRE, or other required examination, and in some cases, letters of reference and a personal interview (see Waiver of GRE/MAT).

Technology Policy
For admission to the college, all College of Education and Human Services students, graduate and undergraduate, part-time and full-time, will be expected to certify that they own or have access to a computer and the Internet.

In order to meet the mission of the college "…to prepare professionals to meet the educational and human services needs of a diverse, democratic society," it is necessary for our students to play an active role in the technological environment the college and Wright State University are creating to assist in the completion of this mission. An increasing number of classes and options will become available to students using a variety of distributed learning formats; library resources are available in a growing number of full-text formats, and global connections via telecommunications will be part of daily operations. Students preparing to become professionals in education and human service areas must demonstrate appropriate and effective skills and knowledge in technological aspects of their work.

Minimum equipment requirements are recommended by Wright State University's Computing and Telecommunications Services (CaTS). Please check the following Web Site http://www.wright.edu/cats/purchase/pcguidelines.html for current information about minimum equipment requirements.

The college supports Macintosh computers in faculty and staff offices and maintains a computer lab. Wright State University has purchased a site license for most Microsoft software (see the Web page for Wright State's Computing and Telecommunications Services, http://www.wright.edu/cats/ for details).

Tk20
In order for an Ohio college or university to prepare educators for licensure by the Ohio Department of Education, we must demonstrate that we meet the standards of the National Council for Accreditation for Teacher Education (NCATE). Programs that meet NCATE standards are approved to prepare educators to hold licenses in Ohio. NCATE standards require that all programs that lead to an educator license (including administrators, teachers, school counselors, etc.) must document how our programs prepare our candidates successfully to meet the challenges of today's schools. This documentation must be uniform and systematic across all programs and licensure areas that the college offers. In addition, the college must show how faculty, staff and school partners utilize this information systematically to continuously improve our programs over time.

Since 2006 the college has utilized a data management system called Tk20 to collect key assessments to document the achievements of our candidates and programs. In order to do this, it is necessary for our faculty to ask students to submit certain assignments

electronically. There is a one-time student fee of $100 to register for the Tk20 system. This system will be available to you and your professors for a period of seven years.

Initial Teaching Credential (License)
Candidates seeking to enroll in a Teacher Education program designed to deliver an initial teaching credential (license) are required to pass the specialty/content area exam(s) as defined by current state of Ohio standards. Candidates to these programs must contact the college's Office of Student Services for assistance in identifying the appropriate exam(s) for his/her desired teaching field. Candidates unable to achieve a passing score as defined by state of Ohio standards will not be admitted to a Teacher Education program. Candidates seeking to enroll in a Teacher Education program designed to deliver an initial teaching credential will not be required to take the GRE or MAT exams. An exception to this rule is the Intervention Specialist programs. Applicants to these programs must take the GRE or MAT exams, unless eligible to waive testing requirement based on cumulative GPA (see Waiver of GRE/MAT).

Admission Standards for Initial Teaching Licensure Candidates
Entry requirements vary by program. All students will be required to pass a standardized test unless granted a waiver (see above), have a 2.7 grade point average as an undergraduate, submit a sample of writing, and may have an admissions interview and a criminal background check. All students who seek to attain a teaching license will be required to meet Ohio standards on a Praxis II Principles of Learning and Teaching exam at the end of the licensure portion of the program. Praxis II Specialty (Content Area) exams will serve as the entrance exam for the Middle Childhood, Multi-Age(Art), and Adolescent to Young Adult initial licensure programs. Multi-Age: Spanish and French candidates will be required to achieve the score of "Advanced/Low" on both the Oral Proficiency Exam(OPI) and the Written Proficiency Exam (WPT). The Intervention Specialist programs require the Graduate Record Exam (a combined score of 800 or more on the Quantitative and Verbal portion of the exam) or the Miller Analogy Test (a score of 380 or better) as the entrance exam. In addition, Intervention Specialist programs that lead to teacher licensure must submit an on-line application, a writing sample, and a copy of BCI and FBI criminal background check results to the College of Education and Human Services (for more information consult the college's Office of Student Services Web site at www.cehs.wright.edu/ss/).

All candidates for an initial licensure program (in any licensure area) must complete the college's application process concurrent with the School of Graduate Studies application. The college's initial teacher applications are found on the Office of Student Services Web site at www.cehs.wright.edu/ss/. Please contact the college's Office of Student Services if you have any questions about the requirements of a particular program.

Please note that the initial licensure programs in Middle Childhood (MC), Multi-Age (MA), and Adolescent Young Adult (AYA) education programs are designed as full-time programs in order to complete both course work and meet the Ohio Department of Education requirements for field experiences in schools.

Candidates with a grade point average of less than 2.3 on a 4.0 grading system are not ordinarily admitted to graduate school. A petition process is available to formally request admissions not having met an admission standard.

Waiver of GRE/MAT
Candidates to select Teacher Education programs may not be required to submit passing GRE or MAT scores if their cumulative undergraduate GPA is a 3.0 or higher. Candidates to Teacher Education programs requiring a passing score on a specialty area exam(s) must submit passing scores regardless of undergraduate GPA.

Provisional

Under certain conditions, a student may be admitted provisionally (for one quarter only), pending receipt of credentials. If admission requirements are not met during the quarter in which a student was admitted provisionally, registration for future quarters will be denied and the student will lose graduate credit for any graduate courses completed during the quarter.

Conditional
Candidates who have an undergraduate grade point average of 2.5 or better, or who have an average between 2.3 and 2.5 with 2.7 or better in the last half of undergraduate work, may be granted conditional admission. Regular admission to the College of Education and Human Services is granted after successful completion of 12 hours of course work with a grade of B or better in each course.

Licensure Candidate
Candidates who wish to complete licensure or endorsement requirements at the graduate level but do not wish to pursue a graduate degree may be admitted as licensure candidates with the permission of the department in which the programs are housed. Persons pursuing a teacher licensure program are required to complete the Ohio Department of Education prescribed exams for their intended area of licensure. Many of the licensure programs in CEHS require seperate application to the college. Visit this web site for information - www.cehs.wright.edu/ss.

Nondegree Status
Persons who have a bachelor's degree may enroll in nondegree status for graduate courses without being admitted to a graduate program in degree status. If you wish to enroll in a degree program, only 50 percent of such credits may be applied to a degree program if they are appropriate. Student attending in nondegree status are not considered to be candidates in a program.

Advising

Teacher Licensure Advisors and Faculty Advisors
The college's Office of Student Services is referred to in many areas of this catalog. Persons considering becoming a teacher and teachers who have questions about adding a new licensure area are encouraged to visit the Office of Student Services and consult with a licensure advisor. The office is located in 378 Allyn Hall and employs full-time professional licensure advisors for consultation. Advisors are available without an appointment during regularly scheduled walk-in advising times. Daytime and evening walk-in advising is available; please consult the office's Web site for current information regarding advising times at www.cehs.wright.edu/ss/. These advisors are charged by the college to audit students' programs for compliance with state of Ohio teacher licensure standards. Working with these advisors as you begin your studies will greatly increase the probability that you will select and take the appropriate courses for any given licensure area. Your application for the teaching license is filed with this office, and the licensure advisors assist the faculty by auditing your program at various stages of your program.

Many of our teacher licensure programs are also degree programs. We also offer advanced programs of study that provide current teachers with the opportunity for an in-depth study of an area, and the program does not include a new teaching license. Faculty advisors are assigned to each degree-seeking student at the point of acceptance to develop a separate plan for the degree. This formal program of study should be completed during the first term of a student's admission into a program. The faculty advisor will determine course substitutes, transfer of credit, and other appropriate modifications of the published degree curriculum as it appears in this catalog. The faculty advisor provides professional advising regarding current research, career development, and professional organizations. Any questions regarding the degree portion of your program will be directed to this faculty advisor. The licensure advisors will consult with this faculty person when

needed.

Degree Requirements

Initial Teacher Preparation Programs

Classroom Teacher: Middle Childhood (Grades 4 through 9 and ages 8 through 14)
Middle Childhood teachers will teach two of the following subject (content) areas: language arts, mathematics, science, and social studies. This is a full-time program of study currently requiring your commitment Monday through Friday. Students from Wright State Universcity's Bachelor of Education program in Middle Childhood Education and others with a bachelor's degree who meet the content requirements (two content oncentrations) of Wright State's educator program will be enrolled in this program in a cohort group to begin the program in either Summer "B" or Winter quarters. Prerequisite content requirements are described on the college's Web site at www.cehs.wright.edu/ss.

Students will serve as interns in school settings throughout the school year. Therefore, this program operates on a different calendar than the university and candidates may be required to start prior to the beginning of the university's academic term. Upon successful completion of the licensure portion of this program and passing the Praxis II exams in the Principles of Learning and Teaching 5–9 and the Praxis II subject area(s), the student may apply for a provisional license in Middle Childhood Education. The state of Ohio will require a criminal background check as a part of the licensure application. This program may be completed in approximately 12 months of full time study and internship.

Note regarding the Middle Childhood Generalist Endorsement:
The state of Ohio has an endorsement available to the Middle Childhood license. The college has an approved program for the middle childhood generalist endorsement for the licensed teacher to add either one or two of the following concentrations to their Middle Childhood license: English, Social Studies, Mathematics, Science. This endorsement requires additional undergraduate content courses and/or graduate methods/content courses and passing the required Praxis II subject area assessment(s). The Middle Childhood Generalist Endorsement qualifies one to work in self-contained classrooms in grades 4 to 6.

Classroom Teacher: Adolescent Young Adult (Grades 7 through 12, ages 12 through 21)
The holder of an AYA license will teach a single subject including language arts, social sciences, mathematics, or science in grades 7 through 12. To learn more about the approved AYA teaching (content) areas of study that Wright State offers, please visit our college's Office of Student Services.

This is a full-time program of study requiring your commitment Monday through Friday. Students from Wright State University and others with a bachelor's degree who meet the content requirements of Wright State's educator program will be enrolled in this program in a cohort group beginning Summer "B" or Winter Quarters. Prerequisite content requirements are described on the college's Web site at www.cehs.wright.edu/ss/.

Students will serve as interns in school settings throughout the school year. Therefore, this program operates on a different calendar than the university and candidates may be required to start prior to the beginning of the university's academic term. Upon successful completion of the licensure portion of this program and passing the Praxis II exam in the Principles of Learning and Teaching 7-12, the student may apply for a provisional license in Adolescent to Young Adult Education. The state of Ohio will require a criminal background check as a part of the licensure application. This program may be completed in 12 months of full time study and internship.

Classroom Teacher: Multi-Age (Grades pre-kindergarten through 12, ages 3 through 21)
Wright State is approved to endorse candidates for the Multi-Age license for those persons who wish to teach a world language (French or Spanish), or visual arts (Art). (Music education is only available on the undergraduate level through the university's College of Liberal Arts.)

This is a full-time program of study requiring your commitment Monday through Friday. Students from Wright State University and others with a bachelor's degree who meet the content requirements of Wright State's educator program will be enrolled in this program in a cohort group beginning Summer "B" or Winter Quarters. Prerequisite content requirements are described on the college's Web site at www.cehs.wright.edu/ss/.

Students will serve as interns in school settings throughout the school year. Therefore, this program operates on a different calendar than the university and candidates may be required to start prior to the beginning of the university's academic term. Upon successful completion of the licensure portion of this program and passing the Praxis II exam in the Principles of Learning and Teaching (any level), the student may apply for a provisional license in Multi-Age Education. The state of Ohio will require a criminal background check as a part of the licensure application. This program may be completed in 12 months of full time study and internship.

Classroom Teacher: Intervention Specialist Programs (Grades Kindergarten through 12, ages 5 through 21)
The Intervention Specialist Programs in Mild to Moderate, and/or Moderate to Intensive Educational Needs are available for the currently practicing teacher as well as those persons who are not currently holding a teaching license. These are separate, individual programs. Because of the high demand for intervention specialists, it is not uncommon for persons to be employed by a school district on a special, temporary license pending completion of an Intervention Specialist licensure program. These programs are designed to serve both of those populations. Candidates who are not currently licensed will be required to complete prerequisite coursework prior to entering the professional course sequence. Please consult with a licensure advisor in the college's Office of Student Services regarding prerequisite coursework.

Upon successful completion of the licensure portion of this program and passing any one of the Praxis II exams in the Principles of Learning and Teaching and passing the Praxis II Specialty (Content) exams in special education, the student may apply for a provisional Intervention Specialists license valid for teaching students in the program area the student completed (Mild to Moderate, Moderate to Intensive). A Master of Education degree in classroom teaching may be earned with the successful completion of the balance of the programs.

Early Childhood Education Intervention Specialist (ECIS) License (Grades pre-kindergarten through 3, ages 3 through 8)
This program is available to graduate students seeking an initial teaching license and those currently holding a valid teaching credential. Licensure requirements include successful completion of all of the licensure courses and successful scores on Praxis II in the Principles of Learning and Teaching PK-3 and the Praxis II Specialty (Content) exam(s).

The ECIS license is valid for teaching student from age three through grade three with mild/moderate intensive disabilities. Please visit our college's Office of Student Services and review that office's Web Site http://www.cehs.wright.edu/ss to learn about the licensure requirements for this program.

Advanced Teacher Preparation Programs and Admission Criteria
Note: The following Classroom Teacher programs are not initial licensure programs. They

are available solely for advanced study by current teachers with at least a provisional teaching license). The college requires the GRE or MAT exam as the entrance exam for these programs unless the applicant's cumulative undergraduate and graduate GPA is 3.0 or higher. These programs are available as either an M.A. or M.Ed. option. Some of the programs below also require a seperate application to the college.

Classroom Teacher: Advanced Studies
Classroom Teacher (CT): Advanced Studies is a master of education (M.Ed.) degree program for the continuing education of current teachers who hold at least a provisional teaching license. This program offers a flexible option for highly motivated persons who are seeking advanced study with specific professional objectives, such as updating and expanding knowledge or skills in a specified area, and/or preparing for an additional teaching license or endorsement.

Classroom Teacher: Reading
Classroom Teacher (CT): Reading is a master of education (M.Ed.) degree program for the continuing education of current teachers who hold at least a provisional teaching license. Opportunities for graduates of this program include classroom teaching, tutoring in a variety of settings, and work in training departments in business and industry. As part of the Ohio Coalition, the department is also providing online coursework for students to attain literacy specialist licensure. The Classroom Teacher:Reading program requires an additional application to the college. For more information, consult the college's Office of Student Services web site at www.cehs.wright.edu/ss.

Reading Endorsement
The reading endorsement program is for the continuing education of current teachers who hold at least a provisional teaching license and is designed to aid the classroom teacher (K-12) in helping students improve reading and thinking skills. This program leads to an reading endorsement that would be added to a standard teaching certificate/license

Pre-Kindergarten Special Needs Endorsement
Teachers seeking an endorsement in Prekindergarten Special Needs through the Wright State University College of Education and Human Services must hold a current teaching certificate in prekindergarten or kindergarten to grade 12 special education or a provisional or professional early childhood education teaching license. This endorsement is valid for teaching students with disabilities in prekindergarten (ages 3-5) settings.

Teachers without a current valid teaching credential must complete the renewal requirements for their credential prior to the granting of this endorsement. Teachers desiring to continue for their Master's degree or Early Childhood Intervention Specialist (ECIS) license must apply to the Master's in ECIS degree program before 50% of the course work for that degree is completed.

Transition to Work Endorsement
Teachers seeking a Transition to Work Endorsement must hold a currently valid intervention specialist or career technical license. The endorsement training has adopted the transition standards from the Council of Exceptional Children (CEC) as the model curriculum for transition specialists in Ohio. Please contact the Teacher Education Department, for specific questions about the endorsement process. For more information, consult the college's Office of Student Services web site at www.cehs.wright.edu/ss.

Faculty

Professors
Colleen Finegan (chair), early childhood education/intervention specialist (special education)
Ron Helms, teacher education

James Tomlin, science education/biology

Associate Professors
Mary Ellen Bargerhuff (associate dean), intervention specialist (special education)
Beth Basista, science education/physics
Angela Beumer-Johnson, English education
James Dunne, intervention specialist (special education)
Charlotte Harris (dean), teacher education
Doris Johnson, teacher education
Susann Mathews, mathematics education
Will Mosier, early childhood education
Richelle O'Connor, teacher education
Linda Ramey, teacher education
Patricia Renick, intervention specialist (special education)
Ken Schatmeyer, literacy education
William Slattery, science education/geology

Assistant Professors
Christa Agiro, English education
Aina Appova, mathematics education
Timothy Boester, mathematics education
Brian Boyd, mathematics education
John Haught, TESOL education
Catherine Keener, intervention specialist (special education)
Lisa Kenyon, science education/biology
Kathy Koenig, science education/physics
Sally Lamping, English education
Anna Lyon, early childhood education
Noeleen McIlvenna, social studies education
Benjamin Montague, art education
Nimisha Patel, teacher education
Michelle Reed, mathematics education
Melissa Schen, science education/biology
Rebecca Teed, science education/geology
Nephi Thompson, science education/physics

Lecturers
Tracey Kramer, literacy education
Gail Scott, intervention specialist (special education)

Course of Study

Master's Degree Programs for Initial Teacher Licensure (for those who are not teachers)

Classroom Teacher: Middle Childhood Education
Please visit our college's Office of Student Services and review that office's Web Site http://www.cehs.wright.edu/ss to learn about the teacher licensure admission requirements for this program.

Pre-requisite courses for students who do not complete the following courses as undergraduates

ED 602 Education in a Pluralistic Society: Middle Childhood Perspective	4
ED 621 Human Development and Learning: Middle Childhood Perspective	4
EDS 624 Addressing Learning Differences	4
ED 612 Practicum I: Middle Childhood Level	1

Middle level course for all students

ED 600 Classroom Management	4
ED 714 Inquiry & Assessment for Middle Childhood	4
ED 732 Principles and Practices of Middle School	4
ED 642 Professional Seminar: Middle Childhood	2
ED 771 Inquiry Project(required for M.Ed.)	4
Content Pedagogy: Choose Two	
ED 636 Integrated Middle Childhood Level Science Methods	4
ED 610 Middle Childhood Mathematics: Philosophy, Curriculum and Materials	4
ED 624 Middle Childhood Literature, Speech, and Drama	4
ED 629 Middle School Social Studies: Curriculum and Materials	4
Reading literacy courses	
ED 606 Reading & Literacy Instruction I	4.5
ED 607 Reading & Literacy Instruction II	4.5
ED 609 Assessment and Intervention	4.5
ED 608 Word Study: Phonics	4.5
Practicum/Internship	
ED 614 Practicum II: Middle Childhood Level	1
ED 614 Practicum III: Middle Childhood Level	1
ED 641 Internship/Seminar: Middle Childhood Level	10
Total M.Ed. Program Hours if Graduate prerequisite courses are needed	**69**
Total M.Ed. Program Hours if Graduate prerequisite courses are not needed	**56**

Classroom Teacher: Adolescent to Young Adult Education

Please visit our college's Office of Student Services and review that office's Web Site http://www.cehs.wright.edu/ss to learn about the teacher licensure admission requirements for this program.

Pre-requisite courses (for students who do not complete the following courses as Undergraduates)

ED 602 Education in a Pluralistic Society: Middle Childhood Perspective	4
ED 621 Human Development and Learning: Middle Childhood Perspective	4
EDS 624 Addressing Learning Differences	4
ED 612 Practicum I	1

Adolescent to Young Adult Content Courses

ED 715 Action Research Methods for Teachers	4
ED 664 Measurement and Assessment in Education	4
ED 600 Classroom Management	4
ED 652 Professional Seminar	1
ED 772 Inquiry Project	2

ED 653 Content Seminar	1
Content Pedagogy (Choose one Area)	
Integrated Social Studies	
Content Pedagogy I	
ED 639 Adolescence Social Studies: Curriculum & Materials	4
Content Pedagogy II	
ED 648 Improvement of Social Studies Instruction	4
Science	
Content Pedagogy I	
ED 731 Adolescence & Young Adult Science: Methods, Curriculum, & Materials	4
Content Pedagogy II	
ED 746 Science, Technology & Society as a Teaching Imperative	4
Integrated Language Arts	
Content Pedagogy I	
ED 620 Studies in English Education	4
Content Pedagogy II	
ED 623 Adolescence English: Curriculum & Materials	4
Integrated Mathematics	
Content Pedagogy I	
ED 637 Secondary School Mathematics: Curriculum & Materials	4
Content Pedagogy II	
ED 638 Methods for Teaching Mathematics to Adolescence & Young Adults	4
Reading Literacty course	
ED 631 Literacy Skills Through Adolescence	5
Practicum/Internships	
ED 614 Practicum II	2
ED 616 Practicum III	2
ED 651 Internship: Adolesence	10
Portfolio/Capstone Requirements	
ED 646 Action Research Capston	4
Total M.Ed. Program hours if prerequisites courses are needed	**60**
Total M.Ed. Program hours if prerequisites are not needed	**47**

Classroom Teacher: Multi-Age Education

Please visit our college's Office of Student Services and review that office's Web Site http://www.cehs.wright.edu/ss to learn about the teacher licensure admission requirements for this program.

Pre-requisite courses (for students who do not complete the following courses as Undergraduates)

ED 602 Education in a Pluralistic Society: Middle Childhood Perspective	4
ED 621 Human Development and Learning: Middle Childhood Perspective	4
EDS 624 Addressing Learning Differences	4
ED 612 Practicum I	1

Multi-Age Content Courses

ED 652 Professional Seminar	1
ED 715 Action Research Methods for Teachers	4
ED 600 Classroom Management	4

ED 772 Inquiry Project	2
ED 653 Content Seminar	1
Content Pedagogy (Choose one Area)	
Visual Arts	
Content Pedagogy I	
AED 631 Art & the Child	4
Content Pedagogy II	
AED 638 Multi-Age Visual Arts Methods	4
World Languages	
Content Pedagogy I	
ED 625 Modern Foreign Languages I: Curriculum & Materials	4
Content Pedagogy II	
ED 627 Modern Foreign Languages II: Curriculum, Methods & Materials	4
Reading Literacy	
ED 631 Literacy Skills Through Adolescence	5
Practicum/Internship	
ED 614 Practicum II	2
ED 616 Practicum III	2
ED 661 Internship/Seminar: Multi-Age	10
Portfolio/Capstone Requirements	
ED 664 Measurement and Assessment in Education	4
ED 646 Action Research Capstone	4
Total M.Ed. Program hours if prerequisites are needed	**60**
Total M.Ed. Program hours if prerequisites are not needed	**47**

Master's Degree Programs for Initial Teacher Licensure or for Current Teachers Seeking Additional Teaching Credentials

Classroom Teacher: Intervention Specialist: Mild to Moderate Educational Needs

Please visit our college's Office of Student Services and review that office's Web Site http://www.cehs.wright.edu/ss to learn about the teacher licensure admission requirements for this program.

ED 704 Introduction into the Foundations of Education	4
EDT 786 Application for Computers in Education	4
EDS 700 Special Education Entrance Seminar	4
EDS 655 Exceptional Learners	5
EDS 654 Assessment: The Intervention Specialist Role	4
EDS 642 Curricula Methods and Materials to Teach Students with Mild to Moderate Educational Needs	4
EDS 626 Introduction to Adaptive Technology	4
EDS 745 Special Education Midpoint Seminar	1
EDS 644 Instructional and Behavioral Management Skills for Intervention Specialists	4
EDS 645 Transitions of Students with Special Needs	4
EDS 659 Communication and Consultation Skills for Educators	4
EDS 656 Clinical Practice in Remediation	4

ED 661 Internship: Special Education Mild/Moderate	10
OR	
ED 658 Practicum in Education	5
EDS 799 Special Education Exit Seminar	2
Total (M.Ed.)	**53-58**

EDL 751 Statistics and Research, 4 hours, EDL 852 Statistical Analysis and Research Design, 4 hours, and ED 899 Thesis, 1-9 hours, required for the Master of Arts option. The M.A. option removes EDT 786, EDS 700, and EDS 799 from this program of study.

Total (M.A.)	**53-58**

Classroom Teacher: Intervention Specialist: Moderate to Intensive Educational Needs

Please visit our college's Office of Student Services and review that office's Web Site http://www.cehs.wright.edu/ss to learn about the teacher licensure admission requirements for this program.

ED 704 Introduction into the Foundations of Education	4
EDT 786 Application for Computers in Education	4
EDS 700 Special Education Entrance Seminar	4
EDS 655 Exceptional Learners	5
EDS 652 Education of Individuals with Physical Sensory, Sensory, or Motor Disorders	4
EDS 653 Curricula Methods, Materials for Students with Moderate/Intensive Exceptionalities	4
EDS 643 Introduction to Augmentative Communication	4
EDS 745 Special Education Midpoint Seminar	1
EDS 644 Instructional and Behavioral Management Skills for Intervention Specialists	4
EDS 645 Transitions of Students with Exceptionalities	4
EDS 654 Assessment Skills: The Intervention Specialist Role	4
EDS 659 Communication and Consultation Skills for Educators	4
ED 626 Introduction to Adaptive Technology	4
EDS 656 Clinical Practice in Remediation	4
ED 769 Content Reading Instruction: Grades 4-12	3
ED 661 Internship: Special Education Moderate/Intensive	10
OR	
ED 658 Practicum in Education	5
EDS 799 Special Education Exit Seminar	2
Total (M.Ed.)	**61-66**

EDL 751 Statistics and Research, 4 hours, EDL 852 Statistical Analysis and Research Design, 4 hours, and ED 899 Thesis, 1-9 hours, required for the Master of Arts option. The M.A. option removes EDT 786, EDS 700, and EDS 799 from this program of study.

Total (M.A.)	**61-66**

Classroom Teacher: Early Childhood Intervention Specialist: (ECIS)

Please visit our college's Office of Student Services and review that office's Web Site http://www.cehs.wright.edu/ss to learn about the teacher licensure admission requirements for this program.

EDS 700 Special Education Entrance Seminar	4
EDS 745 Special Education Mid-point Seminar	1
EDS 799 Special Education Exit Seminar	2
ED 715 Action Research Methods for Teachers	4
EDT 786 Application of Computers in Education	4
EDS 626 Introduction to Adaptive Technology	4
OR	
EDS 643 Introduction to Augmentative Communication	4
EDS 655 Exceptional Learners	4-5
EDS 644 Instructional & Behavioral Management Skills for Intervention Specialists	4
EDS 654 Assessment Skills: The Intervention Specialist Role	4
EDS 632 Principles and Practices in Early Intervention and Early Childhood Special Education	4
EDS 633 Establishing Partnerships with Families of Children Identified for Early Intervention and/or Early Childhood Special Education	4
EDS 634 Children Birth Through Age Eight with Medical Needs	4
EDS 635 Curriculum, Methods, and Materials for Children Identified for Early Intervention and/or Early Childhood Special Education	4
ED 656 Clinical Practicum in Remediation	4
ED 658 Practicum in Education*	6
OR	
EDS 661 Internship: ECIS**	10
Total (M.Ed.)	**58-62**

The M.A. option removes ED 715 Action Research Methods for Teachers from the degree requirements.

