



College of Graduate Studies

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Graduate Catalog 2004-2006

Addenda

Changes since the catalog was released...

This page lists academic material which would normally be put in the catalog, but which has been added or changed after the most recent printing of the catalog (Fall of 2004).

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 - Administration
 - ADM 675 Public Relations and Public School Administration
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 - BIO 684/884 Research Seminar
 - Business Law
 - BLW 511 Business Law and Ethics
 - Civil Engineering
 - CVE 601 Civil Engineering Graduate Seminar
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 - CVE 701 Civil Engineering Graduate Seminar
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 - ESL 502 ESL Graduate Writing Course
 - Executive MBA
 - EBA 600 The Manager's Workshop
 - EBA 604 Economic Perspectives in Management
 - EBA 605 Ethical Perspectives in Business
 - EBA 606 Accounting for Managers
 - EBA 607 Organization & Leadership
 - EBA 608 Strategic Human resources Management and Labor Relations
 - EBA 609 Marketing Strategy
 - EBA 610 Finance for Managers
 - EBA 611 Management Information Systems
 - EBA 612 Supply Chain Management
 - EBA 613 International Business Strategy
 - EBA 614 International Study Tour
 - EBA 615 Business Strategy
 - EBA 616 Applied Integrative Seminar
 - Economics
 - ECN 675 Labor Economics
 - Electrical and Computer Engineering
 - EEC 584 Computer Networks
 - EEC 587 Rapid Digital System Prototyping
 - EEC 621/EEC 721 Internet Software Systems
 - EEC 624 Software Testing
 - EEC 625 Software Design and Architecture
 - EEC 670/EEC 770 Power Systems Operation
 - EEC 671/EEC 771 Power Systems Control

- Specialized Study and Field Experiences
 - EST 503 Student Teaching in Special Ed: Multi Handicapped
 - EST 583 Practicum in Secondary Education Mathematics
 - EST 584 Practicum in Secondary Education Social Studies
 - EST 585 Practicum in Secondary Education Science
 - EST 589 Student Teaching in Secondary Education English
 - EST 590 Student Teaching in Secondary Education Mathematics
 - EST 591 Student Teaching in Secondary Education Social Studies
 - EST 592 Student Teaching in Secondary Education Science
 - EST 595 Seminar on Integrating Theory and Practice
 - EST 602 Student Teaching in Special Education: Learning Disabilities
- Environmental Science
 - EVS 581 OhioView Prerequisite Remote Sensing
 - EVS 582 OhioView Introductory Remote Sensing
 - EVS 585 OhioView Advanced Remote Sensing
 - EVS 588 OhioView Research in Remote Sensing
- French
 - FRN 592 Special Topics: Study Abroad
- German
 - GER 592 Special Topics: Study Abroad
- Health Sciences
 - HSC 567 Practicum in Gerontology
 - HSC 590 Physical Therapy Organization, Administration & Management I
 - HSC 593 Physical Therapy Organization, Administration, & Management II
- History
 - HIS 515 19th Century America: Industrial Capitalism and its Dissenters
 - HIS 587 Modern Middle East
- Information Systems
 - IST 614/714 Project Management and Scheduling
 - IST 634/734 Enterprise Databases
 - IST 635/735 Business Value of Information Technology
 - IST 636/736 Managing Networks and Security Risks
 - IST 660/760 Business Analytics and Data Mining
 - IST 664/764 Business Geographics and GIS
 - IST 665/765 Enterprise Resource Planning
 - IST 800 Research Design and Measurements
 - IST 801 Foundations of IS
 - IST 802 Seminar in IS Current Topics
 - IST 803 Knowledge Management
 - IST 891 Doctoral Research in Information Systems
 - IST 895 Dissertation Research Seminar
 - IST 896 Current Problems in Information Systems
 - IST 899 Dissertation
- Mechanical Engineering
 - MCE 603 Interfacing and Control of Mechatronic Systems
- Modern Languages
 - MLA 592 Special Topics: Study Abroad
- Operations Management and Business Statistics
 - OMS 525 International Operations Management
- Physics
 - PHY 500 Conceptual Physics for Middle School Teachers
 - PHY 596 Laboratory Training in Radiation Therapy Physics I
 - PHY 597 Laboratory Training in Radiation Therapy Physics II
 - PSY 595 Professional Seminar
- Political Science
 - PSC 605 Public Administration & Political Process
 - PSC 635 Public Sector Management
- Public Administration
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 - PAD 615 Economic Development and Budgetary Policy

- PAD 617 Public Administration & Political Process
- PAD 619 City Management
- PAD 628 Fundamental of Sponsored Research Administration
- PAD 635 Public Sector Management

• Updated Courses

- Accounting
 - ACT 600 Managerial Accounting
- Chemistry
 - CHM 502 Biochemistry
 - CHM 613/713 Advanced Electroanalytical Chemistry
 - CHM 614/714 Chromatography and Separation
 - CHM 625/725 Quantum Mechanics
 - CHM 640/740 Special Topics in Inorganic Chemistry
 - CHM 641/741 Inorganic Mechanisms and Structures
 - CHM 642/742 Theoretical Inorganic Chemistry
 - CHM 661/761 Macromolecular Structure and Dynamics
- Counseling
 - CNS 633 Women and Mental Health
- Electrical and Computer Engineering
 - EEC 623 Software Quality Assurance
 - EEC 681 Distributed Computing Systems
 - EEC 683 Computer Networks II
 - EEC 685 Modeling and Performance Evaluation of Computer Systems
 - EEC 687 Mobile Computing
 - EEC 781 Distributed Computing Systems
 - EEC 783 Computer Networks II
 - EEC 787 Mobile Computing
- English
 - ENG 503 Intermediate English as a Second Language Speaking Skills
 - ENG 504 Communication Skills for International Teaching Assistants
- English as a Second Language
 - ESL 503 Intermediate English as a Second Language Speaking Skills
 - ESL 504 Communication Skills for International Teaching Assistants
- Specialized Study and Field Experience
 - EST 582 Student Teaching in Secondary Education
- Health Sciences
 - HSC 560 Interdisciplinary Team Development
- Industrial and Manufacturing Engineering
 - IME 698 Master's Thesis Research
 - IME 699 Master's Thesis
- Master of Business Administration
 - MBA 660 Integrative Business Strategy
- Mechanical Engineering
 - MCE 503 System Modeling
- Engineering Mechanics
 - MME 504 Continuum Mechanics
 - MME 550 Advanced Dynamics
- Nursing
 - NUR 530 Health Assessment of the School Aged Child and the Child with Special Needs
 - NUR 532 Health Assessment of the School-aged Child and the Child with Special Needs Laboratory
- Operations Management and Business Statistics
 - OMS 517 Principles of Lean Operations

• Deleted Courses

- Communication
 - COM 590 Internship in Communication
- Electrical and Computer Engineering
 - EEC 586 Advanced Digital Systems Laboratory
 - EEC 682 Computer Networks I

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(September 27, 2004) (July 15, 2005)

Admissions to College of Graduate Studies

• International Students Language

Current Policy

Language: The University requires all non-native English speakers to demonstrate proof of English-language proficiency. Any individual who has earned a bachelor's or higher degree from a U.S. institution where the primary language of instruction was English is not required to take an English language proficiency examination. The options and minimum score requirements are as follows:

1. TOEFL (Test of English as a Foreign Language) score of 525 (197 for the computer-based TOEFL); Please note that the Educational Testing Service (ETS) will not provide test takers or third parties (including Cleveland State University) with TOEFL reports for test scores that are over two years old. If required, the TOEFL must be taken again if the applicant's most recent scores are over two years old OR
2. Pass the IELTS test (International English Language Testing System) with a minimum score of 6.0; OR
3. Pass the MELAB (Michigan English Language Assessment Battery) with a minimum score of 85; OR
4. Achieve a score of C (Pass) or better on the A and O levels of the General Certificate of Education (GCE or GCSE) Test; OR
5. Achieve a score of C (Pass) or better on the Cambridge Certificate of Advanced English (CAE); OR
6. Completion of English language studies (Level 112) from any of the ELS Language Centers; OR
7. Completion of course work at a "C" or better level for the equivalent of the CSU freshman English requirements at a U.S. regionally accredited college or university.

Additional Catalog Language (approved September 27, 2004)

8. A Program Certificate of Completion from Cleveland State University's Intensive English Language Program as evidence of successful completion of the Advanced level with a grade of B or better and COMPASS ESL score of 80 or higher.

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(October 18, 2004)

Academic Regulations

• Elimination of the "NA" and "X" Grades and Modification of "I" Grade

Revised Graduate Policy (effective Spring 2005)

Grades

I Incomplete. A non-credit grade indicating course work has not been completed. An I grade must be removed within a maximum of one semester (by the last day of instruction of the second semester) of the term received or it converts to a grade of F, whether or not the student enrolls. An instructor may require course work to be completed earlier. Incomplete deadline dates are noted in the Course Schedule. *An I grade can be assigned by the instructor when the following conditions are met:*

1. *The student has the potential to pass the course;*
2. *The student has not completed all requirements for reasons deemed justified by the instructor.*

It is highly recommended that a contract be developed delineating when and what must be completed to resolve the I grade.

NA No Action. A neutral grade that does not factor into the calculation of the student's grade-point average or hours attempted. To be used only when a regular letter grade, an I, or an X grade is not appropriate.

X A grade assigned by an instructor when a student has not completed all assignments for reasons that cannot be determined. If a grade change is not submitted by the end of the following semester, the X becomes an F.

(Approved by Faculty Senate February 9, 2005)

- **Grades**

U Unsatisfactory performance by a graduate student in selected remedial undergraduate Mathematics courses. Grades of U do not influence a graduate student's grade-point average, nor are U grades considered in the University's academic warning and dismissal regulations for graduate students. See also the section on Remedial Courses below.

(Approved by Faculty Senate February 9, 2005)

- **Remedial Courses**

The remedial

~~Mathematics~~ courses listed below are graded on an S/U basis. Graduate students do not receive credit toward meeting degree requirements for these courses when passed with an S grade. ~~Grades of U do not influence a graduate student's grade-point average, nor are U grades considered in the University's academic warning and dismissal regulations for graduate students.~~

MTH 087

MTH 088

See the most recent issue of the Undergraduate *Catalog* for descriptions of these courses.