Required for MA:

EDL 751 Statistics and Research	4
EDL 852 Statistical Analysis and Research Design	4
ED 899 Thesis	1-9
Total (M.A.)	**63-70**

Master's Degree Programs for Teachers Seeking Advanced Study and/or Additional Teaching Credentials (Not Initial Teacher Licensure Programs)

Classroom Teacher: Advanced Studies

Section I Core	12
ED 700 Advanced Studies Seminar I: Introduction	2
ED 701 Advanced Educational Psychology	4
ED 704 Inquiry into Foundations of Education	4
ED 715 Action Research Methods for Teachers	4
OR	
EDL 751 Statistics and Research	4
ED 799 Advanced Studies Seminar II: Transition	3
ED 820 Advanced Studies Seminar III: Capstone	3

Section II Concentration 25 minimum

(Students must choose a concentration area with advisor)

Total (M.Ed.)	**45 minimum**

Classroom Teacher: Early Childhood Generalist Endorsement

Please visit our college's Office of Student Services and review that office's Web Site http://www.cehs.wright.edu/ss to learn about the teaching endorsement admissions requirements.

ED 702 Principles, Practices adn Learning in grades 4 and 5	3
ED 703 Reading and Language Arts Instruction in Social Studies for grades 4 and 5	4.5
ED 705 Effective Science Instruction for grades 4 and 5	3
ED 707 or MTE 641 Effective Mathematics Instruction for grades 4 and 5	4.5
Total	**15**

Classroom Teacher: Literacy Specialist Endorsement

Please visit our college's Office of Student Services and review that office's Web Site http://www.cehs.wright.edu/ss to learn about the teaching endorsement admission requirements. A seperate application to the college is required for this program.

ED 790 Coaching in Diverse Classrooms	3
ED 791 Pedegogy of Effective Literacy Instruction	3
ED 792 Coaching for Effective Assessment Practice	3
ED 793 Professional Development in Literacy	3
ED 794 Advanced Literacy Research	3
ED 795 Literacy Internship I (fall)	4
ED 796 Literacy Internship II (winter)	4
ED 797 Literacy Internship III (spring)	4
Total	**27**

Classroom Teacher: Reading

Please visit our college's Office of Student Services and review that office's Web Site http://www.cehs.wright.edu/ss to learn about the additional application requirements for this program.

ED 706 Foundational Knowledge	4.5
ED 722 Writing Curriculum and Instruction	4.5
ED 745 Reading Curriculum and Instruction	4.5
ED 750 Diagnostics and Assessment	4.5
ED 712 Literature for Diverse Learners	4.5
ED 760 Learning and Leadership	4.5
ED 765 The Psychology of Reading	4.5
ED 717 Phonics/Word Study	4.5
ED 780 Action Research Methodology	4.5

ED 756 Assessment and Instruction*	4.5
ED 781 Literacy Research Seminar*	4.5
Total (M.Ed.)	**49.5**

Classroom Teacher: Prekindergarten Special Needs Endorsement

Please visit our college's Office of Student Services and review that office's Web Site http://www.cehs.wright.edu/ss to learn about the teaching endorsement admission requirements for this program.

ED 658 Practicum in Education	5
EDS 654 Assessment Skills: The Intervention Specialist Role	4
EDS 632 Principles and Practices in Early Intervention and Early Childhood Special Education	4
EDS 633 Establishing Partnerships with Families of Children Identified for Early Intervention and/or Early Childhood Special Education	4
EDS 634 Children Birth Through Age Eight with Medical Needs	4
EDS 635 Curriculum, Methods, and Materials for Children Identified for Early Intervention and/or Early Childhood Special Education	4
Total	**25**

Middle Childhood Generalist Endorsement (must be licensed in Middle Childhood Education (Ohio))

Please visit our college's Office of Student Services and review that office's Web Site http://www.cehs.wright.edu/ss to learn about the teaching endorsement admission requirements for this program. Please consult with a licensure advisor in the college's Office of Student Services for Ohio Department of Education test requirements (Praxis exams).

Science	**8**
PHY 646 Integrating Physical Science & Mathematics II **OR** PHY 647 Integrating Physical Science & Math III **OR** CHM 645 Integrating Chemistry & Math I **OR** CHM 650 Integrating Chemistry & Math II	4
BIO 701 Selected Topics in Biology: Biology by Inquiry (BIO 545 & 546 under development) **OR** EES 699 Earth Systems **OR** EES 615 Global Change	4
Mathematics	**8**
MTH 343/643* Algebra & Functions for Middle School Teachers	4
MTH 345/645* Geometry for Middle School Teachers	4

*the graduate versions are the same courses with different requirements and expectations

Some or all of the following prerequisites may be required.

(Contact the Math Dept in 120 Math & Microbiology Bldg.)

Level 5 on the Math Placement Test or MTH 128 College Algebra	5
MTH 143 Quantitative Reasoning	4
MTH 243 Fundamentals of Mathematics I	4
MTH 244 Fundamentals of Mathematics II	4

Social Studies	**8**
ED 629 Middle Childhood Social Studies: Curriculum Materials and Philosophy	4
HST 470 Early American History **OR** HST 475 19th Century United States History **OR** HST 480 20th Century United States History **OR** HST 485 Special Topics in United States History	4
English/Language Arts	**8**
ENG 345 Writing Workshop	
ED 624 Middle Childhood Literature, Speech & Drama	
Total hours	**8 per area**

Reading Endorsement (for students with a teaching license/certificate)

Please visit our college's Office of Student Services and review that office's Web Site http://www.cehs.wright.edu/ss to learn about the teaching endorsement admission requirements for this program. A seperate application to the college is required for this program.

ED 716 Foundations of Reading Instruction	4.5
ED 717 Instruction in Word Study: Phonics	4.5
ED 712 Instruction of Diverse Learners, K-12	4.5
ED 722 Writing, K-12	4.5
ED 745 Content Reading Instruction Grades K-12	4.5
ED 750 Diagnosis/Assessment of Reading Performance	4.5
EDS 756 Practicum I: Intervention for At-Risk Readers	4.5
Please consult with a Teacher Licensure Advisor in the college's Office of Student Services for Ohio Department of Education testing requirements (Praxis).	
Total	**31.5**

Transition to Work Endorsement (TTW) (Must hold a current teaching license in Intervention Specialist or Career Technical)

Please visit our college's Office of Student Services and review that office's Web Site http://www.cehs.wright.edu/ss to learn about the teaching endorsement admissions requirements for this program. This program requires a seperate application to the college.

EDS 655 Exceptional Learners	5
TTW 646 Vocational Assessment, Diagnosis and Evaluation	4
EDS 645 Planning and Managing	4
EDS 644 Managing Student Behavior	4
EDS 659 Communication and Collaborative Partnerships	4
TTW 647 TTW Internship I	2

TTW 647 TTW Internship II	2
TTW 649 TTW Internship III	2
TTW 650 TTW Internship IV	2
Total	**29**

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Graduate Programs

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Education and Human Services: Curriculum, Instruction, and Professional Development (CIPD Licensure)

Admission

Technology Policy
For admission to the college, all College of Education and Human Services students, graduate and undergraduate, part-time and full-time, will be expected to certify that they own or have access to a computer and the Internet.

In order to meet the mission of the college "…to prepare professionals to meet the educational and human services needs of a diverse, democratic society," it is necessary for our students to play an active role in the technological environment the college and Wright State University are creating to assist in the completion of this mission. An increasing number of classes and options will become available to students using a variety of distributed learning formats; library resources are available in a growing number of full-text formats, and global connections via telecommunications will be part of daily operations. Students preparing to become professionals in education and human service areas must demonstrate appropriate and effective skills and knowledge in technological aspects of their work.

Minimum equipment requirements are recommended by Wright State University's Computing and Telecommunications Services (CaTS). Please check the following Web Site http://www.wright.edu/cats/purchase/pcguidelines.html for current information about minimum equipment requirements.

Tk20
In order for an Ohio college or university to prepare educators for licensure by the Ohio Department of Education, we must demonstrate that we meet the standards of the National Council for Accreditation for Teacher Education (NCATE). Programs that meet NCATE standards are approved to prepare educators to hold licenses in Ohio. NCATE standards require that all programs that lead to an educator license (including administrators, teachers, school counselors, etc.) must document how our programs prepare our candidates successfully to meet the challenges of today's schools. This documentation must be uniform and systematic across all programs and licensure areas that the college offers. In addition, the college must show how faculty, staff and school partners utilize this information systematically to continuously improve our programs over time.

Since 2006 the college has utilized a data management system called Tk20 to collect key assessments to document the achievements of our candidates and programs. In order to do this, it is necessary for our faculty to ask students to submit certain assignments electronically. There is a one-time student fee of $100 to register for the Tk20 system. This system will be available to you and your professors for a period of seven years.

Admission
This licensure program is available to candidates who have completed the M.Ed. Curriculum & Instruction: Teacher leader program. In addition, students must me requirements for admission established by the School of Graduate Studies.

Licensure Candidate
In addition to meeting the requirements for admission to the School of Graduate studies, students who wish to complete licensure requirements at the graduate level but do not wish to pursue a graduate degree may be admitted as licensure candidates with the permission of the department in which the programs are housed. Persons pursuing an administrative specialist or principal license are required to complete the Ohio Department of Education prescribed Praxis II exam(s) for their intended area of licensure.

Nondegree status
Persons who have a bachelor's degree may enroll in nondegree status for graduate courses without being admitted to a graduate program. If you wish to enroll in a degree program, only 50 percent of such credits may be applied to a degree program if they are appropriate, with the exception of the Department of Human Services, which only allows 12 hours of nondegree credit to be applied to one of its degree programs. Students in a nondegree status are not considered candidates in a program.

Faculty

Professor
Doug Roby, educational leadership

Associate Professors
Thomas Diamantes, educational leadership
Suzanne Franco, educational leadership
Scott Graham, educational leadership
Grant Hambright, educational leadership

Assistant Professors
Xoko Miura, educational leadership

Senior Lecturers
Marguerite Veres, educational leadership

Course of Study

CIPD Courses	**32**
EDL 858 Advanced Educational Measurement	4
EDL 960 Political and Social Contexts of Schools	4
EDL 961 Instructional Leadership	4
EDL 962 Leadership for Individual and Collective Change	4
EDL 963 Advance Curriculum Analysis	4
EDL 993 School District Business Management	4
EDL 930 Internship I: CIPD	4
EDL 890 Internship II: CIPD	4
Total CIPD Licensure (after the M.Ed. CI: Teacher Leader)	**80**

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Electrical Engineering

Introduction

The Department of Electrical Engineering offers a program of graduate study leading to a Master of Science in Engineering (M.S.E.) degree with a major in electrical engineering. The M.S.E. program is broad in scope and emphasizes portable concepts in the design and analysis of complex physical systems using modeling, synthesis, and optimization techniques, and bridges interdisciplinary engineering areas such as controls, robotics, electronics, and communications. A Ph.D. in engineering with a major in electrical engineering is also available. For details, see Engineering Ph.D. Program.

Admission

To be considered for admission to the M.S.E.–Electrical Engineering program, students must first satisfy basic requirements of the School of Graduate Studies. This includes having a bachelor's degree in engineering or a related area with an overall undergraduate grade point average of at least 2.7 (on a 4.0 scale) or an overall undergraduate grade point average of at least 2.5 with an average of 3.0 or better for the last 90 quarter hours (60 semester hours) earned toward the undergraduate degree. International students must have a TOEFL score of at least 550 on the paper-based exam or 213 on the computer-based exam. In addition, the program requires students from non-ABET accredited undergraduate programs to submit general GRE test scores. Program admission decisions are based on complete application information including overall academic performance and standardized test scores where applicable.

Collaboration

The Dayton Area Graduate Studies Institute provides collaboration opportunities through the graduate engineering courses, faculty, and research resources of the Air Force Institute of Technology, the University of Dayton, The Ohio State University, and the University of Cincinnati.

Degree Requirements

Students should plan a program of study in consultation with a faculty advisor. The program of study should be finalized by the time the student completes 12 credit hours of graduate study.
The following requirements must be met for the Master of Science in Engineering degree with a major in electrical engineering:

1. Completion of 45 graduate credit hours (in courses numbered 600 or above) in a program of study approved by the Electrical Engineering department chair or the Electrical

Engineering Graduate Program Director.

2. At least 33 of the total 45 graduate credit hours must have an EE (electrical engineering) prefix.

3. At least 24 of the 45 graduate credit hours must be courses numbered 700 or above. Of these 24, 700-level credit hours, at least 16 must have an EE prefix.

4. At least 6 of the total 45 graduate credit hours must be from the following: EE 701, EE 702, EE 761, EGR 703, CEG 770, or any 600-700 level math/statistics class approved by the graduate advisor. A grade of “B” or better must be earned in the above class.

5. Students may choose either a thesis option or a 45 credit hours graduate course work option. Students employed as teaching or research assistants through the School of Graduate Studies must choose the thesis option. The thesis option consists of a research project satisfying all requirements of the School of Graduate Studies. The final report (thesis) must be completed and successfully defended in an oral examination before a faculty committee. Up to 12 credit hours of EE 899, Thesis, may count toward degree requirement of 45 graduate credit hours.

6. No more than nine credit hours of “C” grade may be applied toward the program of study. A maximum of four credit hours of independent study (EE 890) may be used toward the degree requirements.

Note: In any given quarter, a minimum of 50 percent of total registered credit hours must have an EE prefix.

Facilities

Graduate students have access to a wide range of computer systems interconnected by local and wide-area networks. Access is available to DEC Alpha servers and workstations, a Silicon Graphics (SGI) Onyx 2 and SGI, DEC and Sun Workstations, as well as numerous networked PCs and x-windowing terminals. Access is also available to the Ohio Supercomputer via the Ohio Academic and Research Network (OARNET).

Faculty

Professors

James E. Brandeberry (Emeritus), circuit and interface design, microprocessors, digital control, robotics and computer-aided design
Chien-In Chen, VLSI design, design testability, computer-aided design automation
Lang Hong, stochastic control systems, computer vision, image processing and pattern recognition, robotics, multiple sensor integration and target tracking
Marian K. Kazimierczuk, electronic circuit analysis, high-frequency tuned power amplifiers, power electronics
William S. McCormick (Emeritus), communication theory, bioengineering, electromagnetics, electro-optics
Kuldip S. Rattan, computer-aided design, digital signal processing and control, bioengineering, robotics
Arnab K. Shaw, communication theory and stochastic processes, estimation and detection, signal modeling and signal processing, simulation of communication systems
Raymond E. Siferd (Emeritus), integrated circuits, signal processing, microelectromechanical systems

Associate Professors

John M. Emmert, physical VLSI design, reconfigurable systems, VHSIC hardware description language (VHDL), verilog, physical design automation for VLSI

Fred Garber (chair), decision theory and pattern recognition with applications to automatic target recognition, communication theory with emphasis on modulation techniques for multipath fading channel communications
Russell A. Hannen (Emeritus), electronic systems, control theory, stochastic processes
Pradeep Misra, multivariable control theory, decentralized system theory, robotics and applied numerical analysis, two-dimensional discrete-time systems and robust control theory
Kefu Xue, image processing and computer vision, stochastic processes and filtering, computer and communication systems, control and estimation theory

Assistant Professors
Brian Rigling, sensor signal processing, including synthetic aperture radar, autofocus, and array processing, radar systems engineering, parametric modeling and estimation, growing interest in noise radar and adaptive filtering
Zhigiang Wu, 3G cellular, CDMA systems, multicarrier architectures and frequency domain processing

Graduate Assistantship

Assistantships are available to students on a competitive basis. Students awarded assistantship support are eligible for stipends and remission of tuition fees. Interest in financial support should be indicated at the time of application.

Research

Research in electrical engineering includes the following areas: robotics and control systems, signal and image processing, power electronics, very large scale integrated (VLSI) circuits, and microwaves and antenna theory.

In the areas of robotics and control, faculty members are involved in conventional and fuzzy control of robot manipulators and calibration, robust control of uncertain systems, and computer-aided control design. Related research in system identification, multisensor integration, multidimensional filter design, and computer integrated manufacturing is also being conducted.

A number of faculty members are involved in research programs in the areas of signal and image processing, communications, and radar systems. Topics under investigation include real-time spectrum estimation, radar system analysis, real-time frequency and angle of arrival estimation, parametric modeling techniques, neural network based speech processing, color image processing, and automatic target recognition.

The activities in electronics include design of research in radio frequency power conditioning circuits involving hybrid circuit technology and power electronics.

VLSI research includes design of integrated circuits for signal processing and computer architecture using CMOS technologies as well as developing methods for built-in self-test of VLSI circuits. There is an associated research program in microelectromechanical systems (MEMS).

The research effort in microwaves and antennas is focused on CAD models for millimeter wave integrated circuits (MMIC), and analytical and numerical techniques for arbitrarily shaped, high-frequency printed circuits and conformal antennas.
Research at Wright State is not limited to the laboratory facilities on campus. Several industrial companies, laboratories, and Wright-Patterson Air Force Base are involved in joint research efforts with the university and have unique facilities that are available for faculty and graduate research.

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Engineering Ph.D. Program

Introduction

The College of Engineering and Computer Science offers a program of graduate study leading to the Doctor of Philosophy degree in engineering. The degree is awarded for demonstrated scholarly excellence in study and research that provides a significant contribution to specific areas in the field of engineering. In addition to faculty expertise, the program's strength lies in its unique multidisciplinary approach and outstanding opportunities for collaborative research.

Admission

Students may be admitted to the Ph.D. in Engineering Program with a bachelor's degree from an ABET-accredited program or a master's degree from an engineering program; satisfaction of the admission requirements as set forth by the School of Graduate Studies; and a record (transcripts, statement of research interests, GRE scores, letters of recommendation, and, if applicable, TOEFL scores) that indicates potential for a career in engineering research as evaluated by the program's admission committee. Students should come to the program with a strong understanding of engineering fundamentals. Interest in financial support should also be indicated at the time of application.

Collaboration

The program's seven research focus areas are not intended to be disciplinary boundaries; rather, they are intended to focus and help define research efforts across disciplinary boundaries in a way that exploits collaborative opportunities.

The Dayton Area Graduate Studies Institute (DAGSI) provides collaboration opportunities through the graduate engineering courses, faculty, and research resources of the Air Force Institute of Technology (AFIT), the University of Dayton (UD), The Ohio State University (OSU), the University of Cincinnati (UC), and the Miami University of Ohio (MU). Students enrolled in Wright State's Ph.D. in Engineering Program are effectively considered resident students of both AFIT and UD. Additionally, WSU engineering Ph.D. students have the faculty and research resources of OSU, MU, and UC available to them, as well as courses on a transfer credit basis.

Degree Requirements

To obtain the Ph.D. in Engineering degree, the student must complete an approved program of study containing at least 135 quarter graduate credit hours beyond the bachelor's degree in engineering or equivalent degree, or 90 quarter graduate credit hours beyond a master's degree in engineering. At least 30 of these credit hours must be for

graduate coursework beyond a master's degree. The program must be completed with a minimum grade point average of 3.0.

The following requirements must be satisfied to complete the requirements of the Ph.D. in engineering degree:

• Complete at least three courses from the following interdisciplinary core courses:

EGR 701 Linear Systems
EGR 702 Systems Engineering and Analysis
EGR 703 Computation Engineering Analysis
EGR 704 Design Optimization
EGR 705 Design and Analysis of Engineering Experiments

• Complete the requirements of the Program Qualification. Students must complete the Ph.D. core courses satisfactorily and demonstrate satisfactory performance in basic engineering principles.

• Complete courses in a major specialization area—at least 24 credit hours of 700-level or above courses must be taken in electrical, mechanical, materials, biomedical or human factors engineering, or in a research focus area.

• Complete courses in a breadth area—at least 12 credit hours of graduate credit must be taken in research focus areas that are outside the student's major specialization area.

• Complete at least 8 hours of graduate credits in mathematics (MTH) or statistics (STT).

• Complete 6 credit hours of EGR 891 seminar courses. Students may apply to earn up to two hours of seminar credit through qualifying presentations at national or international conferences (one qualifying presentation earns one credit hour).

• Complete at least 12 credit hours of course work in the focus area selected for the dissertation research. Note: This requirement might not involve additional hours since these hours could be included in the major or breadth requirements.

• Satisfactorily complete a Candidacy Exam and Research Proposal Defense as defined and judged by the student's research focus area and/or dissertation committee. The dissertation research broadly falls into one of the seven focus areas below:
o Computational Design and Optimization
o Controls and Robotics
o Electronics, Microwave, VLSI, and Nanotechnology
o Industrial and Human Systems
o Materials and Nanotechnology
o Medical and Biological Systems
o Sensor Signal and Image Processing

• Complete at least 45 credit hours of dissertation research and submit a doctoral dissertation. A maximum of 60 credit hours of dissertation research may be applied toward fulfilling the degree requirements.

• Submit at least one substantial, original paper based on the dissertation research to a refereed, archival journal before approval is granted for the dissertation.

• Present a one-hour dissertation seminar through the seminar course, EGR 891.

• Successfully defend the doctoral dissertation as judged by the student's dissertation committee.

Facilities

Modern laboratory facilities provide ample equipment for instructional support and research in a number of areas. The college manages and maintains a number of computer systems and laboratories that are available to students. These include Sun Microsystems servers and workstations, several Linux-based high performance computing clusters, and numerous networked Linux and Windows PC's. Access is also available to the Ohio Supercomputer Center via the Ohio Academic and Research Network (OARNET) and Internet2.

Faculty

The program is a collaborative effort in the College of Engineering and Computer Science. Program faculty at Wright State reside in the departments of biomedical, industrial and human factors engineering; computer science and engineering; electrical engineering; and mechanical and materials engineering.

Graduate Assistantship

Teaching assistantships are available on a competitive basis for students who have established strong academic credentials and can demonstrate good communication and teaching skills. A number of departmental research assistantships are awarded annually based on exceptional performance or potential. Additional graduate support is available in the form of assistantships associated with research projects of the faculty. Scholarships are also available from the Dayton Area Graduate Studies Institute (DAGSI). Application forms for teaching and research assistantships are available from the department for students admitted to the graduate program. The online application form for DAGSI scholarships is available at www.dagsi.org.

Research

The program supports research in seven focus areas: computational design and optimization; controls and robotics; electronics, microwave, VLSI, and nanotechnology; industrial and human systems; materials and nanotechnology; medical and biological systems; and sensor signal and image processing.

Recent and current sources of research support include federal agencies, military agencies, the Ohio Third Frontier, and local industries. Research at Wright State is not limited to on-campus facilities. Several industrial laboratories, Wright-Patterson Air Force Base laboratories, the Air Force Research Laboratory at Wright-Patterson Air Force Base and the laboratories of other local and regional universities are involved in joint research efforts with Wright State University.

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English Language and Literatures

Introduction

The Department of English Language and Literatures offers a flexible M.A. program designed to meet various needs, including those of prospective or practicing high school or college English teachers, ESL specialists, professional writers, and predoctoral students. The program is structured around work in language, literature, and writing. Courses are regularly available in the standard areas of literature, linguistics, composition/rhetoric, professional writing, and gender studies, as well as in nontraditional and interdisciplinary studies. Elective options allow students to design programs to meet their educational goals. In addition to the course and thesis options, special options allow students to combine courses in literature or language with work in creative writing, professional writing, technical writing, women's studies, or the teaching of writing and literature, among other options. The program in TESOL (Teaching English to Speakers of Other Languages), which includes linguistics and prepares students to teach English to nonnative speakers, may be pursued as an elective option, as an endorsement for certified public school teachers, or as a concentration in itself. Details about the different offerings in the TESOL program are available in the departmental office. Interdisciplinary options allow work in programs like reading, communications, religion studies, or history. Internships within the various options prepare students for professional writing careers, for college teaching, or for positions in special collections, archives, and private and rare book libraries by offering on-the-job experience at appropriate sites. Full-time or part-time study is possible.

Admission

Regular
In addition to meeting the admission requirements of the School of Graduate Studies, applicants for regular standing in the M.A. program in English must present either an undergraduate major in English from an accredited college or university with a major average of 3.2 or better (on a 4.0 scale), or five appropriate upper-division courses in English with an average of 3.5 or better in those classes. Applicants must also present an academic paper on a subject in English using secondary sources and an overall undergraduate grade point average of 3.0 or better. Applicants with deficiencies in their undergraduate preparation may be required to take additional courses.

Conditional
Applicants whose overall grade point average is between 3.0 and 2.7 may be admitted to conditional standing by action of the English department graduate committee if they meet the other requirements above. To attain regular standing, students must be reviewed by the graduate committee and must earn a grade of B or better in each of the first three graduate courses (12 credit hours) taken.

Upon petition of the student seeking admission, reasonable exceptions to these

requirements may be made for sufficient cause.

International Students
It is essential that applicants for an M.A. in English be able to demonstrate their proficiency in written and spoken English. Nonnative speakers of English must obtain a TOEFL score of IBT 100/CBT 250/PBT 600, or for conditional admission, 80/213/550. Students will be tested upon beginning the program and may be required to take ESL courses to improve their English skills.
Nondegree students enrolled in English graduate courses are subject to review and approval by the English department graduate committee.

Advising

No student should pursue graduate work without departmental advising. Both full- and part-time students should consult regularly each quarter with the director of graduate studies in English, the department's graduate advisor. Students taking graduate English courses who are not enrolled in the M.A. program should also consult the director of graduate studies to determine the courses that will best meet their needs.

Degree Requirements

The master's program in English comprises three concentrations. The concentration in literature enables students to increase their knowledge of English and American literature and to improve their critical skills and their grasp of scholarly method. The concentration in composition and rhetoric provides training in writing theory and pedagogy. The concentration in TESOL provides those who wish to teach ESL with thorough grounding in linguistics, language acquisition theory, and classroom practice. To meet these goals, the program uses three groups of courses:

The 600-level courses offer widely varied topics in literature and language and are especially suitable for students wishing to extend their knowledge of English and American literature, critical theory, writing pedagogy, and linguistics.

The 700-level core courses provide students with the necessary scholarly and critical skills for graduate-level work. All students in the concentration in literature are required to take both ENG 701 and 702; students in the concentration in composition and rhetoric are required to take both ENG 700 and 711; students in the concentration in TESOL are required to take both ENG 700 and 714.

The 700-level seminar courses offer opportunities for intensive and specialized scholarly and critical study on a broad range of specific literary and linguistic topics; three seminars are required of all students in the program.

Additional elective courses are available in literature, language, and writing.

All students are required to submit a graduate portfolio.

Graduate Portfolio
During the last quarter in the program, a candidate for a degree must submit a portfolio that includes a cover essay and an independent paper. Every candidate must successfully fulfill the graduate portfolio requirement in order to receive a degree.

Details concerning the portfolio are available from the Department of English Language and Literatures.

Thesis
Students who elect the thesis option or the creative writing thesis option are required to

enroll for 8 quarter hours of credit under ENG 799 and prepare a thesis or, in the case of creative writing students, a work of imaginative literature, under the supervision of an advisor approved by the director of graduate studies in English. This thesis will be read and approved by the candidate's committee, which will be chaired by the candidate's thesis advisor.

Certificate Programs in English
Wright State University offers graduate certificate programs in professional writing, technical writing, Teaching English to Speakers of Other Languages (TESOL), and Teaching English as a Foreign Language (TEFL). For more information about these certificates, contact the Department of English Language and Literatures, or visit http://cola.wright.edu/Dept/

Graduate Endorsement in TESOL
For information about the endorsement in TESOL, which enables the recipient to teach English as a second language to students in grades pre-K-12 in conjunction with state of Ohio licensure, students should contact the director of TESOL, the College of Education and Human Services, or visit http://www.wright.edu/cola/Dept/eng/tesol/.

Language Requirement
A reading knowledge of a modern foreign language is not required of any student but is strongly recommended for students contemplating additional graduate work at the doctoral level. An adequate reading knowledge can be demonstrated either by course work or an examination that certifies competence at the third year level.

Faculty

Professors
Peter S. Bracher (Emeritus), Victorian literature, English novel
Richard H. Bullock, Director of writing programs
Norman R. Cary (Emeritus), world literature in English, non-Western literature
Robert M. Correale (Emeritus), Chaucer, Middle English literature
John F. Fleischauer (Emeritus), Renaissance literature, classical rhetoric
James R. Guthrie, American literature
O. Elizabeth Harden (Emerita), English Romantic literature, English novel
Lillie P. Howard (Emerita), African American literature, eighteenth-century novel, Jane Austen
James M. Hughes (Emeritus), American literature, American studies, popular culture
Lawrence E. Hussman (Emeritus), American literature, naturalism
Joe Law, composition and rhetorical theory, Victorian literature
Nancy Mack, English education, writing theory
Martin Maner (Emeritus), eighteenth-century English literature
Barry Milligan, Director of Graduate Studies in English, nineteenth-century British literature, Romantic literature
Gary B. Pacernick (Emeritus), creative writing, modern poetry
Mary Beth Pringle, modern novel; women's literary studies; professional, business, and technical writing
Martha C. Sammons (Emerita), technical writing, fantasy literature
David Seitz, composition studies, rhetorical theory
Donald R. Swanson (Emeritus), nineteenth- and twentieth-century English literature, English novel
Thomas R. Whissen (Emeritus), modern British literature, comparative literature, English novel

Associate Professors
Angela Beumer Johnson, Director of ILA, English education, integrated language arts

Cecile W. Cary (Emerita), Shakespeare, Renaissance studies
Deborah Crusan, TESOL, ESL, assessment, applied linguistics
Erin Flanagan, Creative Writing
Chris Hall, Director of TESOL, ESL composition, computers and writing
John Haught, TESOL, education
S. Lynette Jones, African-American literature, American literature, women writers
Henry S. Limouze, Milton, seventeenth-century literature, linguistics
Carol S. Loranger, Chair, American literature, critical theory
Marguerite G. MacDonald (Emerita), TESOL, linguistics
Annette Oxindine, twentieth-century British literature, feminist criticism
Alpana Sharma, postcolonial literature and theory, feminist literature and theory, critical theory, U.S. multi-ethnic literature
Kelli Zaytoun, Director of Women's Studies, feminist theory, memoir

Assistant Professors

John Haught, TESOL, education
Sally Lamping, English Education, Integrated Language Arts, Urban Education
Carol Mejia-LaPerle, Renaissance literature
Andrew Strombeck, American literature, literary theory

Financial Assistance

The Department of English Language and Literatures awards a limited number of graduate assistantships annually to qualified students. Assistants are usually assigned teaching responsibilities. Assistantships may be renewed for a second year, and assistants can complete the requirements for a degree in two academic years.

International students who wish to apply for teaching assistantships must demonstrate near-native proficiency in English by obtaining a TOEFL score of IBT 100/CBT 250/PBT 600. Nonnative speakers of English will also have to demonstrate oral proficiency through a departmental test.

Course of Study

Program of Study: Concentration in Literature

Core Courses	8
ENG 701 Methods and Materials of Research in Literature	4
ENG 702 Theory and Practice of Literary Criticism	4
Additional Courses	20
Five 700-level courses, at least three of which must be seminars: ENG 720, 730, 740, 750, 760 (prerequisite ENG 701)	
Elective Options (see below)	20-22
Total	48-50

Program of Study: Concentration in Composition and Rhetoric

Core Courses	8
ENG 700 Methods and Materials of Research in Writing and Language	4
ENG 711 Rhetoric	4
Additional Courses	20

Five 700-level courses: at least three must be seminars, and at least two must be seminars in writing and/or language:	
ENG 770, 780 (prerequisite ENG 700)	
Elective Options (see below)	20-22
Total	48-50

Program of Study: Concentration in TESOL	
Core Courses	8
ENG 700 Methods and Materials of Research in Writing and Language	4
ENG 714 Discourse Analysis	4
700-level Courses	20
ENG 770 TESOL Listening and Speaking	4
ENG 780 TESOL Reading and Writing	4
Three additional 700-level courses in writing or language, at least one of which must be a seminar (prerequisite ENG 700)	12
600-level courses in TESOL	24
ENG 681 Theory of ESL	4
ENG 682 TESOL Grammar	4
ENG 683 TESOL Assessment	4
ED 660 (658* for endorsement) Practicum	4
either	
ENG 684 TESOL Practices & Materials	4
ENG 683 Sociolinguistics	4
or	
ENG 674 TEFL Practices & Materials	4
ENG 675 TEF: Theory & Culture	4
Total	52

*ED 658 is required for Endorsement in TESOL.

Details about adding a TESOL endorsement to the M.A. in TESOL are available in the departmental offices. The endorsement in TESOL enables the recipient to teach English as a second language to students in grades for which the candidate is licensed. It is attached to the existing state of Ohio teaching licensure in a related field.

Elective Options

Students may satisfy the Elective Option requirement for the Literature or Composition and Rhetoric concentrations by taking any one of the following groups of courses:

Course Option	
Five additional English courses at the 600 or 700 level	20
Interdisciplinary Option	
One or two additional English courses at the 600 or 700 level	4-8
Four or five graduate courses from outside the department	12-16
Thesis Option (contact graduate director before choosing this path)	
Three additional courses at the 600 or 700 level	12
ENG 799 Thesis (total of 8 credits required)	8
Creative Writing Option	
Creative Writing Seminar	
ENG 692 Poetry Writing Seminar	
or	
ENG 693 Fiction Writing Seminar	

Two courses chosen from those in creative writing (e.g. ENG 692, ENG 710)

Two more courses in selected other courses in creative writing (memoir, creative non-fiction, multi-genre folklore), creative process, contemporary literature, aesthetics or literary criticism

or

ENG 799 Thesis (8 hours)

Note: ENG 692 and 693 may count up to three times (12 hours) for credit toward the M.A. degree. While each may be taken three times for credit, no more than 12 hours of such credit will count on any student's program of study.

Archives and Records Management Option

HST 687 Introduction to Public History	4
HST 711 Introduction to Archives and Manuscripts	4
HST 714 Advanced Programs in Archival Work	4
HST 730 Archival Records Technologies	2
HST 740 Information Management	2
HST 715 Historical Management Internship	5
HST 720 Project	1

Note: Upon successful completion of these courses, students are eligible for a certificate in Archives and Records Management from the Department of History. Students must fill out a certificate application with the Director of Public History.

Museum Studies Option

HST 687 Introduction to Public History	4
HST 712 Museum Administration and Collections	4
HST 713 Museum Interpretation and Exhibits	4
HST 725 Topics in Public History: Decorative Arts	4
HST 715 Historical Management Internship	5
HST 720 Project	1

Note: Upon successful completion of these courses, students are eligible for a certificate in Museum Studies from the Department of History. Students must fill out a certificate application with the Director of Public History.

Technical and Professional Writing Option

Prerequisite: ENG 333/533 Fundamentals of Technical Writing

Both

ENG 600 Topics in Computers and Professional Writing	4
ENG 602 Professional Editing	4

Either

ENG 605 Topics in Technical and Professional Writing	4

or

ENG 604 Short Topics in Technical, Business, and Professional Writing

Two of the following courses	8

*ENG 654 Feature Story Writing (also COM 654)

*ENG 658 Editing for the Media (also COM 658)

ENG 712 Style in Writing

ENG 717 The Study of Writing

*ENG 718 The Study of Professional Writing

ENG 711 Rhetoric (if not taken as a core course)

*ENG 795 Internship

MBA 740 Legal and Ethical Decision Making

MBA 750 Leading Teams and Organizations

MGT 703 Seminar in Human Resources Management

Note: Students completing the core courses and ENG 700 or 701, or any one of the starred (*) courses, with a GPA of 3.2 or better are eligible for a Certificate in Technical and Professional Writing upon successful completion of a certificate portfolio. See Director of Writing Programs for details.

Women's Studies Option

ENG 720 Women's Studies through Literature	4

Four or five more graduate-level courses in English or other disciplines chosen from the list of approved graduate-level courses for WMS available from the director of Women's Studies. Four to eight credit hours of ENG 799 Thesis may substitute for two to three of these courses provided the thesis is focused on topics relevant to

Women's Studies.	16

Completing the option can also lead to a graduate certificate.

Contact the office of Women's Studies or visit their Web site for more information about the certificate: http://www.cola.wright.edu/wms/WMSPRGMS.HTM/

TESOL (Teaching English as a Second Language) Option*

ENG 681 Theory of ESL	4
ENG 682 TESOL Grammar	4
ENG 683 Sociolinguistics	4
ENG 684 TESOL Methods & Materials	4
ENG 687 TESOL Assessment	4
ENG 660 Practicum	2

*These 22 hours constitute a certificate in TESOL as well as an elective option in the English M.A. program.

TEFL Certificate*	20
ENG 678 Introduction to Linguistics	4
ENG 684 TEFL Practices & Materials	4
ENG 683 TEFL Theory and Culture	4
ENG 677 Workshop in TEFL	4
ENG 660 Practicum in TEFL	4

*The TEFL Certificate is designed for those who wish to teach in a foreign-language environment. Courses leading to the certificate are offered during summer term and can be completed in one quarter.

Communication Options

Organizational Communication Option

This track is designed to develop or enhance applied communications skills appropriate to work in organizations in the public and private sectors.

Required	16

COM 741 Principles and Application of Communication Theory

COM 643 Interviewing

COM 647 Organizational Communication

COM 651 Communication Consulting and Training

Elective(s)	4-6

One or two communication courses chosen by the student and approved by the departmental advisor.

Mass Communication Option

This track is designed to develop or enhance applied communication skills appropriate to work in the mass media of radio, television, print journalism, cable, and videotape.

Required	16

COM 741 Principles and Application of Communication Theory

COM 654 Feature Story Writing

COM 658 Editing for the Media

COM 662 Mass Media Law and Regulation

Elective(s)	4-6
One or two communication courses chosen by the student and approved by the departmental advisor.	
Communications Studies Option	
This track is designed to allow students to design a program of study that coherently complements the English curriculum and allows for the development of applied communication skills or the enhancement of theoretical sophistication in the communicative arts.	
Required	4
COM 741 Principles and Application of Communication Theory	
Elective(s)	16-18
Communication courses chosen by the student and approved by the departmental advisor.	
Option in Teaching Writing and Literature	
ENG 716 The Study of Literature	4
One of the following:	4-6
ENG 703/704 Teaching College Composition	
ENG 717 The Study of Writing	
One of the following:	4
ENG 711 Rhetoric	
ENG 712 Style in Writing	
ENG 717 The Study of Writing	
One of the following:	4
ENG 721 Teaching Gender Studies	
ENG 731 Teaching Major Writers	
ENG 741 Teaching Literary Genres	
ENG 751 Teaching Cultural Periods	
ENG 761 Teaching Literary Problems	
Supervised Classroom Teaching Experience:	4
ENG 795 Internship in Teaching or another course chosen in consultation with the graduate director	

Graduate School
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Please send comments to Denise Thomas-Hoskins.

Graduate Programs

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Environmental Sciences Ph.D. Program

Introduction

The mission of the Doctor of Philosophy program in Environmental Sciences is to meet local, state and national needs for outstanding, interdisciplinary-trained graduates who will assume positions of responsibility in industry, government, and non-government organizations. The Environmental Sciences Ph.D. program is designed to develop environmental scientists who can function as researchers or high-level managers. This degree is awarded for demonstrated scholarly excellence in study and research that provides a significant contribution to the complex field of the environmental sciences.

This program is unique in focus, building on a core group of program faculty with recognized expertise in the departments of Biology, Chemistry, Geological Sciences, Physics, Pharmacology/Toxicology and Mathematics and Statistics. This interdisciplinary Ph.D. program consists of three areas of excellence: 1) Environmental Biology: Genes, Organisms and Ecosystems, 2) Environmental Earth Sciences and 3) Environmental Chemistry. These areas of excellence will provide students with high-demand environmental skills that are interdisciplinary-based yet well grounded in more traditional areas of environmental biology, chemistry, toxicology, geophysics and hydrogeology.

For updated information on the Environmental Sciences Ph.D., please call the Environmental Sciences Ph.D. Program Office at (937) 775-3273, or consult our Web site at: www.wright.edu/academics/envsci/

Admission

Entrance Requirements

A student will be admitted to the Environmental Sciences Ph.D. program with a baccalaureate degree or a master's degree from a supporting discipline (e.g., biology, chemistry, geology, or physics); satisfaction of the admission requirements as set forth by the School of Graduate Studies; and a record that indicates potential for a career in environmental sciences, as evaluated by the program's Admissions Committee (consisting of program faculty from participating departments). Students should enter the program with knowledge of one of the supporting sciences and having successfully completed biology, inorganic and organic chemistry, physics, statistics, and calculus. If a student is deficient in one of these areas, the Admissions Committee may recommend the undergraduate courses that should be completed during the first year. Determining deficiencies will be dependent on the student's area of focus.

Admitted students will be expected to demonstrate strong academic ability. Submission of Graduate Record Examination (GRE) scores is required. International students must have a TOEFL score of at least 600/250 computer and 100 internet/6.5 IELTS.

Degree Requirements

Students are asked to master a series of core courses, advanced content courses, seminars, and laboratory rotations (see Curriculum below). These serve as an interdisciplinary base for the development of dissertation research. The institution awards the degree when the student satisfactorily completes the required work.

Waiver of Program Requirements

Students may petition to be exempted from all or part of the core curriculum, usually by scoring a passing grade on an appropriate proficiency examination. Students with a master's degree in a relevant field of study will be exempted from appropriate course requirements and 45 credit hours. Students may also petition for waiver of credit for previous graduate courses taken in another accredited program. Advanced course credit of up to 12 credit hours may be waived providing (a) the grade attained in each course is a B or better, (b) the course was taken within four years of the actual waiver, and (c) the course relates to the area of concentration chosen in this program. Petitions for obtaining credit for laboratory experiences may be made, subject to the same credit hour limitations and time constraints as for courses.

Petitions for exemption or waiver should be submitted to the program director, who will make the final decision, and who may, if necessary, seek a recommendation from the Curriculum Committee.

Dissertation
Each student chooses a faculty member to guide and direct the dissertation research on a daily basis. In addition, a supervisory committee is formed to periodically review the student's progress. The relationship between the student, the faculty advisor, and the committee is central to the program. The committee determines when the research may be considered complete and must approve the written dissertation, as well as the student's public defense of it. The committee certifies to the program director the competency and achievement of the dissertation.

Faculty

The program is a cooperative effort among departments within the College of Science and Mathematics and the Department of Computer Science and Engineering in the College of Engineering and Computer Science. Program faculty at Wright State reside in the departments of Biochemistry and Molecular Biology, Biological Sciences, Chemistry, Computer Science and Engineering, Earth and Environmental Sciences, Mathematics and Statistics, Pharmacology and Toxicology, and Physics.

Biochemistry and Molecular Biology Department

Michael Leffak, molecular genetic analysis of proteins and DNA involved in chromosome replication

Biological Sciences Department

James P. Amon, wetland ecology, wetland microbial ecology, bioremediation, phytoremediation, wetland restoration
Larry G. Arlian, medical entomology, immunoparasitology, physiology
Volker Bahn, determinants of species distribution and changes in distribution with changese in land use and climate
Donald Cipollini, Jr., plant physiological ecology, molecular and chemical ecology
David L. Goldstein, comparative physiology of osmoregulation, physiological ecology, ornithology

Barbara Hull, evaluating environmental toxicants using an invitro skin model
Dan E. Krane, molecular and genome evolution; human population substructuring
Jeff Peters, molecular ecology, phylogeography, behaviorial ecology, molecular evoluation
Thomas Rooney, plant community ecology, ungulate impacts on forest ecosystems, biodiversity loss
James R. Runkle, plant ecology, general ecology
John Stireman, insect ecology and evolutionary biology, community ecology, speciation phylo-genetics
Yvonne Vadeboncoeur, aquatic ecology, ecosystem ecology
Michele G. Wheatly, crustacean physiology, calcium transport

Chemistry Department

Rachel Aga, molecular dyanamics and Monte Carlo simulations
Roger K. Gilpin, Mead Endowed Chair of Environmental Sciences, analytical chemistry
Steven R. Higgins, environmental chemistry, surface-solute interactions, contaminant transport dynamics
Susan Lunsford, development of chemical sensors to detect biological toxins of interest
Audrey E. McGowin, analytical and environmental chemistry
Idana Pavel, physical chemistry and bionanotechnology
Paul G. Seybold (chair), physical and biophysical chemistry
Kenneth Turnbull, organic and bio-organic chemistry

Computer Science and Engineering Department

Michael Raymer, bioinformatics, proteomics, genomics and computational biology

Earth and Environmental Sciences Department

Abinash Agrawal, contaminant hydrogeology, site remediation
Christopher Barton, analysis and forecasting of nonlinear natural systems using the mathematics of complexity
Huntting W. Brown, environmental management, environmental law
Songlin Cheng, hydrogeochemistry, isotope hydrology, geographic information systems
David Dominic, clastic sedimentology, stratigraphy
Bryan Gregor, modeling the sedimentary cycle
Chad Hammerschmidt, aquatic biochemistry, trace metal cycling and contamination
Ernest C. Hauser, near surface geophysics, subsurface imaging
Robert W. Ritzi Jr., hydrogeology, hydrogeological modeling
Doyle Watts, seismic data acquisition and processing, astrogeology, remote sensing

Mathematics and Statistics Department

Chaocheng Huang, differential equations and its applications in geology, particle dynamics, fluid dynamics and composite materials
Thaddeus Tarpey, statistical issues with identifying placebo response, pet imaging

Medical Science

Richard Henderson, decompression sickness, cardiorespiratory resuscitation, breath chemistry

Pharmacology and Toxicology Department

David Cool, hypothalamic-pituitary-pancreas peptide hormone synthesis, processing, storage, secretion and function diseases
Jim McDougal, biologically based pharmacokinetic modeling of chemical interactions with

skin
Marianna Morris, cardiovascular and endocrine toxicology
Courtney Sulentic, immunotoxicology

Physics Department

Brent Foy, mathematical modeling of biosystems
Allen Hunt, environmental geophysics
Sarah Tebbens, environmental geophysics
Doug Petkie, spectroscopy, chemical physics, remote sensing

Psychology

John Flach, clastic semimentology, stratigraphy

Financial Assistance

Graduate assistantship and fellowship support is available to students on a competitive basis. Students awarded support are eligible for stipends and remission of tuition fees the first two years. The Fellowship is for $22,660(plus tuition remission) on a 12 month basis. The first year is a Research Assistantship (12 months), the second a Teaching Assistantship (12 months), and then your major professor supports you with their research funds for the remaining time of your Ph.D.

Students with financial assistantships must register as a full-time student each quarter (at least 12 credit hours of relevant graduate courses).

Course of Study

Foundation Courses	**Credit Hours**
Earth Processes & Environmental Systems	3
Environmental Statistics	4
Risk Assessment & Comm.	4
Env. Bio.:Genes, Organisms, and Ecosystems	3
Complexity in Environmental Systems	4
Environmental Chemistry	3
	21
Lab Rotation I	4
Lab Rotation II	4
Perspectives in Env. Sci. (3 qtrs)	3
	11
Environmental & Research Ethics	2
(Plus one more of the following)	
Environmental Policy & Regulation	3
Environmental Mgmt. & Economics	2
Hist. & Social Aspects of Environmentalism	3
Environmental Resource Sustainability	3
	4-5

Total	**36 or 37**
Environmental Problem Solving (Capstone)	2
Independent Topics & Research	1-4
Advanced Electives	15
Internship Options	5
Advanced Electives	15 (Min)
Dissertation Research	45 (Min)
Total	**135**

Graduate School
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Graduate Programs

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History

Introduction

The purpose of the Master of Arts program in history is to provide broad but intensive training for students who intend to pursue careers as professional historians, whether in teaching, research, or archival or historical preservation fields, or for those who desire strong historical backgrounds for other vocational or avocational objectives. The program offers opportunities for specialized study and research, but without neglecting the breadth that characterizes historical work at its best. In recognition of the fact that students' interests and goals are varied, the program provides a choice of three plans (see the following details), all of which lead to a Master of Arts degree. This program is approved by the Ohio Board of Regents.

Admission

Decisions regarding admission to the graduate program of the Department of History, continuation in the program, and dismissal from it will be made by the department's graduate studies committee. The candidate must meet the requirements of the graduate school, hold a bachelor's degree from an accredited institution, and meet a minimum grade point average (3.0 or better in history and 3.0 overall). Each candidate shall also include a statement of goals, three letters of recommendation, and a writing sample. **The GRE is not required.** In special cases, a candidate with a grade point average below 3.0 may be admitted on conditional status with the approval of the department's graduate studies committee. Conditional status may be granted upon a favorable committee recommendation based upon the candidate's application and interview with a director of the graduate program.

A strong candidate will have substantial undergraduate course work in history, or a major in the field. An applicant without such a background may enter the program but may be required to take deficiency work as prescribed by the graduate studies committee.
A graduate student in any college of the university may take up to three graduate history courses without prior approval of the Department of History. Any student desiring more than 12 credit hours of graduate history courses must secure the approval of a director of the graduate program.

Candidates for admission should abide by the following deadlines: July 30 for admission in the Fall Quarter, November 1 for admission in the Winter, and February 15 for admission in the Spring.

Degree Requirements

The Master of Arts degree can be earned through one of three plans. The Thesis Plan is intended primarily for those students who expect to continue graduate work or who need or

desire the full range of professional experience, including intensive research and writing. It assures training in research techniques and the preparation of scholarly papers, culminating in the submission of a thesis. The *Course Intensive Plan* is intended primarily, but not exclusively, for students not expecting to pursue doctoral studies. The Public History Plan is a program designed for graduate students who are primarily interested in careers in historical or archival administration, or in museum management. It provides students with both theoretical and practical training in these areas.

For the purpose of planning advanced courses and seminars, each student should consult a graduate director regularly. A student receiving two Cs will be placed on academic probation and will be required to appear before the graduate studies committee to justify his or her continued participation in the program. Upon review of the student's progress, the graduate studies committee may dismiss the student from the program.

Faculty

Professors

Jacob H. Dorn, United States: 20th century, intellectual, religious
Edward F. Haas, United States: South, urban and public history, Civil War
Paul D. Lockhart, Early Modern Europe: Scandinavia
John W. Sherman (Chair), Latin America: Mexico, 20th century, political

Associate Professors

Martin Arbagi (Emeritus), Ancient: Roman, Medieval, and Byzantine
Susan B. Carrafiello, Modern Europe: Italy
Carol Engelhardt, Modern Europe: Great Britain, gender, religious
Nancy Garner, United States: Women's, West
Barbara Green, United States: African American, South, Reconstruction
Marjorie McLellan, United States: Public History, social
Roy L. Vice, Early Modern Europe: Reformation, Germany

Assistant Professors

Awad Halabi, Middle East
Noeleen McIlvenna, United States: colonial, revolution
Timur Pollack-Lagushenko, Europe: Medieval, France
Sean Pollock, Europe: Russia, empires
Harvey M. Wachtell (Emeritus), United States: colonial, Jacksonian Era, Ohio
Jonathan Winkler, United States: diplomatic, military

Financial Assistance

The Department of History awards a limited number of tuition scholarships and assistantships annually to qualified students. Assistants are usually assigned to faculty members to aid in research, class preparation, grading papers, and for a variety of other services. Assistants in Public History are often assigned to Archives. Assistantships may be renewed for a second year. Ordinarily, an assistant can complete requirements for a degree in two academic years. Most assistantships begin in the fall quarter, though some occasionally open up in Winter or Spring. Applicants for an assistantship for the fall should submit their application by no later than April 15 in order to assure consideration.

Course of Study

Thesis Plan Requirements

Students must meet all requirements of the School of Graduate Studies, show a reading knowledge of a foreign language when deemed necessary for thesis research as determined by their thesis advisor, and successfully defend a thesis. Students select two

fields of concentration, totaling 40 credit hours. Each field of concentration will have a minimum of 16 hours of course work, with a minimum of two 700-level courses. A minimum of 20 hours must be 700-level course work, including the required HST 700 (Historical Methods). In addition, near the end of their studies, and after submitting a prospectus approved by the student's thesis committee, students will register for 4-12 hours of HST 799 (Thesis). HST 799 will conclude with a successful oral defense of the thesis before a panel of three professors, chaired by the thesis advisor. Students may petition the graduate studies committee to grant exceptions to field of concentration or 700-level course requirements

Possible fields of concentration are as follows:

1. United States to 1877
2. United States since 1877
3. Ancient World and Europe to 1600
4. Europe since 1600
5. Africa, Asia, and Latin America

History Courses Numbered 700-709	20 (minimum)
History Courses Numbered 600	20
History 799 Thesis	4-12
Total	52

Course Intensive Plan Requirements

Students must meet all requirements of the School of Graduate Studies. Students select two fields of concentration (see above), totaling 52 hours. There must be a minimum of 20 hours in each field of concentration; there should be a minimum of 12 hours of 700-level courses in each field of concentration as well as the required HST 700 (Historical Methods). Students must seek the consent of a graduate director before taking course work outside their fields of concentration. Students may petition the graduate studies committee to grant exceptions to field of concentration or 700-level course requirements. The student will submit a revised paper that incorporates primary sources, between 25 and 30 pages in length, in the final quarter of their studies as an exit project under this plan.

History Courses Numbered 700-709	28 (minimum)
History Courses Numbered 600	24
Total	**52**

Public History Plan Requirements

The Public History Plan Program at Wright State University integrates a traditional American history curriculum with courses taught by professionals in archives, museum studies, and historic preservation, an internship, and a project leading to a Master of Arts degree in history with a specialization in public history.