(Approved by Faculty Senate March 9, 2005)

- **University Graduate Degree Requirements**

1. A student has a period of six years from date of entry into the College of Graduate Studies to complete requirements for a master's degree. Only course work, including transfer credit and credit by examination, completed within the immediate past six-year period will apply toward the master's degree.

~~A student entering a doctoral program, either having received the master's or professional degree from another institution or having interrupted his or her studies at Cleveland State University upon receipt of the master's degree, must complete doctoral degree requirements within six calendar years from the date of entry into doctoral studies. Petitions to extend the time period to complete a graduate master's degree must receive the approval of the departmental/program graduate committee. If approved by the departmental/program graduate committee, Petitions to extend the time period to complete a graduate master's degree up to ten years do not require review and approval by the College of Graduate Studies Petitions Committee.~~

However, if a petition for an extension to up to 10 years is denied at the departmental level, the student may appeal the denial requests for an extension of the time period to complete a graduate degree may be submitted to the College of Graduate Studies Petitions Committee for review and disposition. A petition to extend a master's degree period beyond 10-years must be submitted to the College of Graduate Studies Petitions Committee for review and disposition. Such petitions must show compelling reasons for the extension and if granted, may include a requirement that coursework that is older than six (6) years be repeated.

2. A student entering a doctoral program, either having received the master's or professional degree from another institution or having interrupted his or her studies at Cleveland State University upon receipt of the Master's degree for more than one year, must complete doctoral degree requirements within ten calendar years from the date of entry into doctoral studies. Petitions to extend the 10-year period to complete a doctoral degree must receive the approval of the departmental/program graduate committee and must be submitted to the College of Graduate Studies Petitions Committee for review and disposition. Such petitions must show compelling reasons for the extension and if granted may include a requirement that coursework that is older than ten (10) years be repeated.

23. A student who enrolls consecutively in a master's and then doctoral programs without interruption of at least one academic year following receipt of the master's degree must complete doctoral requirements within 10 calendar years from the date of admission to the master's-doctoral program. Petitions to extend the 10-year period to complete a doctoral degree must receive the approval of the departmental/program graduate committee. Such petitions do not require review and approval by and must be submitted to the College of Graduate Studies Petitions Committee for review and disposition. Such petitions must show compelling reasons for the extension and if granted, may include a requirement that coursework that is older than ten (10) years be repeated..

34. A student who is a candidate for a master's degree must fulfill the College of Graduate Studies's residence requirement of having earned at least 16 credit hours of acceptable graduate credit (with course grades of B or better) while enrolled in the College of Graduate Studies at Cleveland State University University.

45. Of the minimum 30 credit hours required for graduation with a master's degree, only eight credit hours of 400-level courses can be used to meet graduation requirements. The 400-level courses may not be offered by the department or program in which the master's degree would be awarded. No 100- to 300-level courses may be applied toward a graduate degree. The remainder of the course requirements must be graduate-level (500-to-800-level) courses.

56. Subject to departmental approval, nine graduate credit hours of transfer credit may be applied toward the requirements of a master's degree, and no more than one-third of the total graduate hours required for the doctoral degree may be transfer credit for doctoral students. (See Transfer Credit and Credit by Examination policies earlier in this section of the *Catalog*.) Petitions to extend transfer credits should be submitted to the departmental/program graduate committee. If approved by the departmental/program graduate committee, such requests do not require review and approval by the College of Graduate Studies Petitions Committee. However, petitions for acceptance of more than nine hours of transfer credit which are not approved at the departmental/program level may be submitted to the College of Graduate Studies Petitions Committee for review and disposition.

Not more than one-half of a student's total graduate degree program may be a combination of transfer credit and credit by examination.

67. Achievement of at least a 3.00 cumulative grade-point average for all courses taken as a graduate student, including 400-level undergraduate courses, is required for graduation. All grade-point averages are carried to two decimal places unrounded. The University Graduate Council has determined that the minimum 3.00 grade-point average required for graduation cannot be waived via petition.

78. A maximum of six credit hours of 500- to 800-level work graded on an S (satisfactory) basis may be used to meet degree requirements. Excluded from this requirement are courses that are graded only on an S/FS/U basis.

89. A maximum of eight credit hours of work at the C level for 400-level and above courses may apply toward graduate degree requirements.

910. A student must be registered for at least one graduate credit during the semester of graduation; i.e., if the student plans to graduate at the end of the spring semester, he or she must enroll during the spring term.

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(November 22, 2004)

J.D./ M.S. in Environmental Science Program

The combined curriculum leading to the degrees of Juris Doctor and Master of Science in Environmental Science is designed to permit the student to complete both degrees within four years instead of the five years that would normally be required to complete the two degrees separately.