Required Academic Core Courses (24 credits)

Public historians are historians who apply their skills and knowledge outside of academic or classroom settings. Public history students are required to complete 24 hours of American history courses including at least 12 hours of seminar and 12 hours of 600-level courses in American history. Students completing a public history program must complete a course that introduces historical research methods (HST 700). Public history students will complete 56-58 credit hours.

Required Public History Courses	18
Public history students must complete the following core requirements:	
HST 725 Introduction to Public History	4
HST 710 Introduction to Archives and Manuscripts	4
HST 712 Museum Administration and Collections	4
HST 715 Historical Management Internship	5
HST 720 Project	1

Advanced Public History Course Requirements	8
Students must complete eight credit hours in advanced Public History courses. Students may choose breadth over specialization by taking four credits each in Museum Studies and Archives and Records Management. Students will also have the option to specialize and take eight advanced credit hours in either Archives or Museum Studies.	
HST 714 Advanced Problems in Archival Work	4
HST 730 Archival Records Technologies	2
HST 740 Information Management	2
HST 713 Museum Interpretation and Exhibits	4
HST 727 Topics in Public History: Decorative Arts	4
Electives	**6-8**
Students may select from additional public history or academic history courses including the following Public History electives. With the approval of the Public History Program director, students may take courses in an outside discipline such as art, anthropology, urban and geography, English, education, and business.	
HST 711 Local History Research	2
HST 685 Historic Preservation	4
HST 727 Topics in Public History: Architectural History	4
HST 717 Practica: Archives and Museums	1-2
HST 688 History and New Media	4
Total	**56-58**

Certificate in Museum Studies or Archives and Records Management

Students admitted to selected graduate programs at Wright State University and students who have received a graduate degree in history or in selected disciplines may choose to complete a certificate in either museum studies or archives and records management. Students who have previously earned a graduate degree must be admitted to the School of Graduate Studies with nondegree status. Students wishing to pursue either certificate program must fill out a certificate application with the director of public history.

Required Courses for a Certificate in Museum Studies	
HST 687 Introduction to Public History	4
HST 712 Museum Administration and Collections	4
HST 713 Museum Interpretation and Exhibits	4
HST 725 Topics in Public History: Decorative Arts	4
HST 715 Historical Management Internship	5
HST 720 Project	1
Total	**22**

Required Courses for a Certificate in Archives and Records Management	
HST 687 Introduction to Public History	4
HST 711 Introduction to Archives and Manuscripts	4
HST 714 Advanced Problems in Archival Work	4
HST 730 Archival Records Technologies	2
HST 740 Information Management	2
HST 715 Historical Management Internship	5
HST 720 Project	1
Total	**22**

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Humanities

Introduction

The Master of Humanities program in the College of Liberal Arts provides opportunities for interdisciplinary study for students who wish to pursue individually designed curricula in the humanities. Study leads to a Master of Humanities (M.Hum.) degree.

The program's primary goal is scholarly, intellectual development, and thus serves diverse personal and professional needs. High school teachers who want a content-emphasis graduate degree, persons who seek a career change or a post-retirement graduate degree, and persons who seek a second master's degree in a complementary or even a contrasting field are among the many people who may find this program uniquely suited to their needs. Graduates of specialized undergraduate programs may welcome the breadth provided by this master's degree. Part-time study is the norm; full-time study is also possible.

At the core of the program are three seminars that introduce students to the scope and methodologies of scholarly research in the humanities. In cooperation with the program director, students design a personal program of study to meet their individual academic goals. The program thus has both a specific focus on the humanities and wide flexibility within the broad curriculum of the College of Liberal Arts. While anchored in the humanities, the program encourages selection of courses from supplemental areas of study.
The range of possible programs of study is intentionally wide. A student might choose to study the role of music in African American culture or the status of women in American religion. Another student might study the interrelations of art and philosophy in modern German (or French) culture or the politics and rhetoric of Cicero. The only expectation is that students pursue an interdisciplinary program of study having a focus in the humanities.

Students are encouraged to participate in specialized programs available at the university. For example, students may design a Master of Humanities degree in conjunction with the Women's Studies Program or the African and African American Studies Program. It is also possible for a student to receive a certificate in Women's Studies in conjunction with a Master of Humanities degree. For more information on the Women's Studies certificate, see the Women's Studies Graduate Certificate Program.

Additional information about the Master of Humanities Program and a program handbook detailing policies and requirements are available upon request in the Master of Humanities Office. For more information, see our Web site at http://www.cola.wright.edu/hum/

Admission

Applicants for admission to the Master of Humanities program must present a bachelor's

degree from an accredited college or university with a minimum of 30 semester or 45 quarter hours in liberal arts courses, with an overall grade point average of 3.0 (on a 4.0 scale) in their undergraduate work. Applicants with deficiencies in their undergraduate work may be required to take additional background courses.

Applicants who do not meet the Regular admission requirements but who do meet the Graduate School admission requirements may be granted Conditional admission.

A maximum of three courses, normally not to exceed 12 quarter hours of credit, may be accepted in transfer for work completed at the master's level at other accredited institutions. Such transfer credits are subject to approval by the program as well as to the regulations of the School of Graduate Studies.

Application Procedures

Students must submit as part of the application for the Master of Humanities Program the following items:

(1) Two letters of recommendation.
(2) Statement of purpose. This statement should be approximately 250 words long, and it should describe the applicant's academic background and reason for applying to the Master of Humanities program.
(3) Writing sample. The sample should be approximately five double-spaced pages long, and it should display the applicant's ability for academic writing. For recent college graduates, the most appropriate sample is an undergraduate research paper. For non-traditional age students the writing sample may take another form, such as a report written for an employer.

Students interested in pursuing a Master of Humanities degree with an emphasis in studio art may be asked to present a portfolio of their work to members of the Art Department faculty as part of the admission process.

Advising

Upon admission to the program, each student is advised by the director of the program. While enrolled in the program, all students need to consult with the director at least once each term. In consultation with the director, students will select courses consistent with their programs of study, develop preliminary ideas for their capstone projects, and choose faculty to direct those projects.

Degree Requirements

All Master of Humanities students develop an individualized program of study in consultation with the Program Director. Although this program of study must conform to the academic requirements specified by the program, it emphasizes each student's particular areas of interest.

The program is designed primarily for part-time students; therefore, it incorporates a minimum of prerequisites and sequences and a variety of options. As a result, it is flexible enough to accommodate students who must balance graduate education with the demands of a full-time job.

Faculty

Participating faculty are drawn from departments throughout the College of Liberal Arts. A

list of affiliated faculty and their respective areas of expertise is available upon request in the Humanities Office and from the Internet address http://www.wright.edu/cola/hum/

Director
Ava Chamberlain, associate professor of religion

Financial Assistance

The university awards a limited number of graduate assistantships annually to qualified students. Prospective students may apply to the School of Graduate Studies or to the program director.

Course of Study

The program is designed primarily for part-time students; therefore, it incorporates a minimum of prerequisites and sequences and a variety of options. As a result, it is flexible enough to accommodate students who must balance graduate education with the demands of a full-time job.

Program of Study	**48**
HUM 700, 710, and 720	12
Humanities courses from at least two departments	16-28
Related courses	0-12
Project (HUM 730)	8

The culminating project for the Master of Humanities degree can be either a traditional thesis or a creative work. Those who choose to complete a creative work also write an essay that explains the humanities context of the project. Such creative works may involve the fine or performing arts, creative writing, or other appropriate creative production. Before commencing work on the project, the student must submit a prospectus to be approved by the student's project committee and by the humanities program committee. The project is the capstone of each individually tailored program; it requires students to bring together in an organized fashion the results of particular investigations related to their curriculum.

Master of Humanities with an Emphasis in Music

All students in the Master of Humanities program may take advantage of the resources of the Department of Music. Students with a primary interest in music may design a specialized program of study in consultation with the director of Graduate Studies in Music and the director of the Humanities Program. Students choosing to concentrate in music are required to follow the general parameters of the Master of Humanities degree; within these parameters they may design a program of study with a focus in music history, theory, composition, performance, or other musical specialty.

Program of Study	**48**
HUM 700 and 720	8
HUM 710 or MUS 701	4
Music Theory	6
Music History and Literature	6
Other Studies in Music	8
Electives	8
Project (HUM 730)	8

The culminating project can be either a traditional thesis or a creative project. This project must follow the same general guidelines required of all Humanities projects. As a third option, students concentrating in music may give a recital as their culminating project. Those choosing the recital option must follow the guidelines specified by the Department

of Music. A student handbook detailing the policies and requirements of the Master of Humanities degree with an emphasis in music is available in both the Department of Music and the Humanities Office.

Master of Humanities with an Emphasis in Modern Languages

All students in the Master of Humanities program may take graduate courses in the Department of Modern Languages. Students with a primary interest in modern languages may design a specialized program of study in consultation with the chair of the Department of Modern Languages and the director of the Humanities program. Students choosing to concentrate in Modern Languages are required to follow the general parameters of the Master of Humanities degree; within these parameters, they may design a program of study with a focus in French, Spanish, or German language and literature. For more information, please contact the chair of the Department of Modern Languages, (937) 775-2641.

Program of Study	**48**
HUM 700 and 720	8
HUM 710	4
History Electives	8
Modern Languages Electives	20
HUM 730 (Project)	8

The culminating project may be either a traditional thesis on a subject related to a foreign language, culture, or literature, or it may be a translation accompanied by a contextualized introduction.

The Master of Humanities degree with an emphasis in modern languages is offered in conjunction with our foreign partner universities. Students are strongly encouraged to study for at least one month at a foreign institution and may, in accordance with the Graduate School policy on transfer credit (School of Graduate Studies Policies and Procedures Manual, paragraph 4.71), apply up to 12 quarter hours of classes toward their degree requirements for the Humanities Program.

For more information about the Master of Humanities degree with an Emphasis in Modern Languages, go to: http://www.wright.edu/cola/Prog/humanities/.

Master of Humanities with an Emphasis in Women's Studies

All students in the Master of Humanities program may take graduate courses in Women's Studies. Students with a primary interest in Women's Studies may design a specialized program of study in consultation with the director of the Women's Studies Program and the director of the Humanities program. Students choosing to concentrate in Women's Studies are required to follow the general parameters of the Master of Humanities degree; within these parameters, they may design a program of study with a focus in such areas as feminist theory, women's history, women's literature, feminist performing arts, and women in particular cultural contexts.

Program of Study	**48**
HUM 700 & 720	8
HUM 710	4
Feminist Theory	4
Women's Studies courses	16
Other electives	8
HUM 730	8

The Women's Studies courses and other electives must be from at least two departments and must include at least one course from the categories of women in international or cross-cultural perspectives.

For more information, please contact Dr. Kelli Zaytoun, Director, Women's Studies Program, (937) 775-4818, or kelli.zaytoun@wright.edu.

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Industrial and Human Factors Engineering

Introduction

The Department of Biomedical, Industrial, and Human Factors Engineering offers a program of graduate study leading to a Master of Science in Engineering (M.S.E.) degree with a major in industrial and human factors engineering. The M.S.E. program is broad in scope and emphasizes portable concepts in the design and analysis of complex physical systems using modeling, synthesis, and optimization techniques, and bridges interdisciplinary engineering areas such as controls, robotics, electronics, and communications. The M.S.E. in Human Factors Engineering can also be obtained through E*Course classes. Additional information for the E*Course program can be found at www.cs.wright.edu/bie/dl.
A Ph.D. in engineering with an emphasis in the human factors engineering area is also available. For details, see Engineering Ph.D. program.

Admission

To be considered for admission to the M.S.E.-Industrial and Human Factors Engineering program, students must first satisfy basic requirements of the School of Graduate Studies. This includes having a bachelor's degree in engineering or a related area with an overall undergraduate grade point average of at least 2.7 (on a 4.0 scale) or an overall undergraduate grade point average of
at least 2.5 with an average of 3.0 or better for the last 90 quarter hours (60 semester hours) earned toward the undergraduate degree. International students must have a TOEFL score of at least 550/213 or an IELTS score of at least six. In addition, the program requires students from non-ABET accredited undergraduate programs to submit general GRE test scores. Program admission decisions are based on complete application information including overall academic performance and standardized test scores where applicable.

Collaboration

The Dayton Area Graduate Studies Institute provides collaboration opportunities through the graduate engineering courses, faculty, and research resources of the Air Force Institute of Technology, the University of Dayton, The Ohio State University, and the University of Cincinnati.

Degree Requirements

Students should plan a program of study in consultation with a faculty advisor. The program of study should be finalized by the time the student completes 12 credit hours of graduate study.

The following requirements must be met for the Master of Science in Engineering degree:

1. Completion of 45 graduate credit hours in courses that have prior approval by a BIE graduate advisor.

2. At least 36 of the total 45 graduate credit hours must be engineering or computer engineering courses. At least 24 of these must be human factors engineering courses.

3. At least 24 of the 45 graduate credit hours must be courses numbered 700 or above.

4. At least 6 of the total 45 graduate credit hours must be courses in mathematics, statistics, or computer science.

5. Students may choose either a thesis option or a 45 credit hours graduate advanced course work option. The thesis option consists of a research project satisfying all requirements of the School of Graduate Studies. The final report (thesis) must be completed and successfully defended in an oral examination before the major committee. Up to 12 credit hours of 899, Thesis, may count toward degree requirement of 45 graduate credit hours.

Facilities

Graduate students have access to a wide range of computer systems interconnected by local and wide-area networks. Access is available to three DEC Alpha AXP 4000/610's; numerous Sun, DEC, and Silicon Graphics fileservers and workstations; X-windowing terminals; and personal computers. Access is also available to the Ohio Supercomputer via the Ohio Academic and Research Network (OARNET). In addition, each graduate faculty member has a well equipped research laboratory with a network of heterogeneous computers and peripherals. Please visit http://www.cs.wright.edu/bie/ for details. Also see section on Computing and Telecommunications Services (CaTS).

Faculty

Professors

Jennie J. Gallimore, human factors engineering, human computer interaction, virtual environments, aviation human factors, medical systems
Raymond R. Hill, development and application of optimization, meta-heuristics, and simulation methodologies to problems in various domains such as pilot disorientation, logistics, and resource planning
S. Narayanan (Chair), modeling, interactive systems, simulation, decision aiding
Chandler A. Phillips, human control systems, biomechanical modeling, orthotic and ergonomic engineering
Malcolm L. Ritchie (Emeritus), human factors engineering, engineering psychology

Associate Professor

Frank Ciarallo, modeling of uncertainty in systems, vehicle traffic systems, inventory and supply chain systems
Tarun Goswami, developing wear prediction models for longer lasting total joint replacements and developing materials for such applications
David B. Reynolds, prosthetics/orthotics engineering, biomechanics, biomimetics, pneumatic muscle, biofluid mechanics

Assistant Professors

Misty Gripper, speech intelligibility testing, usability engineering, physical ergonomics, human workload effectiveness Xinhui Zhang, large scale linear and integer optimization in

manufacturing, logistics, service management, and engineering design

Lecturer
David M. Kender, biomedical electronics, human factors engineering

Graduate Assistantship

Assistantships are available to students on a competitive basis. Students awarded assistant-ship support are eligible for stipends and remission of tuition fees. Interest in financial support should be indicated at the time of application.

Research

Faculty research interests focus on three primary areas. Typical activities within these areas include:
Human-Computer Interaction, Human Factors in Aviation, and Usability
• Design of information retrieval systems using cognitive modeling techniques
• Biologically inspired adaptive aiding
• Models and multi-model interfaces for supervisory control
• Development of a model for implementing usability early in the design process
• Modeling human performance through soft computing techniques
• Operational modeling of spatial disorientation effects in flight
• Aviation systems
• Visual information presentation
• Spatial orientation
• Virtual environments
• Adaptive displays
• Display measurement
• Human factors medical systems and processes

Ergonomics and Orthopedic Biomechanics
• Biomechanical modeling in the context of human-machine system design
• Quantitative modeling of the human task informatic transfer function, including the underlying strategy
• Design and optimization methods for industrial ergonomic tasks.

Modeling and Simulation-Based Optimization
• Interactive optimization and logistics systems analysis
• Modeling of swarms of unmanned aerial vehicles
• Modeling of uncertainty in systems
• Large scale linear and integer optimization in manufacturing
• Logistics
• Vehicle traffic management
• Applications in logistics, transportation, manufacturing and supply chain management
• Heuristic development and application for design and optimization

Research at Wright State is not limited to the laboratory facilities on campus. Several industrial companies, laboratories, and Wright-Patterson Air Force Base are involved in joint research efforts with the university and have unique facilities that are available for faculty and graduate research.

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Information Systems

Introduction

The Master of Information Systems degree is designed to meet the educational needs of managerial and technical employee who have IT budgetary, management, or decision-making responsibilities.

The program aims to enable students to understand the following Information Systems domains: technology architectures, project assurance & failure avoidance, enterprise systems, technology strategies, and business continuity & disaster recovery, information ethics & security.

Admission

1. Preferred applicants should have three years of work experience in the field of information systems, information technology, computer science, or a related field which extensively utilizes information systems.

2. Those who currently hold or are on track to assume senior professional responsibility in the field of information systems will be given preference.

3. Applicants must have a bachelor's degree and satisfy the minimum requirements to obtain graduate status (see: http://www.wright.edu/academics/gradcatalog/admissions/).

4. Three professional letters of reference are required.

Degree Requirements

The IS degree program is a one-year, 48-credit hour, lockstep, cohort-based program. The program blends five intensive weekends in-residence with four e-learning segments. The in-residence modules are scheduled between e-learning segments and include case studies, leadership lectures, breakout sessions, and simulation assignments. E-learning segments add learning activities such as interactive cases, pedagogical discussions, and proprietary teaching material built by subject matter experts.

Course of Study

The program consists of ten courses (4 credit hours each) and one capstone project (8 credit hours). The course descriptions are given below.

MIS 788 INFORMATION SYSTEMS STRATEGY (Credits: 4)
Concepts and practices of management information systems for using information in the management of business enterprises are investigated to determine their deployment in

achieving organization objectives.

MIS 790 TECHNOLOGY-ENABLED BUSINESS AND ORGANIZATIONS (Credits: 4)
This course provides a broad overview of the strategies used in technology enabled businesses.The emphasis is on the business applications and characteristics of the technologies that can bring enhanced revenues, cost savings, and broader market reach to organizations.

MIS 791 BUSINESS PROCESS MANAGEMENT (Credits: 4)
This course provides a comprehensive approach for transforming business processes of an organization. It will demonstrate how to keep the renewed processes working at their optimum level through process ownership and performance management.

MIS 792 CUSTOMER RELATIONSHIP MGT AND BUSINESS INTELLIGENCE (Credits: 4)
An in-depth study of customer relationship management (CRM) technologies and data warehouse applications.The special focus is on the application of CRM and data warehouse technologies for managing the customer and data lifecycle.

MIS 793 ENTERPRISE APPLICATION INTEGRATION (Credits: 4)
This course provides a background in the fundamental principles of Enterprise Application Integration (EAI). Different types of Integration projects are explained, including intra-organization Enterprise Application Integration (EAI), Web integration and B2B integration.

MIS 794 ADVANCED DATA MANAGEMENT FOR THE SUPPLY CHAIN (Credits: 4)
The subject surveys concepts of advanced data management for Supply Chain Management.It will address a number of technology enablers of supply chain management including ERP and SCM applications, Web-centric marketplaces, and auction technologies.

MIS 795 IS PROJECT MANAGEMENT
This course is designed to provide the student with the necessary skills to effectively examine the process of managing and developing and implementing information systems projects. This course discusses creating a plan for project development, using effective estimation of size and effort, and executing that plan with attention to productivity and quality. Topics such as risk management, alternative life-cycle models, development team organization, and management of technical people are also discussed.

MIS 796 INFORMATION ASSURANCE (Credits: 4)
This survey course will provide an understanding of communications and IT infrastructures, including their vulnerability as well as the size and complexity of security threats faced by enterprises.

MIS 797 MANAGEMENT OF TECHNICAL SERVICES (Credits: 4)
The objectives of this course are to provide an understanding of the unique challenges inherent in profit delivering service excellence and providing an introduction to state of the art service management thinking.

MIS 798 IT OUTSOURCING AND PARTNERSHIPS (Credits: 4)
This course examines the dynamics of IT partnerships. To manage a global project, project managers need to be experts in defining requirements, managing change, communications, cultural sensitivity, planning and conducting project reviews, and negotiations.

MIS 799 IS MANAGEMENT RESEARCH PROJECT (Credits: 8)
The Capstone IT Project provides students the opportunity to individually explore a problem or issue within the IT field.

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Interdisciplinary Science and Mathematics

Introduction

The Interdisciplinary Science and Mathematics Master of Science in Teaching (M.S.T.) program is designed for K–12 teachers who wish to increase their science and/or mathematics content and pedagogical knowledge in a program specifically designed for teachers. Program content is geared toward middle childhood (grades 4–9) topics. All of the science and mathematics courses are specially designed for teachers and are inquiry-based and integrated with pedagogical issues.

Faculty

Professors
Ann Farrell, Mathematics Education
Susann Mathews, Mathematics Education

Associate Professors
Beth Basista, Physics Education
Suzanne Lunsford, Chemistry Education
Susann Mathews, Earth and Environmental Education
William Slattery, Geological Sciences Education
James Tomlin, Biological Sciences Education

Assistant Professors
Dr. Brian Boyd
Michelle Reed, Mathematics Education

Program Description

Students can choose from three emphases (Science Emphasis, Mathematics Emphasis, or Integrated Science and Mathematics Emphasis). Each emphasis requires 48 quarter credit hours of courses (36 quarter credit hours in the College of Science and Mathematics and 12 quarter credit hours in the College of Education and Human Services). The programs require a pedagogical research project which typically will involve research within a teacher's own classroom. The types of projects can involve curriculum development and piloting, assessment of student understanding, and research into new pedagogical methods among other activities.

Each student, upon admission to the program, will be assigned an advisor from the science and mathematics faculty. The Science and Mathematics Education Committee, in collaboration with the student, will develop a program of study. All Master's Projects must have prior approval of the Science and Mathematics Education Committee. With an advisor's approval, limited course substitutions may be made.

Although many of the courses in the Interdisciplinary M.S.T. program are part of Wright State University's programs in Middle Childhood Licensure, other courses may be necessary for Licensure. Students interested in obtaining Middle Childhood Licensure should contact either Dr. Beth Basista (College of Science and Mathematics, Science Education) or Chris Murphy (College of Education and Human Services, Teacher Education) to determine which additional courses would be necessary.

Questions concerning the Interdisciplinary Science and Mathematics M.S.T. program should be referred to Dr. Beth Basista (Department of Physics) or Dr. Ann Farrell (Department of Mathematics and Statistics).

Course of Study

Interdisciplinary M.S.T. Tracks

Science Emphasis

Two Physics courses from PHY 645, 646, 647	8
Two Chemistry courses from CHM 645, CHM 650	8
Two Earth Science courses from GL 607, GL 615, SM 645	8
Two Life Science courses from BIO 699, BIO 701	8
Pedagogical Research Project (SM 899)	4
Education courses listed as 600 or above with advisor approval	12
Total	48

Integrated Science and Mathematics Emphasis

Select one integrated science and mathematics course from the following	
PHY 645, 646, 647, SM 645	4
Select three science courses from the following	12
Physics from PHY 645, 646, 647	4
Chemistry from CHM 645, CHM 650	4
Earth science from GL 607, GL 615, SM 645	4
Life Science from BIO 699, BIO 701	4
Select four mathematics courses from the following	16
MTE 640, 642, 643, 644, 645, 646, 648	
Pedagogical Research Project (SM 899)	4
Education courses listed as 600 or above with advisor approval	12
Total	48

Mathematics Emphasis

Select two integrated science and mathematics courses from the following	
PHY 645, 646, 647, SM 645	8

Select six mathematics courses chosen from the following MTE 640, 642, 643, 644, 645, 646, 648	24
Pedagogical Research Project (SM 899)	4
Education courses listed as 600 or above with advisor approval	12
Total	48

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International and Comparative Politics

Introduction

The Master of Arts in International and Comparative Politics prepares students who intend to continue their education in a Ph.D. program in international relations, comparative politics, or a related field. The program also provides continuing international education opportunities for those working in the public or private sector. Graduate seminars, independent readings, and practicum opportunities enable students to explore the scholarship in their field and its applications. Students may select from among three specialized areas of study: Peace and Security Studies, International Organizations, and Area Studies. Program students are required to complete or demonstrate a quantitative or foreign language research requirement. The degree culminates in either a traditional thesis or a project developed in consultation with a program advisor. The program now offers a dual degree option with the Master of Public Administration.

Admission

Applicants to the International and Comparative Politics M.A. degree program must meet the graduate school's admission criteria, and should additionally demonstrate in their letter of application letter how their undergraduate and/or professional record will be enhanced by participation in the program. Candidates should also prepare an essay that discusses a current issue or policy related to international affairs or comparative politics. The essay should be approximately 500 words and should use secondary sources.

Faculty

Professors
Edward Fitzgerald, international law, natural resource law
Charles Funderburk, political corruption
December Green, Africa, human rights, gender violence
Donna M. Schlagheck, American foreign policy, terrorism, United Nations
Robert Thobaben (emeritus), political thought
James Walker (emeritus), peace studies

Associate Professors
Liam Anderson, Europe, Central Asia, Russia, weapons of mass destruction, Iraq
Laura Luehrmann, China, East Asia, democratization, social movements
Mark Sirkin (emeritus), Middle East, Israeli-Palestinian relations
Tracy Snipe, Africa, France, radical black thought

Assistant Professors
Chad Atkinson, quantitative methods, research design, international conflict
John Feldmeier, comparative constitutions, politics and ethics

Pramod Kantha, South Asia, comparative political theory, nationalism
Vaugh Shannon, Arab-Israeli conflict, international security, foreign policy decision-making

Instructor
Rashida Hussain, international Law, theory, American foreign policy

Financial Assistance

The ICP program offers several graduate assistantships. Graduate fellowships for both part-time and full-time students may be available through the School of Graduate Studies. Awards of financial assistance are generally for the entire academic year, which begins with the fall quarter. Applications for assistantships are obtained from the ICP office and should be submitted to that office by March 15.