Entry into the Dual Degree Program can occur in one of two ways. Applicants who are not currently enrolled in either the J.D. or the M.S. in Environmental Science degree program must apply for admission to both the College of Graduate Studies and the College of Law concurrently and follow the normal procedures of the respective colleges. Application for admission must be specifically for the Dual Degree Program. Students who enroll in this manner usually should plan to spend their first year taking courses exclusively in the J.D. program and their second year taking courses mainly in the M.S. in Environmental Studies program. In the third and fourth years students take courses in both degree programs. Applicants who are currently enrolled in either the J. D. or the M.S. in Environmental Science degree program must apply for admission to the other degree program prior to the completion of 60 credit hours, or of two years of full-time study in the J.D. program, or prior to the completion of 18 credit hours or one year of full-time study in the College of Science. Students who enroll in this manner are advised as to how to schedule the remainder of their courses in the Dual Degree Program. Under no circumstances will a student be allowed to take more than eight years to complete the combined programs.

The Dual Degree Program normally requires a total of four academic years of full-time study. The Juris Doctor requirements are fulfilled by the completion of 80 credit hours of work in the College of Law, including all required courses and 10 semester credit hours from courses cross-listed with the College of Science (Thesis Course), 2-3 credits from a Technical Writing Course (ENG 509 in the College of Liberal Arts and Social Sciences), and one additional course taken in the College of Science. The Master of Science in Environmental Science requirements are fulfilled by the

completion of the following: a) 24 credit hours of course work, including all required courses, concentration electives and field experience from courses in the College of Science, any required interdisciplinary core competency courses (2-3 credits of Technical Writing, e.g. ENG 509, and 3 credits from a course in Environmental Technology taken in the College of Engineering), and 3 credits from a course in Environmental Law taken in the College of Law, and b) 8 semester credit hours for a Thesis project (EVS/BIO 691/695). The minimum total number of credits required for the MSES degree is 32. In order to ensure that the degree requirements of both programs are fully maintained, while at the same time permitting the saving of a full academic year, students who pursue the Dual Degree Program are not permitted to take courses outside either the College of Law or the Master of Science in Environmental Science program for credit toward either degree. A student is allowed to receive credit toward the dual degrees for an elective course taken outside the Colleges' academic programs with prior written approval of the Directors of the MSES, and JD/MSES Programs.

Submit College of Graduate Studies application materials to the Graduate Admissions Office. Contact the College of Law regarding law application procedures.

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(November 24, 2004)

Master of Accountancy

- Level II: Accounting and Basic Business Knowledge
- Level III Courses - Professional Preparation

Level II: Accounting and Basic Business Knowledge

(32 credits)

Courses in Level II provide knowledge of the basic business disciplines to prepare students for the upper-level graduate courses. These courses are waivable on the basis of recent undergraduate business course work.

ACT 501 Financial Accounting (3-0-3)

ACT 600 Managerial Accounting (2-0-2)

ACT 611 Financial Accounting: Resources (3-0-3)

ACT 612 Financial Accounting: Equities (3-0-3)

ECN 503 Economic Concepts (3-0-3)

FIN 501 Financial Management (3-0-3)

GAD 515 Communications for Managers (3-0-3)

MBA 500 Environment of Business (3-0-3)

MLR 501 Management and Organizational Behavior (3-0-3)

MKT 501 Marketing Theory and Practice (3-0-3)

OMS 511 Operations Management (3-0-3)

BLW 511 Business Law and Ethics I (3-0-3)

Level III Courses—Professional Preparation

(33 credits)

Level III course work prepares the student for successful entry into the profession. Students may choose between two programs—Financial Accounting/Audit and Tax

Financial Accounting/Audit Program Requirements

A. Accounting(18 credit hours)

~~ACT 621 Federal Income Taxation (3-0-3)** or ACT 636 Federal Income Taxation of Corporations and Shareholders (3-0-3)~~

ACT 622 Attest Function (3-0-3)*

ACT 631 Selected Topics in Accounting (3-0-3)*

ACT 639 Accounting Policy (3-0-3)

Two ACT electives (six credits)

B. Information Systems(15 credit hours)

ACT 553 Information Systems Auditing (3-0-3)*

ACT 688 Accounting Systems (3-0-3)*

Two IST/CIS electives (six credits)

Business elective (three credits)

Tax Program Requirements

A. Taxation(12 credit hours)

ACT 621 Federal Income Taxation (3-0-3)**

ACT 636 Federal Income Taxation of Corporations and Shareholders (3-0-3)

ACT 637 Taxation of Partnerships (3-0-3)

ACT 638 Tax Research and Planning (3-0-3)

B. Taxation, Accounting, and Business Electives(21 credit hours)

Three ACT electives (Tax) (nine credits)

ACT elective (Accounting or Tax) (three credits)

Three accounting or business electives (nine credits)

*With successful completion of an equivalent course, this course will be waived and an additional ACT or IST course at the same level will be required.

**With successful completion of an equivalent course, this course will be waived and an additional tax course at the same level will be required.

(May 01, 2005)

Accreditation

The graduate programs of the James J. Nance College of Business Administration are accredited by AACSB International. In addition to the business accreditation, the curricula of the Accounting Department have accounting accreditation from the AACSB. The accounting programs at Cleveland State were the first in the State of Ohio to receive this accreditation.