Course of Study

Core Requirements	**12**
PLS 730 Theories in International and Comparative Politics	4
PLS 731 Seminar in International and Comparative Politics	4
PLS 703 Applied Methodology and Research Design	4

Foreign Language/Quantitative Methods	**0-8**

Students pursue either upper language foreign language courses or complete the appropriate sequence in quantitative analysis:

PLS 701 Methodology I	4
PLS 702 Methodology II	4

Electives	**24**

Select one track in consultation with advisor:
Courses related to Peace and Security Studies
Courses related to International Organizations
Courses related to Developed/Developing Nations (Area Studies)

Thesis or Project	**10**
Student selects either in consultation with advisor	
PLS 799 Practicum	1-4
AND	
PLS 798 Graduate Project	6
OR	
PLS 799 Thesis Research	10
Total	**46-54**

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Materials Science and Engineering

Introduction

The Department of Mechanical and Materials Engineering offers graduate programs leading to a Master of Science in Engineering (M.S.E.) and a Ph.D. in Engineering with a major in materials science and engineering. The graduate programs are broad in scope, emphasizing the interdisciplinary nature of the field of materials science and engineering. The program is focused around processing, structure, properties, and performance of advanced lightweight and high temperature materials. For more information, see our Web site at http://www.cs.wright.edu/mme/.

Admission

To be considered for admission to the M.S.E.–Materials program, students must first satisfy basic requirements of the School of Graduate Studies. This includes having a bachelor's degree in engineering or a related area with an overall undergraduate grade point average of at least 2.7 (on a 4.0 scale) or an overall undergraduate grade point average of at least 2.5 with an average of 3.0 or better for the last 90 quarter hours (60 semester hours) earned toward the undergraduate degree. International students must have a TOEFL score of at least 550. In addition, the program requires students from non-ABET accredited undergraduate programs to submit general GRE test scores. Program admission decisions are based on complete application information including overall academic performance and standardized test scores where applicable.

Collaboration

The Dayton Area Graduate Studies Institute provides collaboration opportunities through the graduate engineering courses, faculty, and research resources of the Air Force Institute of Technology, the University of Dayton, The Ohio State University, and the University of Cincinnati.

Degree Requirements

Students should plan a program of study in consultation with a faculty advisor. The program of study should be finalized by the time the student completes 12 credit hours of graduate study.

The following requirements must be met for the Master of Science in Engineering degree:

1. Completion of 45 graduate credit hours in courses that have prior approval by an engineering graduate advisor.

2. At least 36 of the total 45 graduate credit hours must be engineering or computer engineering courses. At least 24 of these must be engineering courses.

3. At least 12 of the 36 graduate credit hours of engineering and computer engineering must be courses numbered above 700, excluding ME 899, Thesis.

4. At least 6 of the total 45 graduate credit hours must be courses in mathematics, statistics, or computer science.

5. Students must choose either a thesis option or advanced course work option. Students employed as teaching or research assistants through the School of Graduate Studies at any time during their degree candidacy must choose the thesis option.

Thesis Option: A thesis satisfying all requirements of the School of Graduate Studies must be completed and successfully defended in an oral examination before the major committee. Up to 12 credit hours of ME 899, Thesis, may count toward degree requirements of 45 total graduate credit hours and 36 graduate credit hours in engineering or computer science.

Course Option: Students must complete 12 credit hours of courses numbered 700 or above in addition to the 12 hours specified in requirement 3.

Facilities

Graduate students have access to a wide range of modern facilities including classrooms, laboratories, and computer systems interconnected by local and wide area communication networks. Computational facilities include numerous Sun, DEC, and Silicon Graphics fileservers and workstations; X-windowing terminals; and personal computers. Access is also available to the Ohio Super-computer via the Ohio Academic and Research Network (OARNET).

Faculty

Professors

Bor Z. Jang (dean), mechanical engineering, materials science and engineering
Sharmila Mukhopadhyay, composites, surface engineering, high temperature electronic devices
Raghavan Srinivasan, materials engineering, high-temperature deformation, materials behavior modeling
Joseph F. Thomas Jr., materials engineering, mechanical behavior

Associate Professors

Maher S. Amer, Raman spectroscopy, polymers, composites, micromechanics of multi-phase materials
Richard J. Bethke (emeritus), signal and systems modeling, analysis and control, stochastic processes
George P. G. Huang (chair), computational fluid dynamics, heat and mass transfer, high performance computations, modeling, designs and understanding of complex transport processes

Assistant Professor

H. Daniel Young, nanochannel materials, multimaterial fibrous materials, laser micromachining and forward transfer techniques

Graduate Assistantship

Assistantships are available to students on a competitive basis. Students awarded assistantship support are eligible for stipends and remission of tuition fees. Interest in financial support should be indicated at the time of application.

Research

Research in materials science and engineering is focused around processing, structure, properties, and performance of metals, ceramics, polymers, and composites. Current programs include studies of super conducting ceramics, polymer, ceramic, titanium, carbon matrix composites, and nickel and titanium based alloys, as well as advanced nano- and meso- systems.

The department hosts a variety of sophisticated materials and research equipment. This includes a scanning transmission electron microscope with associated specimen preparation equipment, state-of-the-art micro-Raman spectroscopy, high-resolution x-ray photoelectron spectroscopy (XPS), and unique controlled-atmosphere high temperature deformation testing facilities. The department also has standard laboratory equipment for fabrication and testing of materials such as mechanical testing machines, scanning electron microscopes, an x-ray diffractometer, furnaces, microhardness testers, and optical microscopes.

Research at Wright State University is not limited to the laboratory facilities on campus. Several industrial companies, laboratories, and Wright-Patterson Air Force Base are involved in joint research efforts, making available their unique facilities for faculty and graduate research.

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Graduate Programs

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Mathematics

Introduction

The Department of Mathematics and Statistics offers the Master of Science degree in mathematics. The graduate program is designed to provide a solid foundation for further professional training or careers in teaching, industry, or government. Degree requirements are flexible, allowing considerable latitude in tailoring the course of study to individual preferences. Two concentrations are available: mathematics and applied mathematics. The mathematics concentration is designed for students with an undergraduate degree in mathematics or the equivalent. The applied mathematics concentration is designed not only for persons with undergraduate training in mathematics, but also for those with degrees in related disciplines, such as engineering and science, who want a solid foundation in mathematics. All required courses are offered in the late afternoon or evening. The department also awards the Master of Science degree in applied statistics (see Statistics) and also supports the Interdisciplinary Science and Mathematics Master of Science in Teaching (M.S.T.) degree offered by the College of Science and Mathematics.

Graduate students are assigned an advisor from the graduate faculty on the basis of their proposed area of study. Early consultation with the advisor is recommended since the advisor works closely with the student in every phase of the program.

Admission

Applicants for admission are expected to meet the general requirements for admission to graduate study as established by the School of Graduate Studies. In addition, applicants must present postcalculus courses in mathematics, as well as related course requirements appropriate for the intended program of study. The specific undergraduate preparation required for each of the department's two degree options forms part of the description of each option. Applicants with insufficient preparation may be admitted on the condition that they complete certain prerequisite work to be specified by the department at the time of admission

Degree Requirements

The Master of Science degree may be earned by satisfying the requirements of the mathematics or the applied mathematics option. The mathematics option is a flexible program emphasizing advanced mathematical concepts in the core areas of mathematics. Students may either complete a traditional curriculum in mathematics or develop, with a graduate advisor, a plan of study that is tailored to their individual needs. The applied mathematics option is more structured but still allows students considerable latitude in designing a course of study. This option focuses on the computational tools of modern applied mathematics and the mathematical theory underlying these tools. Either option can

provide a solid foundation for doctoral study in mathematics or for a career in teaching, industry, or government.

All master's degree candidates are required to pass a comprehensive written examination which should be taken at least one quarter before the expected date of graduation.

Mathematics Concentration

This program offers advanced mathematical training in the traditional areas of mathematics, yet is flexible enough to allow students to pursue interests in related areas of mathematics. Students may select courses in algebra, analysis, combinatorics, and geometry, as well as differential equations, graph theory, numerical analysis, probability, and statistical theory. Individual interests and future goals determine the actual course of study, within the guidelines given below.

Applicants for this program should have completed a minimum of 21 quarter hours (14 semester hours) in mathematics beyond calculus. Courses in analysis (advanced calculus), linear algebra, and modern algebra are particularly important. However, courses in other areas of mathematics may also provide the foundation needed for graduate work in mathematics.

In addition to the requirements of the School of Graduate Studies, the following departmental requirements must be met to earn a degree under this option:

1. The student must complete a minimum of 45 credit hours of courses that have prior approval of the department. Departmental approval is normally given by the student's advisor. At least 24 of these hours must be in mathematics or statistics courses numbered 701 or above and may not include MTH 792 or STT 786.

2. The 24 credit hours at the 700 level must include at least one full-year sequence in mathematics.

The writing of a thesis is optional. Students who elect a thesis may count it for not more than 10 hours of credit. The thesis must be approved by the student's advisor and must be prepared to conform to the standards established by the School of Graduate Studies. A thesis defense will be required.

Students completing a thesis must pass two 90 minute comprehensive examinations over selected coursework. Students not completing a thesis must pass three 90 minute comprehensive examinations over selected coursework.

Applied Mathematics Concentration

The applied mathematics option provides training in mathematical techniques applicable to a wide range of real-world problems. The objectives of this program are two-fold: to develop the ability to analyze and solve a variety of mathematical problems, and to increase the understanding of specific problems encountered in other fields. To this end, the curriculum includes course sequences in pure and applied mathematics, and advanced courses in related areas such as engineering, computer science, and physics. This option is designed for those who have completed a bachelor's degree in engineering, science, mathematics, or statistics, and who wish to acquire a solid foundation in applied mathematics.

Applicants for this program should have completed undergraduate courses in multivariable calculus, linear or matrix algebra equivalent to MTH 355, and ordinary differential equations. Students should also have knowledge of a high-level programming language. Courses in complex analysis, partial differential equations, and physics are recommended.

In addition to the requirements of the School of Graduate Studies, the following departmental requirements must be met to earn a degree under this option. Students who have not, prior to admission, completed two quarters or one semester of real variables course work comparable to MTH 431 and 432 are required to take MTH 631 and 632 as program electives. Full-time students normally take two years to complete this program. For more information on the Applied Mathematics program, see http://www.math.wright.edu/ms/appliedmath/

Faculty

Professors

K. T. Arasu, combinatorics
Joanne M. Dombrowski, functional analysis, operator theory
Anthony B. Evans, finite geometry, graph theory
Weifu Fang (Chair), applied mathematics, partial differential equations, inverse problems
Ann M. Farrell, mathematics education
Chaocheng Huang, partial differential equations
Qingbo Huang, partial differential equations, harmonic analysis
Susann Mathews, mathematics education
David F. Miller, optimization
Steen Pedersen, operator theory
Thomas P. Svobodny, applied mathematics
Larry Turyn, differential equations, applied analysis

Associate Professors

Lop-Fat Ho, optimal control, duality theory
Qingbo Huang, partial differential equations, harmonic analysis
Alexander J. Kaplan, functional analysis
Phan Loi, operator theory
Richard Mercer, operator algebras, mathematical physics
Michelle Reed, mathematics education
Dan Slilaty, graph theory, matroid theory, topology
Emily Tian, applied mathematics
James T. Vance Jr., Fourier analysis

Assistant Professors

Aina Appova, mathematics education
Timothy Boester, mathematics education
Yuqing Chen, discrete mathematics
Xiaoyu Liu, combinatorics
Michelle Reed, mathematics education
Emily Tian, applied mathematics
Xiangqian Zhou, discrete mathematics

Financial Assistance

The department awards a limited number of graduate teaching assistantships annually to qualified applicants. Assistantships may be renewed for a second year; assistants can complete the requirements for a degree in two years. The duties of an assistant normally include classroom teaching, which is a meaningful aspect of the education of graduate students in the mathematical sciences.

Applicants should inquire about the availability of tuition fellowships. (Refer to the Financial Assistance, Fees, and Tuition section).

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Applicants for this program should have completed undergraduate courses in multivariable calculus, linear or matrix algebra equivalent to MTH 355, and ordinary differential equations. Students should also have knowledge of a high-level programming language. Courses in complex analysis, partial differential equations, and physics are recommended.

In addition to the requirements of the School of Graduate Studies, the following departmental requirements must be met to earn a degree under this option. Students who have not, prior to admission, completed two quarters or one semester of real variables course work comparable to MTH 431 and 432 are required to take MTH 631 and 632 as program electives. Full-time students normally take two years to complete this program. For more information on the Applied Mathematics program, see http://www.math.wright.edu/ms/appliedmath/

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Professors
K. T. Arasu, combinatorics
Joanne M. Dombrowski, functional analysis, operator theory

Anthony B. Evans, finite geometry, graph theory
Weifu Fang (Chair), applied mathematics, partial differential equations, inverse problems
Ann M. Farrell, mathematics education
Chaocheng Huang, partial differential equations
Qingbo Huang, partial differential equations, harmonic analysis
Susann Mathews, mathematics education
David F. Miller, optimization
Steen Pedersen, operator theory
Thomas P. Svobodny, applied mathematics
Larry Turyn, differential equations, applied analysis

Associate Professors
Lop-Fat Ho, optimal control, duality theory
Qingbo Huang, partial differential equations, harmonic analysis
Alexander J. Kaplan, functional analysis
Phan Loi, operator theory
Richard Mercer, operator algebras, mathematical physics
Michelle Reed, mathematics education
Dan Slilaty, graph theory, matroid theory, topology
Emily Tian, applied mathematics
James T. Vance Jr., Fourier analysis

Assistant Professors
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Timothy Boester, mathematics education
Yuqing Chen, discrete mathematics
Xiaoyu Liu, combinatorics
Michelle Reed, mathematics education
Emily Tian, applied mathematics
Xiangqian Zhou, discrete mathematics

Financial Assistance

The department awards a limited number of graduate teaching assistantships annually to qualified applicants. Assistantships may be renewed for a second year; assistants can complete the requirements for a degree in two years. The duties of an assistant normally include classroom teaching, which is a meaningful aspect of the education of graduate students in the mathematical sciences.

Applicants should inquire about the availability of tuition fellowships. (Refer to the Financial Assistance, Fees, and Tuition section).

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Mechanical Engineering

Introduction

The Department of Mechanical and Materials Engineering offers a program of graduate study leading to a Master of Science in Engineering (M.S.E.) degree with a major in mechanical engineering. The M.S.E. program is broad in scope and emphasizes portable concepts in the design and analysis of complex physical systems using modeling, synthesis, and optimization techniques, and bridges interdisciplinary engineering areas such as controls, robotics, electronics, and communications. A Ph.D. in engineering with a major in mechanical engineering is also available. For details, see Engineering Ph.D. program. For more information about the mechanical and materials engineering programs, see our Web site at http://www.cs.wright.edu/mme/.

Admission

To be considered for admission to the M.S.E.—Mechanical program, students must first satisfy basic requirements of the School of Graduate Studies. This includes having a bachelor's degree in engineering or a related area with an overall undergraduate grade point average of at least 2.7 (on a 4.0 scale) or an overall undergraduate grade point average of at least 2.5 with an average of 3.0 or better for the last 90 quarter hours (60 semester hours) earned toward the undergraduate degree. International students must have a TOEFL score of at least 550/213. In addition, the program requires students from non-ABET accredited undergraduate programs to submit general GRE test scores. Program admission decisions are based on complete application information including overall academic performance and standardized tests scores where applicable.

Collaboration

The Dayton Area Graduate Studies Institute provides collaboration opportunities through the graduate engineering courses, faculty, and research resources of the Air Force Institute of Technology, the University of Dayton, The Ohio State University, and the University of Cincinnati.

Degree Requirements

Students should plan a program of study in consultation with a faculty advisor. The program of study should be finalized by the time the student completes 12 credit hours of graduate study.

The following requirements must be met for the Master of Science in Engineering degree:

1. Completion of 45 graduate credit hours in courses that have prior approval by an

engineering graduate advisor.

2. At least 36 of the total 45 graduate credit hours must be engineering or computer engineering courses. At least 24 of these must be engineering courses.

3. At least 12 of the 36 graduate credit hours of engineering and computer engineering must be courses numbered above 700, excluding ME 899, Thesis.

4. At least 6 of the total 45 graduate credit hours must be courses in mathematics, statistics, or computer science.

5. Students must choose either a thesis option or advanced course work option. Students employed as teaching or research assistants through the School of Graduate Studies at any time during their degree candidacy must choose the thesis option.

Thesis Option: A thesis satisfying all requirements of the School of Graduate Studies must be completed and successfully defended in an oral examination before the major committee. Up to 12 credit hours of ME 899, Thesis, may count toward degree requirements of 45 total graduate credit hours and 36 graduate credit hours in engineering or computer science.

Course Option: Students must complete 12 credit hours of courses numbered 700 or above in addition to the 12 hours specified in requirement 3.

Facilities

Graduate students have access to a wide range of modern facilities including classrooms, laboratories, and computer systems interconnected by local and wide area communication networks. Computational facilities include numerous Sun, DEC, and Silicon Graphics fileservers and workstations; X-windowing terminals; and personal computers. Access is also available to the Ohio Super-computer via the Ohio Academic and Research Network (OARNET).

Faculty

Professors

Parviz Dadras (Emeritus), solid mechanics, manufacturing processes, carbon-carbon composites
Ramana V. Grandhi, structural optimization, finite element methods, uncertainty quantification
Wilbur L. Hankey (Emeritus), computational fluid dynamics, aerodynamics, aerothermodynamics
Bor Z. Jang (dean), mechanical engineering, materials science and engineering
Joseph F. Thomas, Jr., materials engineering, mechanical behavior
J. Mitch Wolff, fluid mechanics, turbomachinery, computational fluid dynamics, unsteady aerodynamics, MEMS

Associate Professors

Richard J. Bethke (emeritus), signal and systems modeling, analysis and control, stochastic processes
Kenneth C. Cornelius, fluid mechanics, turbulent flow, aerodynamics, compressible flow
George P. G. Huang (chair), computational fluid dynamics, heat and mass transfer, high performance computations, modeling, designs and understanding of complex transport processes
Nathan W. Klingbeil, solid mechanics, fracture mechanics, fatigue of engineering materials and structures
Junghsen Lieh, dynamics and controls of mechanical systems

James A. Menart, thermal sciences, heat transfer
Joseph C. Slater, structure dynamics, vibration and control
Scott K. Thomas, experimental heat and mass transfer, computational fluid dynamics

Assistant Professors
Billy W. Friar (Emeritus), thermodynamics, heat transfer, fluid mechanics
Ravi C. Penmetsa, robust design, multidisciplinary design optimization, uncertainty quantification

Graduate Assistantship

Assistantships are available to students on a competitive basis. Students awarded assistantship support are eligible for stipends and remission of tuition fees. Interest in financial support should be indicated at the time of application.

Research

Research in mechanical engineering spans several exciting areas. There is a large program in design optimization addressing large structures, die shapes, flight trajectories, and other applications. Work is also being done in structural dynamics areas including vehicle suspensions and turbine blades. Mechanical design studies include the characterization of carbon-carbon composites. Fluid dynamics research is being conducted both experimentally and via computer computation (CFD). Projects include study of flows in turbine engines and reciprocating compressors. There is also a large thermal science program in the analysis and application of heat pipes and related devices.

Research at Wright State is not limited to the laboratory facilities on campus. Several industrial companies, laboratories, and Wright-Patterson Air Force Base are involved in joint research efforts with the university and have unique facilities that are available for faculty and graduate research.

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Microbiology and Immunology

Introduction

The program leading to the Master of Science degree in microbiology and immunology prepares students for careers as professional microbiologists/immunologists in industry, government, education, and research organizations, or for further professional training.

Areas of specialization in the Microbiology and Immunology program include indoor allergies, basic and clinical immunology, retrovirology (retroviral variation, HIV, endogenous retroviruses), immunotoxicology, viral pathologenicity, vaccine development, immunoparasitology of ectoparasites, microbial ecology, immune modulation, algal toxins, inflammatory and immune effector cell function, cytokine signaling and apoptosis.

The M.S. degree in microbiology and immunology requires the submission and oral defense of either a research-based or literature-based thesis. Candidates are required to obtain a major advisor and an advisory committee. For the research-based thesis, the advisory committee will help formulate a study program to include a minimum of 20 quarter credits of graduate-level course work and 25 quarter credits of research (which could include journal clubs, seminars, or special topics). For the literature-based thesis, the student, with assistance of the advisory committee, will select the additional courses required to fulfill the 45 credit hour limit. The advisory committee will also provide counseling and evaluate student progress. If a student is uncertain of a major area of concentration, the program director will serve as a temporary advisor until the student selects an area and is accepted by an advisory professor.

Admission

Applicants must fulfill the requirements for admission established by the School of Graduate Studies. Preference is given to students with a grade point average of 3.0 or better on a 4.0 grading scale. Letters of recommendation and GRE scores are also considered.

Degree Requirements

1. Candidates must complete a minimum of 45 quarter credits and must participate in at least six graduate seminars.
•As part of the 45 credit hours, students must complete two quarters of Biochemistry (BCH 750 and 752) and at least two formal courses with an “M&I” prefix.

2. Candidates must maintain a 3.0 cumulative average with no more than nine credit hours of C grades applicable to the degree.

3. A maximum of 10 credits of graduate courses may be transferred from other institutions.

Faculty

Microbiology and Immunology

Faculty members for the Departments of Biological Sciences; Biochemistry and Molecular Biology; Pharmocolgy and Toxicology; and Neuroscience, Cell Biology, and Physiology with interests in microbiology and immunology constitute the program faculty.

Professor Emeritus and Research Professor
Larry G. Arlian, immunoparasitology, allergies

Professors
Nancy J. Bigley, immunology
Julian G. Gomez-Cambronero, inflammation, cytokine signaling
Barbara E. Hull, skin, viral pathogen protection
Dan E. Krane, DNA, molecular evolution

Associate Professors
Scott E. Baird, evolution and development
Thomas L. Brown, apoptosis, cell signaling
Mill Miller, intracellular transport
Dawn P. Wooley, virology, HIV

Assistant Profressor
Katherine Excoffon, virus/cell interactions
Oleg Paliy, Microbial physiology and genetics
Courtney Sulentic, cellular and molecular immunotoxicology

Financial Assistance

Two graduate teaching assistantships are available on a competitive basis. These carry a waiver of most tuition and instructional fees. Appointments are made for one year and may be renewed for a second year.

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Music

Introduction

The Department of Music offers three graduate degree programs, all accredited by the National Association of Schools of Music. These include the Master of Music in Music Education, the Master of Music in Performance, and, in conjunction with the College of Liberal Arts Master of Humanities Program, the Master of Humanities with an emphasis in music.

The Master of Music in Music Education degree is a professionally oriented program. It is designed to serve music educators from primary to postsecondary levels. Though all courses are pertinent to terminal degree programs, they are equally valuable for students who plan to study at the doctoral level. A variety of program options allows students to design programs that suit their professional goals and take into account their backgrounds and experience.

The Department of Music offers three major options in program planning that lead to the Master of Music in Music Education degree. The options include the Thesis Option, the Project Option, and the Recital Option. Each contains requirements in music education, music history and literature, and music theory, as well as opportunities for performance. For the Thesis Option, the student prepares a thesis under the supervision of the thesis director; the Project Option requires one project under the supervision of a project director; and for the Recital Option, the student presents a full-length public recital and a research paper.

The Master of Music in Performance is a degree program designed to prepare graduates for professional careers as performing musicians and/or those who seek to pursue further study in music at the doctoral level. Areas of study include solo performance in the instrumental or vocal areas, and either instrumental or choral conducting. Each program of study includes requirements in music history, music research, and music theory, plus intensive study in the designated applied area. The required thesis comprises a public performance recital of approximately one hour's length, with an accompanying scholarly research document related to the recital. Requirements also include a one-year residency of three consecutive quarters of full-time enrollment, beginning in the Fall quarter (i.e., Fall-Winter-Spring quarters), and an oral comprehensive examination at the completion of the program.

The Master of Humanities (emphasis in Music) degree is a flexible degree program within the College of Liberal Arts. The course of study may be designed to serve the needs of the student interested in pursuing a career in a variety of areas, including musicology, theory, composition, performance areas, and others. Courses are equally valuable for students who plan to study at the doctoral level. A variety of curricular options allows students to design programs that suit their professional goals and take into account their backgrounds

and experience. Several options are available including a thesis, recital, or creative project.

Students interested in the Master of Humanities program should also consult that program entry in the catalog.

Admission

In addition to meeting the admission requirements of the School of Graduate Studies, applicants for admission to any of the three degree programs of the Graduate Studies in Music program (Master of Music in Music Education, Master of Music in Performance, or Master of Humanities with an emphasis in music) must present an undergraduate major in music from an accredited college or university with a minimum grade point average of 3.0 (on a 4.0 scale) in undergraduate course work in music. In addition to the application and transcripts sent to the School of Graduate Studies, the applicant may submit the following to the Department of Music: resume; three recommendations from teachers, administrators, or colleagues; and other supporting material the applicant may deem appropriate.

In addition to the requirements in the preceding paragraph, applicants for the Master of Music in Performance program must complete a successful performance audition in the intended emphasis (Choral Conducting, Instrumental Conducting, Instrumental Performance, Piano Performance, or Vocal Performance), which places the student at the equivalence of an undergraduate senior recital in the intended emphasis area. Additional materials (portfolio, letters of recommendation, repertoire lists, etc.) appropriate to the specific emphasis may be required in each emphasis by the appropriate program specialist and applied committee.

The applicant must also schedule an admissions interview with the director of Graduate Studies in Music prior to admission.

Upon admission, placement examinations in Music Theory and Music History must be taken no later than the third week of the first quarter of study and passed prior to enrollment in the applicable courses.

Students admitted to the Graduate Studies Program in Music will be classified as regular, conditional, probationary, or non-degree seeking, as defined in the WSU Graduate Catalog. Moreover, any changes in status will be in accordance with policies outlined in the Graduate Catalog. In addition to the requirements of the School of Graduate Studies, removal of the conditional status requires achieving a cumulative GPA of 3.0 or better in the first 12 hours of academic study in the program. Only regularly organized academic classes at the 600 or 700 level may be included in this average. Applied music, ensembles, chamber music, workshops, and independent study of any type may not be counted in the 12 hours needed to remove conditional status.

Students who wish to apply to study applied music must audition for the appropriate Applied Music Board.

Students in the Master of Music in Music Education degree program who do not hold a standard teaching licensure at the time of admission will be required to earn Ohio licensure.

Exceptions may be made for reasonable cause; such exceptions may require action by the Department of Music Graduate Committee.

Advising

No student will take graduate work in music without departmental advising. Full- and

part-time students enrolled in the program must consult with their advisor each quarter. Students who are not candidates for the degree must have departmental permission as outlined for the particular area of study.

Each regularly enrolled student will be assigned an advisor appointed by the director of Graduate Studies in Music. The advisor will be assigned according to the student's program emphasis. Full- and part-time students enrolled in graduate courses must consult with their advisor each quarter. The advisor, the director of Graduate Studies in Music, and the student will plan the student's program. The plan will be made and filed with the School of Graduate studies no later than mid-term of the second quarter of the student's enrollment in the program.

The student will be assigned a committee of three faculty members who will design and evaluate the oral comprehensive examination.

The Department of Music maintains a website (www.wright.edu/music/ which provides detailed information about all aspects of the graduate program in music.