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(January 06, 2005)

Cleveland State University

- Accreditation

Nursing: The Nursing Department curriculum is fully accredited by the National League for Nursing Accreditation Commission (NLN-AC). The graduate program in nursing is accredited by CCNE, the Commission on Collegiate Nursing Education.

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(March 15, 2005)

Master of Arts in History

- Special Requirements for Plan B

1. A minimum of 16 20 credit hours in 600-level courses, which must include:
a. HIS 601 Introduction to Graduate Study in History

and

HIS 695 Research Seminar in American, European, or Social History.

b. A minimum of ~~two~~ three reading seminars (~~eight~~ twelve credits).

2. The remaining ~~46~~ 12 credit hours may be taken at the 500 level, including Art History courses.

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(March 15, 2005)

Admissions to College of Graduate Studies

- Graduate Admission Application Deadline (Effective 2006/2007 Academic Year)

Occupational Therapy (MOT)

~~March 15~~ May 15

For-summer Students admitted
fall semester only, admission

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(March 15, 2005)

Master of Occupational Therapy (Effective 2006/2007 Academic Year)

Admission Information

Admission to the program is limited to 30 students. A rolling admissions process begins August 1 until ~~March~~ May 15. Candidates who meet all admission requirements are accepted on a first-come, first-served basis.

Procedures for Application

1. Submit a completed M.O.T. program application (available from the Health Sciences Department and on-line).

Program of Study

The Master of Occupational Therapy curriculum consists of 79 to 81 credits, including 51 credits in the core area, 22 credits of fieldwork, and six to eight credits of electives. A capstone research project is required as part of the core curriculum. The two-year program begins summer fall semester. A part-time option is available for students who wish to complete the program in three or four years.

The courses are offered in the following sequence:

Summer Fall Year I

HSC 506 Medical Conditions and Occupational Function

HSC 516 Occupational Therapy Foundations

~~HSC 518 Occupational Development~~

~~HSC 528 Psychosocial Evaluation and Intervention~~

~~HSC 589 Occupational Therapy~~

Research I

Fall Spring Year I

HSC 517 Occupational Therapy Theory and Process

~~HSC 518 Occupational Development~~

HSC 527 Neuromusculoskeletal Evaluation and Intervention

~~HSC 529 Sensory and Cognitive Evaluation and Intervention~~

~~HSC 589 Occupational Therapy Research I~~

~~HSC 528 Psychosocial Evaluation and Intervention~~

Spring Summer Year I

~~HSC 560 Interdisciplinary Team Development, or elective~~

~~HSC 569 Occupational Environments~~

~~HSC 579 Occupational Therapy Administration and Management~~

~~Elective~~

~~HSC 529 Sensory and Cognitive Evaluation and Intervention~~

~~HSC 535 Occupation and Participation I~~

~~HSC 536 Occupation and Participation II~~

Summer Fall Year II

~~HSC 535 Occupation and Participation I~~

~~HSC 536 Occupation and Participation II~~

~~HSC 537 Occupation and Participation III~~

HSC 558 Occupational Therapy Practicum I

~~Elective~~

~~HSC 560 Interdisciplinary Team Development, or elective~~

~~HSC 569 Occupational Environments~~

Fall Spring Year II

~~HSC 537 Occupation and Participation III~~

HSC 559 Occupational Therapy Practicum II

~~HSC 579 Occupational Therapy Administration and Management~~

HSC 591 Occupational Therapy Research II

Research II

Spring Summer Year II

HSC 595 Level II Fieldwork I

Fall Year III

HSC 596 Level II Fieldwork II

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(May 01, 2005)

Master of Business Administration

- **Accreditation**

The graduate business programs of the James J. Nance College of Business Administration are accredited by AACSB International, the Association to Advance Collegiate Schools of Business. In addition to the business accreditation, the curricula of the Accounting Department have accounting accreditation from the AACSB. The accounting programs at Cleveland State were the first in the State of Ohio to receive this accreditation. The Health Care Administration specialization is accredited by the Accrediting Commission on Education for Health Services Administration (ACEHSA).

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(June 30, 2005)

Doctor of Business Administration

"The Management and Labor Relations Department and the Accounting Department are currently not admitting students for the DBA program."

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(July 01, 2005)

Expenses and Financial Aid

A Revised policy for Payment Methods has been implemented starting July 1, 2005. Please refer to the Office of Treasury Service's web site (www.csuohio.edu/bursar/) for the updated information regarding fees, payment methods for checks and credit cards, and refunds.

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(July 01, 2005)

Master of Science in Urban Studies

- **Core Courses**

Please refer to <http://urban.csuohio.edu/academics/graduate/msusrequirements.pdf> for the updated information.