In addition to a Department of Music advisor, students in the Master of Humanities program will also be assigned an advisor in the Humanities Program of the College of Liberal Arts. Given the flexible nature of this degree program, it is essential that Master of Humanities students meet at the beginning of their program with both advisors. It is also critical that Master of Humanities students meet regularly (at least once per quarter) with their assigned advisors. In addition to policies and procedures outlined in the Department of Music Graduate Studies in Music Handbook, students in the Master of Humanities Program must also follow policies and procedures in the Master of Humanities Handbook provided by the Humanities Program. Students interested in the Master of Humanities program should also consult that program entry in this catalog.

Faculty

Professors

Leland D. Bland (emeritus), music theory, music history and literature
David M. Booth, instrumental conducting, music education
Henry N. Dahlman, music education, music history and literature, choral conducting
Herbert E. Dregalla, Jr. (chair), music education
Shelly M. Jagow, applied saxophone, music education
Charles S. Larkowski, musicology, music history and literature, music theory
Jackson Leung, musicology, music history and literature, applied piano, orchestral conducting

Associate Professors

In-Hong Cha, applied violin
Christopher L. Chaffee (director), applied flute
Brenda Ellis, music education
Francis H. Laws, III (emeritus), applied euphonium and trombone
Randall S. Paul, music education, applied clarinet/saxophone
James W. Tipps, music education
Kimberly J. Warrick, applied voice

Assistant Professors

Drew Collins, music education, choral composition and arranging
Franklin Cox, music theory, composition, applied cello
Benjamin Miles, applied tuba and euphonium, music research
Daniel Zehringer, applied trumpet

Faculty Associates

Diana Cataldi, applied voice
Ginger Minneman, applied voice
J. Ritter Werner, applied organ, music theory, music history

Instructors
Vincent Davis, applied voice, music theory
William Jobert, applied bassoon, music education
Gretchen McNamara, applied trombone, music education

Course of Study

Master of Music in Music Education

Program of Study	**45**
MUS 601, 602, 665, 704	15
Music Theory (600-700 level)	6
Music History and Literature (600-700 level)	6
Elective Courses in Music (600-700 level)	12-18
Thesis, Recital, or Project Option*	1-6

*For a culminating experience, the candidate may choose one of three options. These include a traditional thesis, a performance recital in the candidate's applied area with supporting written document, or a creative project. Further details are outlined below and in the Department of Music Graduate Studies in Music Handbook.

During the last quarter in the program, a candidate for a degree must pass an oral comprehensive examination covering the areas of music education, music history, and music theory. The student who elects the thesis option will also be prepared to defend the thesis. The examination will be designed and evaluated by the candidate's committee.

Thesis Option

Course work will be distributed in the areas of music education, music history and literature, music theory, performance (12 to 18 credit hours), and thesis (maximum of 6 credit hours), for a minimum total of 45 credit hours. Students will prepare a thesis under the supervision of a thesis director, who is approved by the director of Graduate Studies in Music. The thesis will be read and approved by the candidate's committee.

Recital Option

Course work will be distributed in the areas of music education (24 to 30 credit hours), music history and literature, music theory, and performance (15 to 21 credit hours), for a minimum total of 45 credit hours. If approved by the appropriate Applied Music Board for the recital option, the student will present a full-length public recital. The recital performance will be heard and judged on a pass-fail basis by the appropriate Applied Music Board. For specifications as to length, content, and procedures for the graduate recital, students should consult the departmental Applied Music Policy Statement, Section IX, "Graduate Study in Applied Music." This policy statement is available in the office of the Department of Music.

In addition, students will present a research paper related to the recital literature. The paper, equivalent in scope to a term paper, will be read and approved by a permanent member of the music history and literature or music theory faculty

Master's Project Option

Course work will be distributed in the areas of music education (24 to 30 credit hours),

music history and literature, music theory, and performance (15 to 21 credit hours), for a minimum total of 45 credit hours. In addition, students will present a project. Students may revise, refine, and extend a paper written for a course, or may elect to present a new paper. The project paper will be read and approved by the student's project director and a second reader.

Note: In any of the options the student may, with the approval of the director of Graduate Studies in Music and the advisor, elect a maximum of two courses outside the Department of Music. The courses may be substituted for music electives if the student can show the courses are in cognate areas that contribute substantially to the preparation of a teacher in the arts.

Master of Music in Performance

Program of Study	**48**
MUS 601	4
Music Theory (600-700 level)	6
Music History and Literature (600-700 level)	6
Other Courses in Music (600-700 level)	6-9
Applied Study in Area of Specialization*(700 level)	12
Performance Requirement (Ensemble)**	3-6
Approved Electives (600-700 level)	2-6
Thesis (MUS 799)	3

*Choral Conducting, Instrumental Conducting, Instrumental Performance, Piano Performance, or Vocal Performance.

**Ensemble related to area of specialization, assigned by program advisor.

Thesis

The thesis is comprised of a full-length public performance recital in the area of specialization and an accompanying scholarly research paper related to the recital literature. The recital will be heard and judged on a pass-fail basis by the appropriate Applied Music Board. For specifications as to length, content, and procedures for the graduate recital, students should consult the departmental Applied Music Policy Statement, Section IX, "Graduate Study in Applied Music," available in the Department of Music office.

In addition, students will present a scholarly research paper related to the recital literature. The paper will be read and approved by a permanent member of the music history and literature or music theory faculty.

During the last quarter in the program, a candidate for a degree must pass an oral comprehensive examination covering the areas of the applied performance specialization, music history, and music theory.

Further details are outlined in the Department of Music Graduate Studies in Music Handbook, which may be found at www.wright.edu/music/grad/handbook/.

Master of Humanities with an Emphasis in Music

All students in the Master of Humanities program may take advantage of the resources of the Department of Music. Students with a primary interest in music may design a specialized program of study in consultation with the director of Graduate Studies in Music and the director of the Humanities Program. Students choosing to concentrate in music are required to follow the general parameters of the Master of Humanities degree; within these parameters they may design a program of study with a focus in music history, theory,

composition, performance, or other musical specialty.

Program of Study	**48**
HUM 700 and 720	8
HUM 710 or MUS 601	4
Music Theory (600-700 level)	6
Music History and Literature (600-700 level)	6
Other Studies in Music (600-700 level)	8
Electives	8
Project (HUM 730)	8

The culminating project may be either a traditional thesis or a creative project. This project must follow the same general guidelines required of all Humanities projects. As a third option, students concentrating in music may give a recital as their culminating project. Those choosing the recital option must follow the guidelines specified by the Department of Music. Further details are outlined below, in the Department of Music Graduate Studies in Music Handbook, and in the Master of Humanities Handbook.

During the last quarter in the program, a candidate for a degree must pass an oral comprehensive examination covering the areas of music history, music theory, and the student's area of musical emphasis. The student who elects the thesis option will also be prepared to defend the thesis. The examination will be designed and evaluated by the candidate's committee.

A student handbook detailing the policies and requirements of the Master of Humanities degree with an emphasis in music is available in both the Department of Music and the Humanities Office.

Thesis Option

Course work will be distributed in the areas of music theory, music history and literature, research in music, the humanities, performance, and thesis (maximum of eight credit hours) for a minimum total of 48 credit hours. Students will prepare a thesis under the supervision of a thesis director, who is approved by the director of Graduate Studies in Music and the director of the Humanities program. The thesis will be read and approved by the candidate's committee.

Recital Option

Course work will be distributed in the areas of music theory, music history and literature, research in music, the humanities, and performance for a minimum total of 40 credit hours. In the case of the recital option, the final recital and paper described below fulfills the thesis requirement (maximum of eight credit hours) of the Master of Humanities curriculum.

If approved by the appropriate Applied Music Board for the recital option, the student will present a full-length public recital. The recital performance will be heard and judged on a pass-fail basis by the appropriate Applied Music Board. For specifications as to length, content, and procedures for the graduate recital, students should consult the Music Department's Applied Music Policy Statement, Section IX, "Graduate Study in Applied Music." This policy statement is available in the office of the Department of Music.

In addition, students will present a research paper related to the recital literature. The paper, equivalent in scope to a term paper, will be read and approved by a permanent member of the music history and literature or music theory faculty. **Master's Project Option**

Course work will be distributed in the areas of music theory, music history and literature, research in music, the humanities, and performance for a minimum total of 40 credit hours. In the case of the master's project option, the final project described below fulfills the thesis requirement (maximum of eight credit hours) of the Master of Humanities curriculum.

For the project, students may revise, refine, and extend research done during the course of study or may elect to present a new paper. Projects may also be approved in creative activity such as musical composition, conducting, and other areas. In such cases the student will present a research paper related to the project. The paper, equivalent in scope to a term paper, will be read and approved by the student's committee, including one full-time member of the music faculty.

Students Not Enrolled in the M.Mus. Program

A graduate student enrolled in another degree program (e.g., Master of Arts, Master of Humanities, or Master of Education) or a nondegree graduate student may, with the approval of his or her department, elect certain graduate courses in music. The requirements for courses in each area of music are listed below.

Music Education

All courses in music education require an undergraduate degree in music. Permission of the director of Graduate Studies in Music and permission of the instructor are required.

Theory of Music, Music History and Literature

All courses in music theory, and music history and literature require a substantial background in music. Permission of the director of Graduate Studies in Music and permission of the instructor are required.

Performance

Ensembles require an audition and approval of the instructor. Private study in any area of applied music requires a successful audition before the appropriate Applied Music Board.

For further information, consult the departmental Applied Music Policy Statement, Section IX, "Graduate Study in Applied Music." This policy statement is available in the office of the Department of Music.

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Neuroscience, Cell Biology, and Physiology

Introduction

The Department of Neuroscience, Cell Biology and Physiology offers two tracks of graduate study leading to the Master of Science degree (M.S.) in (1) anatomy and (2) physiology and neuroscience. A continuation of graduate studies with faculty in the Department of Neuroscience, Cell Biology and Physiology leading to a Doctor of Philosophy (Ph.D.) degree is available through the Biomedical Sciences Ph.D. Program.

Certificate Program in Anatomy

The anatomy track certificate program is a three-quarter, post-baccalaureate program. The program provides graduate-level education in three of the four human anatomy core courses – microanatomy, gross anatomy, embryology, and neurobiology. The program is applicable to physical therapists, occupational therapists, physician assistants, athletic trainers, health and physical education majors, and others in allied health disciplines.

Admission

Admission Requirements–Anatomy

Minimum requirements include an overall undergraduate grade point average of 3.0-plus. Although there are no uniform prerequisites, it is recommended that applicants have completed at least two years of biology, including vertebrate anatomy, and two years of chemistry, including organic chemistry. Letters of recommendation are an important admission consideration.

Students who do not plan to complete the degree program or who do not meet the admission requirements of the School of Graduate Studies may be admitted on a non-degree basis in order to take selected anatomy courses. Written permission by the appropriate course director is required to enroll in each anatomy course. Contact the Anatomy Department for information concerning enrollment procedures.

Admission Requirements–Physiology & Neuroscience

The requirements for admission are:

1. B.A., B.S., or equivalent degree

2. Overall GPA of 3.00-plus or GRE total of 1100 (minimum 500 verbal; 500 mathematics)

3. The following prerequisite courses: general biology (one year), general chemistry (one

year), general physics (one year), mathematics (one year through introductory calculus), and one year of advanced study in biology, chemistry, physics, or computer science

Degree Requirements

Degree Requirements–Anatomy

In addition to the requirements of the School of Graduate Studies, the following requirements of the Department of Anatomy must be met:

1. Completion of a minimum of 45 or 50 graduate credit hours (see number 4) in courses that have prior approval of the department. Approval is normally given through the student's faculty advisor.

2. The graduate credits must include 33 credit hours of core courses in anatomy.

3. Required courses are human gross anatomy, human microanatomy, advanced human embryology, human neurobiology, and four seminars.

4. There are two program-of-study options leading to a master's degree:

a. Course Option (50 credits): In addition to the course requirements listed above, students are required to take another course in the department or other science department that relates to their program of study. The remaining requirements include completing an oral comprehensive examination covering the core anatomy courses, assist with teaching a department graduate or undergraduate course, learn a research technique, and write a scholarly paper.

b. Thesis Option (45 credits): Requires the written submission and successful oral defense of a thesis based on original hands-on research performed while enrolled as a graduate student at the university.

Degree Requirements-Physiology & Neuroscience

In order to qualify for the Master of Science degree, students must satisfy the requirements of the School of Graduate Studies as well as program requirements. The first four quarters involve 35–37 credit hours which include required departmental and other courses determined in consultation with the student's advisor. Research activities begin in the summer of the first year. The second program year involves 18–30 credit hours with emphasis on research. Completed research is presented in written thesis form at the end of the second year, with a public oral defense.

Faculty

Professors—Anatomy
Francisco J. Alvarez, Spinal cord synapses and neural circuits; Development and response to injury
Nancy Bigley, Herpes simplex virus, interferons and immune pathways
Robert Fyffe, Spinal cord—cells and circuits
Gary L. Nieder, Medical and graduate education; Educational technology
John C. Pearson, Educational media development; Neuroscience

Associate Professors—Anatomy
Larry J. Ream, Medical and graduate education; Histology
Dawn Wooley, Virology, HIV-1, AIDS; Biosafety; Biodefense

Assistant Professor—Anatomy
Barbara Kraszpulska, Graduate and medical education; Educational technology

Professors—Physiology & Neuroscience
Timothy Cope (Chair), Spinal cord plasticity; Motor systems
James Olson, CNS injury; Brain edema; Blood-brain barrier function
Robert W. Putnam, Central respiratory control; Cell signaling; Neuroscience

Associate Professors—Physiology & Neuroscience
Thomas L. Brown, Cell death; Differentiation and development
Adrian Corbett, Brain neurogenesis in response to injury
Kathrin Engisch, Neurotransmitter release
Melvyn D. Goldfinger, Theoretical neuroscience
Dan R. Halm, Epithelial physiology; Secretory signal transduction
Mark Rich, Synaptic plasticity; Critical illness myopathy

Assistant Professors—Physiology & Neuroscience
J. Ashot Kozak, Ion transport pathways in T lymphocytes; Calcium signaling; Ion channels in nociception
David Ladle, Development of spinal cord reflex circuits
Christopher Wyatt, Cellular mechanisms of oxygen sensing; Peripheral respiratory control

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Nursing

Introduction

The College of Nursing and Health offers a graduate program leading to a Master of Science degree with a major in nursing, a dual degree program leading to a Master of Science degree and a Master of Business Administration degree in administration of nursing and health care systems and the Doctor of Nursing Practice. For the Master of Science degree, students may complete the requirements for two concentrations while pursuing a nursing Master's degree. A third program enables the registered nurse student with a bachelor's degree in a traditional discipline outside of nursing to enroll in a bridge program leading to a master's degree. All programs prepare nurses for advanced leadership roles in practice and administration, as well as for doctoral study in nursing. The curriculum offers students the opportunity to select a clinical specialization and role (clinical specialist, nurse practitioner, nurse administrator, or school nurse). Nurses already possessing a master's degree with a major in nursing may earn a second M.S. degree in nursing. The programs accommodate both full-time and part-time students, with most classes offered in the late afternoon and evening. The sequence of course offerings is flexible. Full-time students may complete the program within one or two calendar years, depending on the major. Part-time students must complete all requirements for the degree within five years. Student successfully completing all concentration requirements are eligible to sit for a variety of national certification exams.

Wright State University College of Nursing and Health, in conjunction with the University of Toledo College of Nursing, offers a joint, online, post-master's DNP program. This program is currently a part-time program of study. The post-master's DNP at Wright State University and the University of Toledo offers a choice of two concentrations: one for direct care advanced practice nurses (NPs and CNSs) and one for indirect care nursing administrators.

Admission

The College of Nursing and Health has several admission requirements in addition to the minimum requirements of the School of Graduate Studies. The college has a rolling admission policy to provide flexibility for students in all programs except the family nurse practitioner concentration and the doctorate of nursing practice programs. Please contact the college for details.

For Master of Science, all prospective students must have:

• a baccalaureate degree in nursing from a school of nursing that is accredited by a nationally recognized body for nursing education accreditation. Alternately, the prospective student may be a registered nurse with a bachelor's degree in a traditional discipline other than nursing, which will require selected support and professional nursing bridge courses

in addition to regular graduate curriculum requirements

• an overall grade point average in undergraduate work of 3.0, or 2.7 with 3.0 or better in the upper division nursing course work in the major

• submission of a goal statement with application to the program

• within five years, complete a statistics course prior to enrollment in NUR 707

• documented expertise in physical/health assessment or completed course

• computer literacy

• evidence of an unencumbered registered nurse license in Ohio

• evidence of liability insurance, health insurance, CPR certification, and other necessary health information as required by clinical agencies, prior to clinical courses and practica

All students are required to adhere to the policies and procedures set forth in the Wright State University Graduate Catalog and the College of Nursing and Health Graduate Student Handbook, available online after admission.

For Doctor of Nursing Practice, all prospective students must have:

• master of science degree in nursing (advanced practice or administration), GPA of 3.3 or better required

• official transcripts from all colleges and universities

• current national board certification in advanced clinical nursing practice or nursing administration

• unencumbered license to practice as a Registered Nurse in Ohio and relevant Ohio Board of Nursing certificate(s). For applicants to direct care option, the Ohio BON Certificate of Authority (COA) to practice as an advanced practice nurse is required.

• personal statement of five pages or less describing:
-goals and expectations for DNP study
-applied research or project interests (must be consistent with WSU/UT faculty expertise)
-plans for advanced practice with DNP

• current resume or curriculum vitae

• three letters of recommendation, including one from a graduate faculty member in the applicant's master's program

• completion of a graduate level advanced statistics (e.g., multivariate) course with a grade of B or better prior to taking the Applied Nursing Research course in the DNP program (within five years of admission) is preferred.

• interview by DNP faculty

Degree Requirements

Master of Science

The Master of Science in Nursing program is divided into core and advanced practice

options. The core includes courses in theoretical foundations, research, concepts of advanced practice and research sequence. To complete the research sequence, the student has a choice of thesis, scholarly project, supervised research project or evidence based practice course.

Current available concentrations include administration of nursing and health care systems, adult health clinical nurse specialist (including flight and disaster nursing specialization), clinical nuse leader, child/adolescent health (pediatric clinical nurse specialist, primary care pediatric nurse practitioner, and acute care pedicatric nurse practitioner), community health clinical nurse specialist, family nurse practitioner, acute care nuse practitioner, and school nursing.

Candidates for the master's degree must meet all of the following requirements:
• Completion of a minimum of 50 credit hours
• Completion of the program within five years
• Maintenance of a 3.0 cumulative grade point average with no more than nine hours of C grades aplicable to the degree.

Doctor of Nursing Practice

Candidates for the Doctor of Nursing Practice must meet the following requirements:
• The 54 quarter hour/36 semester hour curriculum of the joint WSU/UT degree includes eleven courses focusing on knowledge and practice.
• Completion of 520 hours of academically supervised advanced clinical practice (It is recognized that applicants will have accumulat ed an additional 500 clinical hours (minimum) in their master's programs in order to sit for national certification.)

Certificates

Nursing Education Certificate

The nursing education certification program is to prepare a nurse who can function as a nurse educator in an academic setting in formal nursing programs. Students will have expertise in program planning and development, implementation including choice of appropriate teaching strategies, and evaluation of learning outcomes.

Acute Care Pediatric Nurse Practitioner Post Masters Certificate

The acute care pediatric nurse practitioner post masters certificate program is to provide the knowledge and skills necessary for an experienced Primary Care Pediatric Nurse Practitioner (PCPNP) to work in acute care settings and provide management of infants, children and adolescents as an Acute Care Pediatric Nurse Practitioner (AC-PNP)

School Nurse Licensure
In addition to the Master of Science nursing major with a concentration in School Nursing, the College of Nursing and Health collaborates with the College of Education and Human Services to provide a post baccalaureate program of study leading to Professional Pupil Services School Nurse Licensure though the Ohio Department of Education. Interested individuals must first complete a baccalaureate degree with course work in growth and development, psychology, sociology, and/or anthropology. Each candidate must also have course work in community health and a current license to practice as a registered nurse issued by the Ohio Board of Nursing.

Facilities

The College of Nursing and Health is located in University Hall—a state-of-the-art

educational facility. Clinical instructional facilities are abundant and varied. Since June 1984, the school has had a collaborative agreement with the Division of Nursing at Miami Valley Hospital to form a Center for Excellence in Nursing. This agreement affords opportunities for research, clinical practice, and education for students and faculty. In addition, the school has contracts with over 200 agencies in the area including hospitals, rehabilitation centers, county health departments, nursing homes, school systems, senior citizen centers, and day care centers—all of which can be used for clinical experiences and/or research.

Faculty

Assistant Professors

Detrice Barry, blood disorders, gerontology, health literacy, transcultural nursing
Tracy Brewer, maternal, child, evidence based practice, nursing education
Tawna Cooksey-James, cultural issues in health care, informatics & technology, maternal/childbearing, underserved populations
Cindra Holland, adult health, advanced practice, cardiac nursing, continuing education, education, high risk pregnancy, HIV/AIDS, hypertension, medical/surgical, spirituality
Perla Ilagan, cultural issues in health care, minority health issues, global health, nursing research, primary health care, international education/study abroad, violence, women's health
Mary Beth Kaylor, community and public health, evaluation research, health care policy, research/design methods, teaching strategies, underserved and vulnerable populations, women's health
Judy Ribak, palliative care, quality of life, stress and coping, psychotherapy, psychiatric, gerontology/older adults, ethics/legal, cultural issues in healthcare, advanced practice, advance directives/end of life
Anne Russell, critical/intensive care, qualitative research, trauma
Sherrill Smith, education, public health, simulation
Ann Stalter, community health, death & dying, disease prevention, family health, gerontology, health education, vulnerable populations

Clinical Assistant Professors

Lynne Kelley, pediatric health policy, injury prevention, advanced practice nursing issues, trans-cultural nursing

Clinical Instructors

Cheryl Aubin, emergency medicine, critical/intensive care, continuing education and education
Jeanine Bochenek, community health, disease prevention, health education, school nursing
Ann Bowling, informatics and technology, pediatrics
Crystal Hammond, advanced practice, community health, continuing education, cultural issues in health care, diabetes (type I and in pregnancy), disease prevention, education, ethics/legal, family planning, global health, health education, health promotion, maternal/childbearing, mother/baby care, NCLEX
Laura Herbert, advanced practice, pediatrics, family
Kim Pickett, advanced practice, uninsured populations, minority health, men's health, and diabetes

Course of Study

Program of Study

Summary of Requirements	50*
Core Courses	21

Thesis, scholarly project, supervised research experience or evidence based practice proposal	3
Advanced Practice Options	29-44
Electives	0-5

*Some concentrations require additional credit hours.

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Pharmacology and Toxicology

Introduction

The program leading to the Master of Science degree in the Department of Pharmacology and Toxicology will prepare students for careers in industry, government, education, and research organizations or for further professional training. It is offered in close cooperation with the U.S. Air Force and Navy Toxicology Laboratories located at Wright-Patterson Air Force Base.

This program differs from other undergraduate major or master's-level programs currently offered at Wright State University, both conceptually and with respect to employment and career options. It provides a comprehensive introduction to the broad range of theoretical concepts that comprise these disciplines, providing both historical context and state-of-the-art technical approaches to solving pharmacological and toxicological problems. This goal of providing students with a career-oriented yet theoretically based education will be accomplished within the core curriculum through the combination of text and literature-based lectures, complemented by laboratory instruction and journal club type seminars, and culminating with a thesis research project.

Admission

Applicants must fulfill the requirements for admission established by the School of Graduate Studies. A baccalaureate degree in physical, chemical, or life sciences with undergraduate level courses in biochemistry, molecular biology, molecular genetics, and cell biology is generally required. Preference is given to applicants with a GPA of 3.0 or greater. The Graduate Record Examination scores, a personal goals statement and three letters of recommendation are required. For international students, a TOEFL score of at least 600/250 will also be required.

Degree Requirements

To qualify for the Master of Science degree, students must satisfy the requirements of the School of Graduate Studies, as well as the program requirements. During the first three quarters, students will be required to enroll in 26–30 hours of didactic course work supplemented by laboratory rotations and research activities. During the second year, students will focus on developing a research-based thesis culminating with an oral thesis defense. PTX 990 (Seminar) is required each academic year quarter.

Administrative Organization of the Program

Responsibility for program administration lies within the Department of Pharmacology and Toxicology, School of Medicine. The program director will coordinate all aspects of the M.S. program and serve as ex-officio member of all committees. A program advisor will initially

advise new program entrants until such time as a research advisor is selected by the student and approved by the program director. A thesis committee consisting of two graduate faculty members in addition to the research advisor will be selected by the student in consultation with the research advisor.

Facilities

The Department of Pharmacology and Toxicology occupies the second floor of the Health Sciences Building on the main campus of Wright State University. Resources include seven well-equipped biomedical research laboratories and common equipment facilities. Wright-Patterson Air Force Base (WPAFB) is located immediately adjacent to Wright State University, where the facilities of the Air Force and Naval Toxicology laboratories are available to students in the program. In addition to providing a training site for thesis research, these sites also serve as a window to potential career opportunities for graduates of this program. The laboratories at WPAFB conduct research on the health effects of a wide variety of agents for military and other government agencies including the National Institute of Occupational Safety and Health (NIOSH), the U.S. Environmental Protection Agency (USEPA), and the Agency for Toxic Substances and Disease Registry (ATSDR). The university has an agreement of cooperation with WPAFB promoting educational and research interactions applicable to this M.S. program.

Molecular Biology and Imaging Research Facilities
Students will have the opportunity to utilize state-of-the-art equipment in this core facility maintained within the Department of Pharmacology and Toxicology. The core facility contains a sophisticated protein SELDI-TOF mass spectrometer, a laser scanning confocal microscope (Leica SP-2), an epifluorescence microscope (Leica DM-5), a phosphorimager (Fuji FLA-2000), and a multi-functional microplate reader (Packard Fusion). Computer workstations for storage, quantification, and analysis of data, and high-resolution printers for making images are available.

Integrative Pharmacology Facility
Students will also have the opportunity to utilize computerized behavioral and cardiovascular monitoring equipment to monitor the effects of stress, drugs, and toxicants on these physiological parameters in mice.