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(July 15, 2005)

Master of Physical Therapy

- **M.P.T. Curriculum – Table of Courses**

Spring Year I

HSC 538 Life Span Development

HSC 542 Functional Anatomy for Physical Therapists

HSC 550 Physical Therapy Theory and Practice I
HSC 562 Physical Therapy Interactions I
HSC 592 Physical Therapy Scientific Inquiry
Summer Year I
HSC 552 Physical Therapy Theory and Practice II
HSC 560 Interdisciplinary Team Development
HSC 564 Physical Therapy Interactions II
HSC 566 Physical Therapy Interactions III
HSC 580 Physical Therapy Clinical Seminar I
HSC 583 Physical Therapy Professional Issues in Clinical Education I
HSC 590 Physical Therapy Organization, Administration, and Management I
Fall Year I
HSC 554 Physical Therapy Theory and Practice III
HSC 572 Physical Therapy Management of Complex Conditions I
HSC 574 Physical Therapy Management of Complex Conditions II
HSC 582 Physical Therapy Clinical Seminar II
HSC 585 Physical Therapy Professional Issues in Clinical Education II
HSC 598 Special Topics in Physical Therapy Research – Master’s Capstone Project
Spring Year II
HSC 586 Applied Physical Therapy I
Summer Year II
HSC 556 Physical Therapy Theory and Practice IV
HSC 576 Physical Therapy Management of Complex Conditions III
HSC 584 Physical Therapy Clinical Seminar III
HSC 587 Physical Therapy Professional Issues in Clinical Education III
HSC 590 ~~Physical Therapy Organization, Administration, and Management~~
HSC 593 Organization, Administration & Management II
HSC 598 Special Topics in Physical Therapy Research – Master’s Capstone Project
Fall Year II
HSC 588 Applied Physical Therapy II – Capstone Clinical Education Experience
HSC 598 Special Topics in Physical Therapy Research – Master’s Capstone Project

Note: Students must complete two elective courses during the M.P.T. program

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(July 15, 2005)

Education Specialist

- ~~Pupil Services Administration~~ Prerequisites: A master’s degree in the area of ~~School Administration or Special School Services~~, such as school audiologist, school counselor, school social worker, speech-language pathologist, ~~or~~ school psychologist
ADM 614 Administration Principles and Practice (four credits)
ADM 618 Staff Personnel Administration (two credits)
ADM 615 Instructional Leadership and Pupil Personnel Administration (four credits)
ADM 643 School Finance and Economics (four credits)
ADM 676 Clinical Supervision and Professional Development (four credits)
ADM 677 Legal and Policy Issues in Education (four credits) or ADM 674 Special Education Law (four credits)
ADM 811 The School Superintendency
ADM 680 Supervision Practicum (two semesters, two credits per semester)

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(July 15, 2005)

Masters of Education

- **Counselor Education Program**

Exit Requirements

A culminating activity is required of all students. Most students ~~Students may choose to take the Comprehensive Examination. It is normally completed during the last semester in which the student is taking course work. Comprehensives are scheduled for the College once each academic semester, usually on the fourth or fifth weekend. Other options include a thesis or project. Details of these options are outlined in the department handbook. Students who fail the comprehensive exam may retake it one time.~~ choose to meet this requirement by providing evidence that they have taken and passed the Professional Counselor Licensure Examination (PCLE) during their last year in the program. Other options for meeting the exit requirement include successful completion of a comprehensive exam, thesis, or project - details of which can be obtained from the Department of Counseling, Administration, Supervision, and Adult Learning and Development (RT 1419, 216-687-4612). Students who elect to meet the exit requirement by taking a comprehensive exam and fail it may retake the exam one time and have one year in which to do so.

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(July 15, 2005)

Masters of Education

- **School Nurse Licensure Program**

The Department of Health, Physical Education, Recreation, and Dance (HPERD) offers courses leading to Ohio licensure for school nurses (web site: www.csuohio.edu/healthed). The student shall be recommended for the licensure provided that he or she: 1) holds a current license to practice as a Registered Nurse (RN) in the State of Ohio, 2) has obtained a bachelor's degree from an approved college or university, and 3) has completed course work preparation for this licensure that conforms to the requirements listed.

Students should apply for graduate admission as a licensure student to register for courses. Upon completion of these courses, students must apply for licensure through the Education Student Services Center of the College of Education and Human Services [Rhodes Tower 1401, telephone (216) 687-4625]. An overall grade-point average of 2.50 must be maintained throughout the program.

Course requirements are based on the National School Nurse Roles and Standards. Course work (~~26 to 28~~ 24 to 27 credits minimum) must be distributed in the following areas:

Comprehensive School Health Program

HED 560 Foundations of a Coordinated School Health Program (four credits)

NUR 550 Legal Issues in School Nursing (two or three credits)*

Comprehensive School Health Education Delivery

HED 561 Methods and Materials for Health Education (three credits) (Prerequisite: HED 551 or HED 560, or equivalent)

Children with Special Needs and School Assessment

NUR 530 Health Assessment Strategies of the School-Aged Child: ~~Strategies for Nursing Practice (two credits)*~~ and Child with Special Needs (three credits)

NUR 532 Health Assessment of the School-Aged Child: ~~Strategies for Nursing Practice Laboratory (one credit)*~~ and Child with Special Needs Laboratory (two credits)

Community Health Collaboration

HED 551 Organization and Administration of Community Health Programs (four credits)

Research

NUR 360 Nursing Research (two credits)

Elective (two credits) Based on individual needs following transcript review.

Practicum for School Nurses

HPR 679, HPR 680, or HPR 681 Practicum (two, three, or four credits, respectively). Clinical and field-based experiences, including a practicum for at least 10 weeks, to ensure proficiency in performing the duties of a school nurse. School nurses with two years of full-time experience can complete two credits; all others must complete three or four credits. At least two-thirds of the course work must be completed. Includes a seminar and the development of a professional portfolio.

* See the M.S. in Nursing section of this Catalog for information.

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(July 15, 2005)

Masters of Education

- Gifted and Talented Learners

(33 credits)

Purpose

The program is designed for previously Ohio certified or licensed teachers seeking licensure as intervention specialists who teach gifted and talented learners, who wish to obtain K-12 endorsement as a Gifted Intervention Specialist. The multi-dimensional program provides training in meeting the needs of a broad range of gifted learners, including culturally diverse children, females, disabled youngsters, those with special talents, and underachievers. The program provides opportunities for individuals with an interest in this expanding field to refine and develop professional knowledge and skills.

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(July 29, 2005)

Master of Business Administration

- Executive MBA Program

Cleveland State University's Executive MBA program provides a unique learning opportunity for highly-motivated business executives, managers, and professionals to earn an MBA degree in 19 months without interrupting their careers.

The curriculum features strategic decision making and integrative management skills, an international business study experience, and balanced coverage of the major business disciplines. Special emphasis is placed on small study groups, giving participants the opportunity to benefit from each other's professional experiences and insights.

The opening week of the Executive MBA program begins with the "Manager's Workshop", a week-long residential orientation, study, and team-building experience. Classes during the remainder of the program meet on Saturdays and occasional Fridays.

Admission Requirements

Candidates for admission will be evaluated on the following criteria:

- A nomination letter from a person who can comment meaningfully on the candidate's performance in a professional setting, preferably from a current or former supervisor.
- Candidates must have a minimum of five years of significant professional or managerial experience as evidenced by a recent resume that includes both professional background and work experience.
- Educational experience equivalent to at least a bachelor's degree from an accredited college or university.

- Evidence demonstrating the applicant's preparation for graduate study by fulfilling one of the following criteria:
 - Candidate possesses a graduate degree--no GMAT required.
 - Candidate completed an undergraduate degree with an overall GPA of at least a 2.8 out of a 4.0--no GMAT required.
 - Candidate, whose highest degree is a bachelor's degree and has an overall GPA below a 2.8 out of 4.0, will be required to take the GMAT and achieve a score of at least 950 total points using the following formula:

$$\underline{200 \times \text{Undergraduate GPA} + \text{GMAT} = 950 \text{ or higher}}$$

- Minimum GMAT scores at the 20th percentile on the verbal component and 25th percentile on the quantitative is required to avoid additional course work.
- Each candidate will be interviewed by the admissions committee in order to determine the individual's ability to pursue graduate study in business.

For information about the Executive MBA program, call the E.M.B.A. office at 216-687-6925 or visit the Graduate Business Programs web site at: www.csuohio.edu/cba/academic/graduate/mba.html.

The Executive M.B.A. Program is intended for individuals currently employed in positions of responsibility. The program covers fundamental as well as advanced concepts, theories, and practices in business administration with an emphasis on critical analysis and strategic decision-making skills. To qualify for admission to the E.M.B.A. program, the applicant must have a minimum of five years of professional experience and earn at least 950 points based on the formula: 200 times the overall undergraduate grade point average plus the GMAT score. A new group starts each August with an off-campus orientation and residency week. Classes meet on a three-Saturday, one-Friday cycle during the academic year. The program includes an international study tour, special-topic seminars and workshops, and group projects. For more information, visit the E.M.B.A. web site at [//www.csuohio.edu/cba/academic/graduate/executive.html](http://www.csuohio.edu/cba/academic/graduate/executive.html) or call the E.M.B.A. Program office at (216) 687-6925.

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(July 29, 2005)

Master of Labor Relations and Human Resources

• Required Core Courses

Required Core Courses(25 21 credits)

The following are required for all M.L.R.H.R. students:

MLR 522 Labor Law

MLR 531 Employment Practices Law

MLR 601 Human Resources Management and Labor Relations

MLR 602 Advanced Wage and Employment Theory

MLR 640 Performance Appraisal, Compensation, and Benefits

MLR 641 Employment Planning, Personnel Selection, and Training

MLR 645 Information Systems in Human Resource Management

MLR 651 Collective Bargaining

Elective Courses(nine 12/13 credits)

Students select an additional nine credit hours to complete the requirements of the degree. Elective course selections must be made with the consent of the student's program advisor. Only one elective course may be at the 500 level.

Electives offered within the Department of Management and Labor Relations include the following:

MLR 504 Organizational Theory and Design

MLR 511 Labor History

MLR 521 Comparative Labor Systems

MLR 523 Labor Relations in Public Employment

MLR 555 Labor-Management Cooperative Practices

MLR 577 Managerial Skill Development

MLR 604 Interpersonal Relations and Group Dynamics

MLR 605 Organizational Development

MLR 607 Total Quality Management/Continuous Quality Improvement

MLR 645 Information Systems in Human Resource Management

MLR 690 Professional Internship

MLR 698 Independent Study

Electives offered outside of the department include such courses as:

PSY 518 Personnel Psychology

PSY 522 Organizational Psychology

PSY 523 Assessment Techniques

PSY 538 Intellectual Assessment and Practicum

SOC 588 Sociology of Work and Organization

PAD 630 Public Human Resources Management

CNS 623 Group Process and Practice

ADM 642 Collective Bargaining and Contract Management

ALD 645 Organizational Behavior and Change

LAW 629 Labor Law

LAW 633 Arbitration

LAW 696 Alternative Dispute Resolution

Other elective courses may be selected with the consent of the student's program advisor.