Faculty

Professors
Norma C. Adragna, regulation of endothelial cell ion transport
James N. McDougal, dermal toxicology, pharmacokinetic modeling
Mariana Morris (chair), neuoroendocrinology, hypertension

Associate Professors
David R. Cool, neuroendocrinology, intracellular protein sorting
John M. Frazier, predictive toxicokinetics
James B. Lucot (program director), neuro/behavioral pharmacology, stress-toxicity interactions
Thomas D. Lockwood, regulation of cellular proteolysis, control of cardiac blood flow
Javier E. Stern, neurophysiology/neuroanatomy, peptidergic regulation of ion channels

Assistant Professor
Yanfang Chen, Ccrdiovascular diseases — hypertension and stroke, molecular physiology
Khalid Elased, mechanisms of disease—hypertension and diabetes
Courtney E. W. Sulentic, cellular and molecular immunotoxicology

Research

Faculty Research Areas

The program faculty have active research projects in overlapping areas, reflecting a multidisciplinary approach to investigating cardiovascular, toxicological, behavioral, and neuroscience problems. Specific areas of research include: cellular ion transport, prohormone processing and sorting in neurodegeneration, predictive toxicokinetics/hepatic toxicology, protein degradation/myocardial blow flow regulation, neurochemical/behavioral response to toxins, dermal toxicokinetics, molecular and cellular immunotoxicology, neuroendocrinology/cardiovascular function, and electrophysiological studies on peptide control of neuroendocrine/autonomic system.

Course of Study

Program of study	**62-78**
Common core course requirements are:	
PTX 700 Research Techniques	3
CMH 601 Biostatistics	4
PTX 710 Principles of Biokinetics	4
PTX 750 Principles of Biodynamics	4
PTX 751 Molecular Toxicology	4
PTS 990 Seminar	3
Total	**22**
Electives	**3-9**

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Physics

Introduction

The Department of Physics offers two programs of graduate study leading either to the Master of Science or to the Master of Science in Teaching degree. The Master of Science degree program is a research-based master's program with a required thesis. It prepares graduates for employment in private or government laboratories, or for further graduate work. The department participates in PhD programs in Biomedical Sciences, Engineering, and Environmental Sciences.

Admission

Master of Science - Physics

For admission to graduate study in physics leading to the M.S. degree, candidates must:
1. Meet the requirements of the School of Graduate Studies.

2. Hold a B.S. or B.A. If the degree is not in Physics, the graduate studies committee may impose additional requirements.

3. Be recommended for admission by the graduate studies committee of the physics department.

Master of Science in Teaching

For admission to graduate study leading to the M.S.T. degree, candidates must:
1. Meet the requirements of the graduate school.

2. Present evidence of completion of an introductory physics sequence equivalent to the PHY 240, 242, 244, and 260 sequence at Wright State.

3. Have received certification or provisional licensure to teach.

Prior teaching experience is not required but is strongly recommended.

Degree Requirements

Master of Science - Physics

To be awarded the M.S. degree in physics, candidates for the degree must:

1. Meet the degree requirements of the School of Graduate Studies.

2. Complete 45 credit hours of course work listed as available for graduate credit. 36 hours must be physics courses numbered 680 and above, and must include PHY 680, 681, 682, 710, 711, and 712, and no more than 15 hours of PHY 899 (Research).

3. Must complete any course or study requirement imposed at admission.

4. Pass a thesis defense administered by the advisory committee over research work and any topics in the core physics curriculum the committee may deem appropriate.

5. Present an approved thesis to the graduate school.

Details concerning program selection, student evaluation, thesis requirements, and orientation examination may be obtained from the Department of Physics.

Master of Science in Teaching

To be awarded the M.S.T. degree in physics, the candidate must:
1. Meet the requirements of the graduate school for award of a degree.

2. Complete 45 credit hours of course work listed for graduate credit. 36 hours must be for physics courses numbered 620 and above, including PHY 646, 647, 746, 747; and no more than nine hours of PHY899.

3. Submit a report on a research project that was approved by an advisory committee.

4. Successfully complete an examination on the research project administered by an advisory committee.

MST Research Project

Each student, under the direction of the advisory committee and an advisor approved by this committee, is responsible for planning and satisfactorily completing a research project in the areas of physics or the teaching of physics. This project may consist of one of the following:
1. Research into more effective means for the presentation of physics in the classroom.

2. Development of groups of classroom experiments or demonstrations.

3. Writing texts or other classroom materials.

4. Original experimental or theoretical research in an area of physics.

Details concerning program selection, student evaluation, thesis requirements, may be obtained from the Department of Physics.

Performance Standards

Graduate students in good standing in physics must maintain a cumulative average of 3.0. A grade of C is considered a minimum passing grade. Candidates whose average is below 3.0 after 12 hours of graduate work will be placed on probationary status; they will be removed from this status when the average of 3.0 is earned. Students whose average is below a 3.0 after 18 hours of graduate work may be asked to withdraw from the program.

Faculty

Professors

Elliot Brown, solid state electronics (Fellow, APS, IEEE)
Gregory Kozlowski, superconductivity and nanostructures
Lok C. Lew Yan Voon (chair), theoretical physics, solid state
Allen G. Hunt, geophysics
Thomas E. Skinner, nuclear magnetic resonance

Research Professors
Jane L. Fox, atmospheric physics (Fellow, AGU)
David C. Look, semiconductor and device physics (Fellow, APS)

Associate Professors
Beth Basista, physics education
Jerry D. Clark, atomic physics, quantum electronics
Gary C. Farlow, solid state, ion implantation
Brent D. Foy, biomedical physics
Kathy Koenig, physics education
Douglas T. Petkie, molecular spectroscopy
Sarah Tebbens, geophysics

Research Associate Professors
Zhaoqiang Fang, semiconductor and device physics
Naum I. Gershenzon, geophysics and mathematical physics

Assistant Professors
Jason Deibel, terahertz physics
Ivan Medvedev, molecular/terahertz spectroscopy
Sachiko Tosa, physics education

Research Areas
The Department of Physics is involved in five major areas of research: solid state/materials physics, spectroscopy (optical, laser, molecular, and nuclear magnetic resonance), biomedical physics, geophysics and atmospheric physics, and physics education.

Research in solid state/materials physics includes semiconductors, superconductors and nanostructures. The work on semiconductors involves defects in GaN, ZnO and SiC. Among typical phenomena of interest are the effects of radiation damage on electrical properties. Radiation damage and annealing treatments are characterized by Deep Level Transient Spectroscopy, Photoluminescence, Hall Conductivity, and Rutherford Backscattering techniques. Research in superconductors is centered on the processing and preparation of high-temperature superconducting materials. It involves the enhancement of the critical current density and the study of pinning mechanisms and relaxation effects and their dependence on the microstructure of the material. Research into nanostructures involves fabrication of metallic nanoparticles using the solution-phase method, electrochemical deposition, and condensation techniques. Physical characterization of the properties is currently based on the optical behavior of the nanoparticles. In particular the relationship between size and shape of the nanoparticles and their absorption spectra is studied theoretically and experimentally.

Research in the Optical and Laser Spectroscopy Laboratory focuses on temporal and wavelength resolved spectroscopy. Specific research areas include terahertz spectroscopy and the study of high band gap semiconductor materials with techniques of photoreflectance, photoabsorption, and photoluminescence. In addition theoretical and computational studies are directed toward the understanding of energy and particle flow in gas discharge plasmas. Research in the Molecular Spectroscopy Laboratory includes high-resolution spectroscopy, chemical physics, remote and in-situ sensing and molecular collisions. Experimental studies are in the millimeter-wave region of the electromagnetic spectrum on molecules related to the ozone chemistry of the upper atmosphere and

astrophysics-related molecules found in the interstellar medium. Research into nuclear magnetic resonance (NMR) covers theoretical and computational studies of nuclear spin dynamics, yielding new methods for increasing the information yield of NMR experiments.

Research in computational biology includes quantitative modeling of biological processes at the molecular, cellular, and organ level. Bioinformatics research on cellular genomic, proteomic, and metabolomic responses to interventions is done in association with scientists at Wright- Patterson Air Force base and other departments at Wright State University

Research into the physics of the earth is conducted in cooperation with the department of Earth and Environmental Sciences and the Environmental Science Ph.D. program. Subjects addressed include multi-phase flow in porous media, optical and transport properties of real media, sediment transport in turbulent flow, and coupled ocean-atmospheric phenomena. In a broader sense this research addresses the questions of the relative roles of non-linear physics, stochastic forcing, and heterogeneous surroundings in fundamental natural phenomena. Research in atmospheric physics includes the physics, chemistry, and evolution of planetary atmospheres. Mathematical and computational methods are used, utilizing data from satellites and planetary probes to construct models of planetary atmospheres, including the earth's atmosphere.

Research in physics education encompasses undergraduate physics curriculum and in-service teacher professional development. Research on undergraduate physics curriculum includes the development of courses for both pre-service teachers and undergraduate science majors and the study of the effectiveness of these courses at increasing student understanding and retention. Research focusing on in-service teachers involves the development of professional development programs and the study of their effectiveness at instilling best teaching practices in the K-12 classroom and subsequent student achievement.

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Professional Psychology

Faculty

Professors
Kathleen Glaus, Emeritus of Professional Psychology
Kathleen Malloy, Professor of Professional Psychology
John R. Rudisill, Professor Emeritus of Professional Psychology

Associate Professors
Stephen C. McConnell, Associate Professor Emeritus of Professional Psychology
Eve M. Wolf, Associate Professor and Associate Dean of Academic Affairs, School of Professional Psychology

Course of Study

Doctor of Psychology/Psy.D.
The School of Professional Psychology educates professional psychologists, offering a four- or five-year postbaccalaureate program leading to the Doctor of Psychology (Psy.D.) degree. Students may enter the program with either a bachelor's or master's degree, and provisions are available for transfer of some graduate credit.

The school was among the first doctoral programs in the country to open a practitioner model of training in which the primary emphasis in training is on application of psychology rather than on research. The program accepted its first students in 1978, and has been continuously accredited by the American Psychological Association.

The primary goal of the program is to train students broadly as general practitioners to allow students to prepare for an initial focus in a number of established and emerging areas of practice. Students receive training in each of the following areas: Intervention/psychotherapy, relationship skills, psychological assessment, research/evaluation/basic science, consultation/education, and management/supervision.

The program is dedicated to recognizing and infusing diversity throughout its curriculum. The interest in diversity is reflected in the student body, about half of whom are minorities and international students. Faculty and staff respect and reflect diversity.

The school maintains two training clinics-the university's counseling service and the Ellis Institute for Human Development, which is a training, service, and research center located near downtown Dayton. Each student is assigned for at least one year of practicum training to one of these sites. In addition, the program has contracts with a large number of community human service agencies that provide off-campus practicum training.

Extensive financial aid is available to students in the form of tuition waivers and stipends.

Information about the program and materials for admission can be obtained from the school's admissions office at 117 Health Sciences Building, Wright State University, 3640 Colonel Glenn Hwy., Dayton, OH 45435-0001, or by visiting our Web site at http://www.wright.edu/sopp/. The telephone number is (937) 775-3492.

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Psychology

Introduction

The Department of Psychology offers programs of graduate study leading to the Master of Science (M.S.) degrees and the Doctor of Philosophy (Ph.D.) degrees in human factors and industrial/organizational psychology. Human factors, also called ergonomics or engineering psychology, deals with human-machine or human-computer interactions or with the design of specific tasks. It focuses on improving system performance and developing effective interfaces through the application of knowledge of the operator's perceptual and cognitive processes. It emphasizes the technical aspects of a situation, looking for ways to modify the physical environment in order to improve performance. Aerospace-related applications are common at Wright State University because it is adjacent to Wright-Patterson Air Force Base, a major center of human factors research and development. Applications in consumer products, training, computer systems, and command/control are also investigated. Industrial/organizational psychology is primarily concerned with individual, group, and organizational behavior in work settings. It deals with "interfaces" of people with people (either individuals or groups). It focuses on improving system performance and improving organizational design and staffing through the application of knowledge of human personality structure and social-motivational processes. It emphasizes the social side of an environment, looking for ways to modify the set of people who interact in and with a system by selecting people who fit an environment, by training, or by designing organizational structures to motivate performance.

Students may enter a terminal M.S. degree program, specializing in either human factors or industrial/organizational psychology.

Students may also enter the Ph.D. program, specializing in either human factors or industrial/organizational psychology, but the program will foster an understanding of both areas and the importance of considering both aspects in the design of industrial, aerospace, and other systems. The area of specialization will be considered the major focus area while the other area will serve as a minor focus area.

Admission

Students may be admitted into either the terminal M.S. program or the Ph.D. program. Students admitted to the Ph.D. program should have a baccalaureate degree from an accredited institution with a major in psychology or at least 24 quarter credit hours of psychology. Students should have completed courses in cognition or human learning, sensation and perception, social or organizational psychology, personality or test and measures, or abnormal, experimental design/statistics, and experimental methods. Ideally, students should also have completed a year of physical or biological science, courses in mathematics, and computer science. Students who are missing one or more prerequisite courses will be expected to complete appropriate remedial course work at the onset of the

program, in addition to degree requirements. Students admitted to the terminal M.S. program should have a baccalaureate degree from an accredited institution and must have completed most of the specified course work.

All prospective students must submit an official transcript from each institution attended. Scores on the Graduate Record Examination (verbal, quantitative) also must be submitted. Three letters of recommendation must be received from previous university professors or relevant professionals. Applicants also must submit an essay describing their professional goals and current academic interests in human factors or industrial/organizational psychology.

All admissions are competitive. Applications will be evaluated to determine the likelihood of success in the program and potential for a career in human factors or industrial/organizational psychology. Evaluation criteria will include: cumulative grade point average, verbal and quantitative Graduate Record Examination scores, performance in relevant course work, letters of recommendation, previous research experience, relevant job experience, and other information about writing and quantitative skills. Applications are due by January 1 for fall consideration.

Degree Requirements

Master of Science

In order to qualify for a Master of Science degree, students must complete all of the following requirements, in addition to satisfying requirements of the School of Graduate Studies.

1. Complete a minimum of 55 quarter-hours of course work
2. Complete course work in the following areas:
Eight credit hours of core psychology courses
Eight credit hours of major focus courses
Four credit hours of minor focus courses
Three-course sequence in research design, methods, and statistics
3. Complete first-year research requirement
4. Complete an acceptable research-based thesis, including a written proposal and thesis, and oral defense of both

All course work and program options may be used to satisfy requirements only if officially approved on the Program of Study. Students must declare either human factors or industrial/organizational as their major focus. Additional information may be obtained from the Department of Psychology.

Doctor of Philosophy

In order to qualify for a Doctor of Philosophy degree, students must complete all of the following requirements, in addition to satisfying requirements of the School of Graduate Studies.

1. Complete a minimum of 136 quarter-hours of course work
2. Complete course work in the following areas:
At least three core science psychology courses
Twenty-four credit hours of major focus courses
Twelve hours of minor focus courses
Three-course sequence in research design, methods and statistics
One advanced course in research design, methods and statistics
Course in history and systems in psychology

3. Complete first-year research requirement
4. Complete an acceptable M.S. thesis, including a written proposal and thesis, and oral defense of both
5. Pass the qualifying exam
6. Meet residency requirements
7. Meet practical experience requirements
8. Complete a Ph.D. dissertation and successfully defend the dissertation in an oral exam conducted by a dissertation committee

All course work and program options may be used to satisfy requirements only if officially approved on the Program of Study. Students must declare either human factors or industrial/organizational as their major focus. Additional information may be obtained from the Department of Psychology.

Facilities

The programs in human factors and industrial/organizational psychology are a major focus of departmental activity; two-thirds of the faculty in the department specialize in one of the two program areas. Students enter a program with a critical mass of faculty and students and a wide variety of research opportunities.

The Department of Psychology maintains general laboratories to support teaching and research. There are two PC laboratories. Each one contains 17 computers with flat screen LCD color monitors and two printers.

The Department also maintains a Macintosh laboratory. It contains 16 Apple intel-based computers with high-resolution 17-inch color monitors and two Xerox laser printers. The individual microprocessors are interconnected via a 3COM local area network. Special purpose equipment, such as a Prichard Photometer, Kay Sound Spectrum Analyser, and Hewlett-Packard Color Scanner are available. The Department has a variety of other general-purpose facilities for individual and small group testing. These include audio-visual equipment for taping or presenting information to group, observation rooms with one-way windows, and laptop computers for field research.

The Department of Psychology has research space, faculty and graduate student offices, and general classroom space all located in Fawcett Hall. The space has been completely remodeled for psychological research. The Department occupies the third, fourth, and fifth floors of Fawcett Hall. The fourth and fifth floors consist of 20,000 square feet of space exclusively for psychology research. Each Psychology faculty member currently maintains a laboratory to support his or her research activities. Specialized equipment in these research laboratories supports research on sensory process, motor control, spatial orientation, human-computer interaction, display design, flight simulation, memory aging, expertise, teamwork, assessment, training, and stress in the workplace. Computer facilities include UNIX workstations, PC’s, and Mac’s. Descriptions of faculty laboratories are given under the appropriate faculty’s individual Web page. These laboratories are well –equipped for behavioral research.

Students and faculty also have access to specialized laboratories and equipment which are unique to the Dayton metropolitan area. The Department of Psychology at Wright State University and the Armstrong Laboratory at Wright-Patterson Air Force Base have an official Memorandum of Agreement which facilitates the sharing of equipment, facilities, and personnel. Specialized high fidelity simulators and other test facilities are available and have been used by Department of Psychology faculty and students. In addition, the Department has excellent working relationships with other laboratories and facilities. Several faculty and students have conducted research at the Crew Station Evaluation Facility at Wright-Patterson Air Force Base. Department of Psychology faculty also has excellent working relationships with area corporations and industries.

The department of Psychology maintains a Psychology Computer Services (PCS) facility to support research and teaching. The PCS has two computer engineers. The PCS provides software, hardware, and network support.

Research is also conducted in off-campus facilities. Dayton is a major center for human factors research. The Department of Psychology has a Memorandum of Agreement with the U.S. Air Force Armstrong Laboratory, which facilitates use of its sophisticated behavioral laboratories such as flight simulators and the Auditory Localization Facility for free field binaural research. Dayton is also an area of considerable industrial and corporate strength. Industrial/organizational research is conducted in conjunction with local firms. Faculty and students interact with many colleagues in government and the private sector.

Faculty

Professors

Kevin Bennett, human-computer interaction, training, graphic display design
Herbert Colle, mental workload, keyboard interfaces, working memory
John Flach (chair), perceptual-motor skill, ecological psychology, human-machine systems
Helen Altman Klein, developmental, applied psychology, home design for aged
Allen Nagy, color displays, visual science
Wayne Shebilske training complex skills, spatial orientation
Pamela Tsang, time sharing performance, aviation, aging

Associate Professors

Nathan Bowling, job attitude, occupational stress, workplace aggression
Jean Edwards, personality assessment, stress
Robert Gilkey, binaural displays, masking, psychoacoustics, virtual environments
Debra Steele-Johnson, training systems and feedback, intelligent tutoring
David LaHuis, personnel/organizational psychology
Corey Miller, personnel psychology, legal issues, diversity management
Tamera Schneider, stress and physiology, persuading healthy behaviors
Valerie Shalin, workplace expertise and learning, aiding and training technology
Scott Watamaniuk, visual motion, eye movements

Assistant Professors

Gary Burns, personality assessment, judgment and decision making, selection

Financial Assistance

The department awards both graduate teaching assistantships and graduate research assistantships. These appointments carry a waiver of tuition and instructional fees for both residents and nonresidents. Incoming students should express their interest as a part of the application process. Appointments are made for one academic year and may be renewed. Teaching assistants will have instructional responsibilities, and research assistants will be responsible for supporting research under the supervision of a faculty member. For additional information on financial aid, see the “Financial Assistance, Fees, and Tuition” section.

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Public Administration

Introduction

The Department of Urban Affairs & Geography offers the Master of Public Administration (MPA) degree. Wright State University's MPA program is fully accredited by the National Association of Schools of Public Affairs and Administration (NASPAA).

The primary mission of the MPA degree program is to prepare students to be successful public and nonprofit administrators and managers in today's urban and global environment. The program is composed of both part-time and full-time students. Classes are offered by full-time faculty and distinguished practitioners from the greater Dayton region who serve as affiliated faculty. While the majority of MPA students complete their program of study in two years, one-year and three-year programs of study are also available..

Students may, in concert with their advisor, design their MPA curriculum to emphasize subfields, such as public management, nonprofit management, community development, or public planning. Other areas of emphasis may be developed with the careful selection of elective courses. The MPA program additionally offers a certificate in nonprofit administration sponsored by the American Humanics Association. A dual degree option offered in concert with the Master of International and Comparative Politics is also available to all MPA students.

For further information, please visit the MPA program website at www.wright.edu/mpa or contact the MPA Program Director, Dr. Jerri Killian, at 937-775-4451.

Admission

Students interested in the MPA program must first present a baccalaureate degree, preferably in the social or behavioral sciences, with an overall undergraduate grade point average of 3.0 or better on a 4.0 scale. Students who do not meet this grade point average requirement should review the policies of the School of Graduate Studies and the Department of Urban Affairs and Geography for other options.

Applicants must submit transcripts of all previous college work, three letters of recommendation from individuals familiar with their academic or professional achievements and their ability to meet the rigorous requirements of graduate studies, and a 400-word written essay outlining professional and personal goals and how the MPA degree will help them achieve these goals.

Applications for the MPA program should be completed by June 30 for admission the following Fall to receive full consideration. However, the deadline for applicants requesting financial assistance through a Graduate Assistantship must submit the application for the MPA program and the application for the Graduate Assistantship by April 30.

Students begin the MPA program in the Fall quarter each year. Exceptions to this policy are rare, but may be considered on a case-by-case basis at the discretion of the MPA program.

Advising

Upon gaining acceptance into the MPA program, students attend the department's fall orientation session to become acquainted with each other, the MPA faculty, the MPA Advisory Board, the department of Urban Affairs and Geography, and the MPA program. In addition, MPA students are assigned a faculty advisor upon acceptance into the program and must meet with their advisor to complete a program of study. The program of study identifies courses to be completed, the timing of these courses, and the planned date of graduation from the MPA program. Faculty advisors are available to MPA students throughout their enrollment in the program and beyond.

Degree Requirements

The MPA curriculum consists of 52 credit hours of approved course work. The curriculum requires: (A) 32 credit hours of core courses, (B) 4 credit hours of a culminating project, or 8 credit hours of thesis, (C) 4 credit hours of internship (students with appropriate professional experience may substitute an elective course with advisor approval) and (D) elective courses approved by an advisor for the remainder of the required credit hours.

Internships are designed to meet the needs of students with no or limited prior experience in the public or nonprofit sectors and to assist with post-graduation job placement. In-service students may substitute an elective course for the internship requirement with advisor approval.

When completing the culminating project requirement, students have the option of participating in a capstone project or completing an applied research project that focuses on an approved topic relevant to public or nonprofit administration. The capstone project utilizes small student teams while the applied research project is performed individually. In both forms of the culminating project, students apply research methods and qualitative and /or quantitative techniques to study and analyze "real world" problems experienced by a local community, public agency, or nonprofit organization and make recommendations to improve or solve them. In lieu of these culminating project options, students may choose to complete a thesis. Advisors are available to help students choose the most appropriate option for their culminating project.

Faculty

The teaching philosophy of the MPA faculty emphasizes analytical thinking, ethical conduct, public leadership, and critical administrative skills. MPA faculty are experienced in issues relevant to public and nonprofit administration within the region and beyond, and these experiences enliven the classroom. In addition to producing traditional and applied scholarship, the faculty also serve on governing and advisory boards of local, state, and national organizations.

The core MPA faculty and their specific areas of expertise are:
- Jack Dustin, Ph.D. (Chair and Director of the Center for Urban and Public Affairs), city and regional administration, comparative administration, quantitative analysis
- Jerri Killian, Ph.D. (MPA Program Director), ethical leadership, organizational theory, human resource management, comparative administrative reform
- Myron Levine, Ph.D., urban politics, public policy analysis, local and regional government
- Jennifer Subban, Ph.D. (American Humanics Program Director),, nonprofit management,

social/welfare policy, strategic planning
- Mary V. Wenning, Ph.D. policy analysis, housing and land use policy, public planning
- Enamul Choudhury, Ph.D., research methods, public budgeting, ethics

In addition to the core MPA faculty, distinguished managers and administrators from a wide range of public and nonprofit organizations serve as adjunct instructors and/or as guest speakers in many MPA courses. These experienced professionals enhance the learning experience by emphasizing "real world" applications of relevant theories, models, and concepts in attempts to solve public and organizational problems. Affiliated MPA faculty include, among others, city managers, county administrators, CEOs of nonprofit organizations, and community leaders.

Financial Assistance

Graduate Research Assistantships (GRAs) are awarded on a competitive basis to a limited number of qualified students each year, based on the availability of funding. Students accepted in degree-seeking status who are not employed are encouraged to apply for a GRA position. Applications are available on the MPA website (www.wright.edu/mpa) and from the department.

Recipients of GRA positions receive tuition assistance and a stipend is also awarded to each GRA. In return, GRAs work approximately 20 hours per week in the department's Center for Urban and Public Affairs (CUPA) during the academic year, on CUPA projects that will develop or enhance their analytical and problem solving skills, and knowledge of public service.

Please contact the WSU Office of Financial Aid for additional information concerning financial assistance.

Course of Study

MPA	**Credit hours**
Core Courses	**32**
URS 700 Environment of Public Administration	4
URS 701 Statistics for Public Managers	4
URS 702 Organizational Theory/Management Behavior	4
URS 703 Public and Non-profit Budgeting	4
URS 704 Public Planning	4
URS 705 Public Human Resources Administration	4
URS 706 Research Methods in Public Administration	4
URS 707 Quantitative Analysis for Public Managers	4
Additional Requirements	**4-16**
URS 708 Capstone Project or URS 709 Research Project	4
URS 791 Internship (may be waived for in-service students)	4-8
URS 799 Thesis (in lieu of URS 708 or URS 709)	8
Elective Course Options	**12-20**

The following list reflects selected elective courses offered by the department. With approval from their advisor, MPA students may also select courses from other graduate programs

URS 612 Cities and Technology	4

URS 613 Legal Environment of Public Administration	4
URS 614 Public Fiscal Administration	4
URS 615 Community Development I	4
URS 616 Community Development II	4
URS 617 Urban Labor Relations	4
URS 618 Urban Public Works Administration	4
URS 621 Comparative Public Administration	4
URS 623 Issues in Urban Management (varied topics)	4
URS 624 Issues in Urban Planning (varied topics)	4
URS 625 Issues in Urban Development (varied topics)	4
URS 627 Urban Policy Analysis	4
URS 650 Ethics in Public Service	4
URS 655 Strategic Planning	4
URS 670 Public and Nonprofit Leadership	4
URS 675 Management of Nonprofit Organizations	4
URS 676 Fundraising/Grantwriting	4
URS 677 Philanthropy in Urban Development	4
URS 678 Management of Volunteer Organizations	4
GEO 565 Cartography	5
GEO 647 Geographic Information Science Principles	5
GEO 648 Advanced Geographic Information Science	5
GEO 655 Geography of Transportation	4
Total	**52**

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Public Health

Introduction

Wright State University School of Medicine is pleased to offer the Master of Public Health (M.P.H.) degree, a graduate program for leaders in public health. Four concentrations are available including: Public Health Management, Global Health, Health Promotion & Education, and Emergency Preparedness. The M.P.H. program is founded on the principles of community-academic partnership, with the strength of seven Colleges/Schools at Wright State University, collaboration with the University of Cincinnati, and participation with 24 health districts throughout a sixteen county region.

The program is the first in the nation to incorporate a community-based, interdisciplinary educational program in public health with this particular combination of colleges and schools. While grounded in traditional classroom instruction, distance learning plays a key role in the program. The program is responsive to the educational needs of working professionals in southwestern Ohio who serve over 2.8 million residents.

Admission

Graduate School Admissions

Applicants must fulfill the requirements for admission established by the School of Graduate Studies. Minimum graduate school requirements include an earned bachelor's degree from an accredited college or university and a minimum undergraduate grade point average of 2.7 (based on a 4.0 grading scale). Official Graduate Record Examinations (GRE) test scores must be submitted, except for applicants with an earned graduate or advanced professional degree.

MPH Requirements for Admissions

Students must submit: (1) a personal statement of interest addressing career goals and objectives; (2) three letters of recommendation, preferably from a public health or other healthcare or community professional, (3) a completed MPH application form, and (4) official GRE test scores, as indicated above. An on-site interview is required prior to a final admission determination.

Degree Requirements

Seven core courses will be offered and must be completed by all students admitted to the program. Each student will select one concentration area of study and complete a minimum of 12 hours of study in that area. A field placement is completed during the summer quarter between the first and second year of study. Each student will work with a

faculty representative and a community preceptor. The second component of the applied learning is the intensive culminating project. Each student will work with his or her faculty advisor to develop an appropriate applied project. The applied project will include elements from the core courses as well as mastery of the concentration area of study. The student will have a primary program committee including an academic advisor, one additional university faculty member, and a field practicum representative. Program committee members will work closely with students in the development and completion of the project. The culminating experience has three primary components: a proposal, a written applied project paper, and an oral presentation.

Faculty

Richard Schuster, M.D., M.M.M., Program Director
William Mase, M.P.H., M.A., Associate Director
Marietta Langlois, Ph.D., Health Promotion and Education Director
James Ebert, M.D., M.B.A., Public Health Management Director
Mark Gebhart, M.D., Emergency Preparedness Director
Eriko Sase, Ph.D., Global Health Systems Director
Ray Ten Eyck, M.D., M.P.H., FACEP, Associate Director of Public Health Practice
Ken Dahms, J.D., M.A., Assistant Director of Public Health Service
Petra Weaver, Program Coordinator
Nancy A. Terwoord, R.N., B.S., C.P.H.Q., Coordinator of Program Planning & Evaluation

Core Faculty
Ken Dahms, J.D., M.A., Public Health Service
Harry Khamis, Ph.D., Biostatistics
Marietta Langlois, Ph.D., Social & Behavioral Sciences
William Mase, M.P.H., M.A., Introduction to Public Health
John McAlearney, Ph.D., Health Economics
Sara Paton, Ph.D., Epidemiology
Janet Rickabaugh, Ph.D., Environmental Health
Richard Schuster, M.D., M.M.M., Health Systems Management
Ray Ten Eyck, M.D., M.P.H., F.A.C.E.P., Public Health Practice

Health Promotion & Education Faculty
Marietta Langlois, Ph.D., Director
Katherine Cauley, Ph.D
Shallini Forbis, M.D., M.P.H.
Barbara Fowler, R.N., Ph.D.
William Mase, M.P.H., M.A.
Sara Paton, Ph.D.
Drew Pringle, Ed.D.
Janet Rickabaugh, Ph.D.

Public Health Management Faculty
James Ebert, M.D., M.B.A., Director
Sherman Alter, M.D.
Gerald E. Crites, M.D.
John Czachor, M.D.
Ken Dahms, J.D., M.A.
Gary Ensor, D.D.S.
Robert E. Hickey, Jr., J.D.
Harry J. Khamis, Ph.D.
Patricia Kinder, R.N., M.S.N.
Michael R. Kriner, B.S.
John S. McAlearney, Ph.D.
Daniel D. Mefford, C.P.A., M.B.A., F.A.C.M.P.E.

Melissa Miller, R.N., J.D.
Thomas F. Murphy, M.D., M.P.H.
Morton Nelson, M.D., M.P.H.
Arthur Pickoff, M.D.
Eriko Sase, Ph.D.
Richard Schuster, M.D., M.M.M.
Craid Self, CHE, M.B.A.
Jennifer E. Subban, Ph.D.
Marianne L. Weber, M.Arch, M.H.S.A.
Kathleen M. Wolner, M.D.
Peter K. Wong, Ph.D., M.B.A., R.Ph.
Richard Wyderski, M.D., M.M.M.

Emergency Preparedness Faculty
Mark Gebhart, M.D., Director
Ray Ten Eyck, M.D., M.P.H.
Glenn C. Hamilton, M.D., M.B.A.
Thomas Herchline, M.D.
Tim Shaw, J.D.

Public Health Clinical Faculty
Gary Crum, Ph.D., M.P.H.
James Luken, RS, M.P.H.
Mark McDonnell, M.S.
Morton Nelson, M.D.
Charles Patterson, M.B.A.

Course of Study

Core Curriculum	**Credit Hours (Quarter)**
Introduction to Public Health and Health Policy	4
Health Systems Management	4
Biostatistics for Health Professionals	4
Public Health Epidemiology	4
Environmental Health	4
Social and Behavioral Determinants of Health	4
Economics of Health and Health Policy	4
Sub Total	**28 credit hours**
Concentration Courses (12 hours)	
Concentration Course	4
Concentration Course	4
Concentration Course	4
Concentration Course	4
Subtotal	**16 credit hours**
Practice Placement	4
Culminating Experience	8
Subtotal	**12 credit hours**
Total Hours	**56 credit hours**

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Graduate Programs

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Renewable and Clean Energy

Introduction

The Department of Mechanical and Materials Engineering offers a program of graduate study leading to a Master of Science in Engineering (M.S.E.) degree with a major in Renewable and Clean Energy. The Renewable and Clean Energy program includes courses on many types of alternative energy systems, in addition to courses on fundamental concepts related to energy. Included in this program are courses on fuel cells, solar energy, wind power, hydrogen fuel, energy conversion, energy materials, energy efficiency, thermodynamics, etc. The intent of this program is to train the next generation of renewable and clean energy engineers and to develop research in the area of renewable and clean energies. For more information about the Renewable and Clean Energy program, see our Web site at http://www.cs.wright.edu/mme/future-grad-rce.shtml . For more information about the Mechanical and Materials Engineering Department see the Web site http://www.cs.wright.edu/mme/.

Admission

To be considered for admission to the M.S.E.— Renewable and Clean Energy program, students must first satisfy the basic requirements of the School of Graduate Studies. This includes having a bachelor's degree in engineering or a related area with an overall undergraduate grade point average of at least 2.7 (on a 4.0 scale) or an overall undergraduate grade point average of at least 2.5 with an average of 3.0 or better for the last 90 quarter hours (60 semester hours) earned toward the undergraduate degree. International students must have a TOEFL score of at least 550/213. In addition, the program requires students from non-ABET accredited undergraduate programs to submit general GRE test scores. Program admission decisions are based on complete application information including overall academic performance and standardized tests scores where applicable.

Collaboration

As part of this program students will be expected to take at least one course from the University of Dayton and one course from the Air Force Institute of Technology. They are welcome to take more classes than this at these two institutions; however, it is required that more than half of the total credits for this degree be taken at Wright State. Registration for classes at the University of Dayton can be done at Wright State through the SOCHE program.

Degree Requirements

Students should plan a program of study in consultation with a faculty advisor. The

program of study should be finalized by the time the student completes 12 credit hours of graduate study.

The following requirements must be met for the Master of Science in Engineering in Renewable and Clean Energy degree:

1. Completion of 45 graduate credit hours in courses that have prior approval by an engineering graduate advisor.

2. At least 36 of the total 45 graduate credit hours must be engineering or computer engineering courses. At least 24 of these must be engineering courses.

3. At least 12 of the 36 graduate credit hours of engineering and computer engineering must be courses numbered above 700, excluding ME 899, Thesis.

4. At least 3 of the total 45 graduate credit hours must be from a course in mathematics or statistics.

5. Students must choose either a thesis option or advanced course work option. Students employed as teaching or research assistants through the School of Graduate Studies at any time during their degree candidacy must choose the thesis option.

Thesis Option: A thesis satisfying all requirements of the School of Graduate Studies must be completed and successfully defended in an oral examination before the major committee. Up to 12 credit hours of ME 899, Thesis, may count toward degree requirements of 45 total graduate credit hours and 36 graduate credit hours in engineering or computer science.

Course Option: Students must complete 12 credit hours of courses numbered 700 or above in addition to the 12 hours specified in requirement 3.

Facilities

Graduate students have access to a wide range of modern facilities including classrooms, laboratories, and computer systems interconnected by local and wide area communication networks. Computational facilities include numerous Sun, DEC, and Silicon Graphics fileservers and workstations; X-windowing terminals; and personal computers. Access is also available to the Ohio Super-computer via the Ohio Academic and Research Network (OARNET).

Faculty

Professors

Bor Z. Jang, fuel cells, lithium ion batteries, super capacitors
James A. Menart, solar energy, heat transfer, thermodynamics

Assistant Professors

Hong Huang, fuel cells, lithium ion batteries, super capacitors
Amir A. Farajian, hydrogen storage, carbon nanotubes
Rory Roberts, fuel cells, energy systems
Daniel Young, fuel cells, storage capacitors

Graduate Assistantship

Assistantships are available to students on a competitive basis. Students awarded assistantship support are eligible for stipends and remission of tuition fees. Interest in

financial support should be indicated at the time of application.

Research

Research in renewable and clean energy is a new an upcoming field at Wright State University. Currently there is a good deal of fuel cell research occurring. We have faculty that have done work in the areas of batteries, superconducting capacitors, hydrogen fuel, new materials for energy applications, geothermal energy, etc.

Research at Wright State is not limited to the laboratory facilities on campus. Several industrial companies, laboratories, and Wright-Patterson Air Force Base are involved in joint research efforts with the university and have unique facilities that are available for faculty and graduate research.

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School Nurse Licensure

Introduction

The purpose of Wright State University's Professional Pupil Services School Nurse Licensure Program is to prepare highly qualified school nurses. These future school nurses must first complete a baccalaureate degree with course work in growth and development, psychology, sociology, and/or anthropology. Each candidate must also have course work in community health and a current license to practice as a registered nurse issued by the Ohio Board of Nursing.

This post baccalaureate School Nurse Licensure Program is designed to build upon an undergraduate education and to prepare the school nurse to be a collaborative team member within the school and community system. A 22-credit, graduate-level program, with courses taught by both the College of Nursing and Health and the College of Education and Human Services, requires course work in school nurse related topics. In addition, students must successfully complete an all-day, 10-week, Monday through Friday practicum in the school under the supervision of a university supervisor and a licensed school nurse.

Admission

In addition to meeting requirements for admission established by the School of Graduate Studies (these requirements can be reviewed at this Web site http://www.wright.edu /academics/catalog/grad/admissions/), candidates for these degrees who do not meet the minimum cumulative GPA requirement to waive the GRE or MAT, must submit satisfactory Graduate Record Examination (GRE) or Miller Analogies Test (MAT) scores, unless otherwise noted (Waiver of GRE/MAT).

All students considering graduate-level courses in education and human services should do so with the understanding that graduate study differs in quality expectations from undergraduate study. Graduate study requires that students be increasingly self-directed and possess strong analytical skills. Students are not guaranteed a master's degree by attending and completing courses. Exit requirements must be met in all programs.

Admission to the College of Education and Human Services is based on the candidate's written statement of purpose, consideration of undergraduate and/or graduate cumulative grade point average, submission of satisfactory scores on either the MAT, GRE, or other required examination, and in some cases, letters of reference and a personal interview (see Waiver of GRE/MAT).

Technology Policy
For admission to the college, all College of Education and Human Services students, graduate and undergraduate, part-time and full-time, will be expected to certify that they

own or have access to a computer and the Internet.

In order to meet the mission of the college "…to prepare professionals to meet the educational and human services needs of a diverse, democratic society," it is necessary for our students to play an active role in the technological environment the college and Wright State University are creating to assist in the completion of this mission. An increasing number of classes and options will become available to students using a variety of distributed learning formats; library resources are available in a growing number of full-text formats, and global connections via telecommunications will be part of daily operations. Students preparing to become professionals in education and human service areas must demonstrate appropriate and effective skills and knowledge in technological aspects of their work.

Minimum equipment requirements are recommended by Wright State University's Computing and Telecommunications Services (CaTS). Please check the following Web Site http://www.wright.edu/cats/purchase/pcguidelines.html for current information about minimum equipment requirements.

The college supports Macintosh computers in faculty and staff offices and maintains a computer lab. Wright State University has purchased a site license for most Microsoft software (see the Web page for Wright State's Computing and Telecommunications Services, http://www.wright.edu/cats/ for details).

Admission Standards
Admission into regular status requires an overall undergraduate grade point average of 2.7 (based on a 4.0 grading system) or an overall undergraduate grade point average of 2.5, but with a 3.0 or better for the last 90 quarter hours (60 semester hours) earned toward the undergraduate degree. Admission into this status also requires approval by a degree program.

Candidates with a grade point average of less than 2.3 on a 4.0 grading system are not ordinarily admitted to graduate school. A petition process is available to formally request admissions not having met an admission standard.

Prerequisites

1. Baccalaureate degree with course work in growth and development, psychology, sociology, and/or anthropology
2. License to practice professional nursing in the State of Ohio
3. Course work in community health

Provisional
Under certain conditions, a student may be admitted provisionally (for one quarter only), pending receipt of credentials. If admission requirements are not met during the quarter in which a student was admitted provisionally, registration for future quarters will be denied and the student will lose graduate credit for any graduate courses completed during the quarter.

Conditional
Students who have an undergraduate grade point average of 2.5 or better, or who have an average between 2.3 and 2.5 with 2.7 or better in the last half of undergraduate work, may be granted conditional admission.

Regular admission to the College of Education and Human Services is granted after successful completion of 12 hours of course work with a grade of B or better in each course.

Licensure Candidate
Students who wish to complete licensure requirements at the graduate level but do not wish to pursue a graduate degree may be admitted as licensure candidates with the permission of the department in which the programs are housed.

School Nurse Certificate Program
The program may be offered on-line during the academic year on an enrollment-dependent basis with NUR 642 and NUR 640 offered during the winter and spring quarters. HPR 640 is offered in the summer.
The School Nurse Certificate Program is a 22 graduate credit hours non-degree program that is a collaborative offering between the College of Nursing and Health and the College of Education and Human Services leading to endorsement for licensure as a school nurse in Ohio. Applications are due to the School of Graduate Studies before beginning your course work. Applications received after March 30th for the first time will be reviewed a space available basis only if there are sufficient numbers of students, NUR 640 and NUR 642 will be offered in the summer.

Requirements for admission:
• Baccalaureate degree from an accredited college. The degree does not need to be in nursing.
• A copy of current Ohio RN License submitted with application.
• Evidence of courses in community health, sociology, family, growth & development on your transcript.
• Undergraduate grade point average (GPA) of 2.7 on a 4.0 scale.

Directions for Applying to the School Nursing Certificate Program: You must complete the entire "Application for Admission to a Graduate Status " from the School of Graduate Studies accompanied by a $25 nonrefundable one-time fee. Indicate the following under "Academic Information":
1. Admission status: Certification
2. Desired degree: leave blank
3. Selected program: Certification Candidate
4. Major/Concentration: School Nurse
5. A Statement of Objectives which is a brief essay clarifying your career goals.

Submit all materials including official transcripts to:
Wright State University
School of Graduate Studies
E344 Student Union
Dayton, OH 45435

Class Information for 2007

NUR 762 (3 credits) Spring 2007, Fall 2007
NUR 766 (3 credits) Winter 2007

Fall classes: The NUR 643 School Nurse Practicum Seminars are planned to be held weekly on-line in the late afternoon-early evenings during Fall Quarter and on selected Saturdays on campus. The HPR 643 School Nurse Practicum Seminar will be held on campus one Saturday, usually the first of the quarter.

Contact Information
We are located in the College of Nursing and Health at Wright State University in University Hall. Directions to WSU can be found at http://www.wright.edu/aboutwsu/maps/index.html

Please call the program secretary at 937-775-2576 for additional information or with updated information for the mailing list.

Program Faculty Contact Information:

Dr. Susan Praeger, APRN, BC Professor
College of Nursing & Health
128 University Hall
Wright State University
3640 Colonel Glenn Hwy.
Dayton, OH 45435
susan.praeger@wright.edu
937-775-2594

Ms. Becky Bower, MS, ATC, LAT
Education Coordinator
College of Education & Human Services
316 E. J. Nutter Center
Wright State University
3640 Colonel Glenn Hwy.
Dayton, OH 45435
rebekah.bower@wright.edu
937-775-3259

Nondegree Status
Persons who have a bachelor's degree may enroll in nondegree status for graduate courses without being admitted to a graduate program. If you wish to enroll in a degree program, only 50 percent of such credits may be applied to a degree program if they are appropriate.

Faculty

Professors
Gregory R. Bernhardt (dean), education, counselor education

Associate Professors
D. Drew Pringle (chair), health and physical education

Lecturers
Rebekah Bower, athletic training

Course of Study

Professional Requirements	
HPR 640 The Role of the Nurse in Schools	5
HPR 643 Practicum in School Nursing	5
NUR 640 School Nursing	5
NUR 642 Assessment of Children and Adolescents in Schools	2
NUR 643 Practicum in School Nursing	5
Total	**22**

Approved Course Substitutions:

NUR 766 or NUR 762 for NUR 642
NUR 744 for NUR 643

*The HPR 643/NUR 643 Practicum in School Nursing courses are reserved for students who have been officially admitted to the School Nurse Licensure program and have successfully completed the prerequisite course work (HPR 640, NUR 640, 641, 642). Written permission of the instructor is required to register.

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Selected Graduate Studies

Introduction

Under a carefully administered program, students may develop a proposal for a master's degree that is not available in any one existing program, but combines elements of two or more existing master's degree programs. One-of-a-kind programs are possible in certain circumstances, and may be pursued in one of the following ways:

• A new student may develop a proposal for a master's degree that is not available in any one existing program. The proposal must be approved by an Advisory Committee comprised of three or more members of the graduate faculty from two or more programs. The proposal must be presented to the dean of the School of Graduate Studies, who will forward it to the Policies Committee of the Graduate Council for review and approval. The proposal must be signed by the student and the faculty member who is to serve as chair of the student's Advisory Committee; it must also be countersigned by the other faculty members of the Advisory Committee. The members of the Advisory Committee must be graduate faculty from programs that currently offer master's degrees.

• A student in an existing Wright State University master's program may, before having completed 24 credit hours of work, develop a proposal and follow the procedure as indicated above.

Degree Requirements

To guarantee the integrity of one-of-a-kind programs, the School of Graduate Studies will require that proposals follow these general guidelines:

1. All School of Graduate Studies requirements for degrees must be observed, such as the minimum number of credits to be earned, time limits and deadlines, the necessity of graduate faculty status for all Advisory Committee members, etc. The proposal must indicate whether the degree will be a Master of Arts or a Master of Science degree.

2. The written proposal must include three essential elements: a definition of the program, its rationale, and a list of required courses and additional suggested courses.

3. The proposed program may not be a patent device for escaping either the rigor or the specific requirements of already existing programs. The proposed program must have its own integrity and focus; it is not to be merely a survey of general knowledge in several fields of learning.

4. 500-level courses for graduate credit will be permitted in one-of-a-kind programs only in exceptional cases. If a substantial amount of lower-level work is required, it must be taken without graduate credit.

5. The program of study will contain a reasonable number of formal courses other than independent readings or independent studies from one or several departments. All required independent study courses must be outlined in the proposal.

6. A one-of-a-kind program will be approved only when the same objective cannot be accomplished by adding 12 or fewer credit hours to an existing degree program.

7. A proposal for a one-of-a-kind program that has been approved by the School of Graduate Studies will constitute the student's graduate program from which departures will be permitted only with the approval of the chair of the student's Advisory Committee. Those courses designated by the student's Advisory Committee as required in the program can be altered only with the approval of the Policies Committee of the Graduate Council. Upon application for admission to candidacy for the degree, the School of Graduate Studies will monitor the courses completed against those in the approved program. Departures from the required program of courses that have not had prior approval in writing cannot be credited toward the degree.

8. All one-of-a-kind master's degree programs must have a thesis or exit examination requirement. A School of Graduate Studies representative shall be appointed on all one-of-a-kind master's degree thesis defenses or exit examinations. This person shall be a member of the Policies Committee of the Graduate Council. The Policies Committee serves as the graduate program committee for one-of-a-kind degree programs.

9. The student's Advisory Committee shall meet no less than once each quarter.

10. Students pursuing these degrees will have "Selected Graduate Studies" listed on their transcripts as their major. Upon completion of the degree, the student may add a subtitle following "Selected Graduate Studies" which specifies the exact nature or title of the program undertaken.

Students interested in such a one-of-a-kind degree should contact the School of Graduate Studies for further information.

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Statistics

Introduction

The Department of Mathematics and Statistics offers the Master of Science degree in applied statistics. The graduate program is designed primarily to prepare graduates for careers in business, industry, or government, but can be tailored to provide a solid foundation for doctoral studies in statistics. The graduate program in applied statistics is open to persons with bachelor's degrees in a variety of fields besides mathematics and statistics. The prior mathematical training needed for entrance into the program has been kept to a minimum to accommodate students with undergraduate majors in fields such as biology, business, or one of the social sciences. The department makes provision for part-time degree candidates by offering all required courses in the late afternoon or evening.

Early consultation with the statistics graduate advisor is recommended, since the advisor works closely with the student in every phase of the program.

Admission

Applicants for admission are expected to meet the general requirements for admission to graduate study as established by the School of Graduate Studies. Applicants should have completed a calculus sequence that includes multivariable calculus and a course in linear or matrix algebra. Some experience in computer programming and enough background in probability and statistics to begin basic graduate courses in statistics is also required. This normally means one or two prior courses in probability and statistics, depending on content and level. Applicants with insufficient preparation may be admitted on the condition that they complete certain prerequisite work to be specified by the department at the time of admission. Because of course sequencing, it is best to enter the program at the beginning of fall quarter.

Degree Requirements

The Master of Science degree in applied statistics may be earned by satisfying the degree requirements described below. The applied statistics program allows students considerable latitude in designing a course of study. This program is primarily intended to prepare students for professional employment in business, industry, or government; however, it can also form a solid foundation for doctoral study.

All master's degree candidates are required to pass a comprehensive written examination which must be taken at least one quarter before the expected date of graduation. The examination is ordinarily offered during fall quarter.

In addition to the requirements of the School of Graduate Studies, the following

departmental requirements must be met to earn a degree in applied statistics. Full-time students normally take two years to complete this program.

Faculty

Professors

Harry J. Khamis (graduate advisor), categorical data analysis, survival analysis
Makarand V. Ratnaparkhi, mathematical statistics, biostatistics
Munsup Seoh (program director), nonparametric statistics and computational statistics
Thaddeus Tarpey, multivariate statistics, mathematical statistics
Daniel T. Voss (CoSM Assoc. Dean), design and analysis of experiments
Weizhen Wang, testing hypotheses, biostatistics

Associate Professors

Kimberly Kinateder, stochastic processes and exit times

Assistant Professor

Shuxia Sun, resampling methods, time series

Financial Assistance

The department awards a limited number of graduate teaching assistantships annually to qualified applicants. Assistantships may be renewed for a second year; assistants can complete the requirements for a degree in two years. An assistant's duties include classroom teaching, which is a meaningful aspect of the education of graduate students in the mathematical sciences. Other assistantships are sometimes available through research grants and contracts.

Course of Study

Required Courses	**27**
STT 661, 662 Theory of Statistics I and II*	
STT 666, 667 Statistical Methods I and II*	
STT 669 Introduction to Experimental Design*	
STT 761 Theory of Linear Models	
STT 791 Statistical Consulting	
Elective Courses†	**18**
STT 601 Nonparametric Methods	
STT 611 Applied Time Series	
STT 624 Statistical Control Methods	
STT 626 Survival Analysis	
STT 664 Computational Statistics	
MTH 606 Mathematical Modelling	
MTH 607 Optimization Techniques	
MTH 631-633 Real Variables I-III	
CS 670 Systems Simulation	
STT 702 Applied Stochastic Processes	
STT 714 Statistical Modeling for Environmental Data	
STT 721 Sampling Design	
STT 740 Categorical Data Analysis	

STT 744 Applied Multivariate Analysis	
STT 762 Topics in Linear Models	
STT 764 Topics in Experimental Design	
STT 767 Applied Regression Analysis	
Total	**45**

Note: With the prior approval of the statistics advisor, other appropriate courses, including courses from outside the department, may be used as electives. Credit will be allowed for STT 686 or STT 786, Independent Reading in Statistics and Probability, and STT 696 or STT 796, Topics in Probability and Statistics, only if approved in advance.

*Students who have taken STT 661, 662, 666, 667, or 669 or equivalent prior to entering the program will be required to take additional elective hours in lieu of the courses taken.

†From the 18 hours of elective courses, at least 12 hours must be chosen from among the 700-level electives.

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Women's Studies

Introduction

The Women's Studies Program offers a 20-credit graduate certificate in Women's Studies that can be pursued in the contexts of the Master of Humanities and the Master of Arts in English Programs, as a complement to any graduate or professional degree program, or by nondegree graduate students. As an interdisciplinary program of women's studies–designated undergraduate and graduate courses across much of the curriculum —Women's Studies enables students to develop a specialty or subspecialty in gender analysis. For a list of approved courses and more information on the Women's Studies Program, visit the Women's Studies Web site: http://www.cola.wright.edu /wms/wmsprgms.htm/. See also Humanities, English Language and Literatures, and Selected Graduate Studies.

Admission

Admission requirements are a baccalaureate degree in any field with a 3.0 average, or a graduate degree in any field, or enrollment in any graduate degree program at Wright State University. Nondegree students must be admitted to the School of Graduate Studies with nondegree status. Students wishing to pursue the Women's Studies graduate certificate must fill out a certificate application with the Director of Women's Studies.

Course of Study

Certificate Requirements

Core Course	4
WMS 650 Feminist Thought or ENG 720 Women's Studies Through Literature or an approved equivalent feminist theory course	
Electives	16

Four electives are chosen from the list of graduate courses approved for Women's Studies, including one of the courses designated as international or cross-cultural. Students pursuing the Master of Arts in English or the Master of Humanities can substitute one elective from approved Women's Studies courses with four credit hours of ENG 799 or HUM 730 provided the focus of these are Women's Studies oriented.

Other Requirements

1. No more than three courses in the same discipline can be counted toward the certificate.
2. No more than two 500-level courses can count toward the certificate.
3. A minimum grade of "B" is required for each course counted toward the certificate.

Total	**20**

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