See the M.A. in Psychology, M.A. in Sociology, Master of Public Administration, and College of Education and Human Services Course Descriptions sections of this Catalog and the [Cleveland-Marshall College of Law Catalog](#) for course descriptions.

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(July 29, 2005)

Master of Science in Chemical Engineering

• Degree Requirements

The graduate program consists of a minimum of 30 credit hours of approved courses. These credits are distributed as follows:

1. Core courses (12 credits):

CHE 502 Advanced Thermodynamics (four credits)

CHE 506 Advanced Transport Phenomena (four credits)

and one of the following:

CHE 504 Advanced Reactor Design (four credits)

or

CHE 508 Advanced Separation Processes (four credits)

2. A minimum of nine credits of graduate elective courses, subject to advisor approval. One of these courses may be in a technical discipline outside of chemical engineering. This course also may be at the 400 level. No courses required in the undergraduate chemical engineering program may be applied for graduate credit.

3. All students are required to present a department seminar on their research. Preferably, this presentation must occur one semester prior to their thesis defense.

4. Students must select either a thesis option or a project option. The requirements for each of the options, in addition to those described above, are as follows:

a. Thesis option (nine credits)

The student plans and completes a research project, which may lead to publication in a peer-reviewed scientific journal, under the direction of a faculty advisor. The student must enroll in at least nine credits of CHE 699 (Master's Thesis). The student must complete a minimum of nine (9) credits of supervised research (CHE 699 or a combination of CHE 698 and CHE 699 credits). The student must enroll in at least six (6) credits of CHE 699 (Master's Thesis). This option is designed for the student who wants extensive research experience and a focus within a particular field.

b. Project option (nine credits)

The student completes a research project under the direction of a faculty advisor. The student must enroll in three credits of CHE 698 (Master's Project) and an additional six credits of chemical engineering graduate electives. This option is designed to provide the student with a broader education in chemical engineering, as well as to give some experience in research techniques.

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(August 26, 2005)

Degree, Certificate, and Graduate Licensure

Admission Classifications

• Conditional Graduate Student

The academic status of a graduate degree-seeking, certificate, or licensure applicant is determined after a review of admission credentials. Graduate Program Committees, in concurrence with the Office of Graduate Admissions, may recommend admission of applicants as Regular graduate students or as Conditional graduate students.

A Regular Graduate Student is one who has satisfied all requirements for admission to the College of Graduate Studies and to a departmental program, including submission of all documents (see the sections on Admission and Admission

Procedures in this Catalog), or one who has been previously admitted to the University as a Conditional or a Non-Degree graduate student and has submitted all required application materials, and is in good academic standing (GPA 3.00 or above) at the time of application to Regular degree-seeking, certificate, or licensure status.

A Conditional Graduate Student

There are three categories of Conditional Graduate Students.

First there is one who has failed to submit all necessary application materials, but who does meet the University's minimum grade-point and/or admission test score requirements. An official transcript showing receipt of a baccalaureate degree must be provided to qualify for Conditional admission. The student admitted conditionally is not permitted to register for classes until outstanding materials are received in the Graduate Admissions Office. Upon receipt of outstanding admission credentials, the graduate program concerned will consider the student for Regular graduate student status.

The second category includes international applicants who meet College of Graduate Studies and Program grade point and admission examination (GRE, GMAT, MAT, Etc.) requirements, but fall short of meeting College of Graduate Studies English Language proficiency requirements. These requirements, and normally expected test scores, are detailed under the Admission Requirements for International Students and Permanent Residents section of this catalog. For such applicants, the University ESL Coordinator will evaluate the student's English Language Skills, and where appropriate, prescribe and ESL program of study for a maximum of two semesters. Depending upon the English Language skill level of the applicant, in consultation with the involved Graduate Program Director, a program of ESL and academic course work will be determined. By the end of the student's second semester of study, all ESL requirements for Regular Admission must be met. Otherwise such students will not be allowed to continue their graduate studies.

The third category of Conditional degree-seeking students includes applicants who fail to meet all College of Graduate Studies and program requirements for Regular Admission (GPA, test score performance, etc.), but still show strong promise of being successful in their chosen graduate program. For this group of applicants a Conditional Admission may be proposed for a maximum of two semesters where the student will be given the opportunity to demonstrate that they can complete a graduate program. The involved Graduate Program Director must propose this type of Conditional Admission in writing to the Graduate Dean. The request must present a compelling case for why the applicant should be admitted and an academic game plan for the student to achieve Regular Admission Status. If these students meet the conditions of their Conditional Admission within the two terms, they will be changed to Regular Status. If they are not successful in meeting these conditions, they will be dismissed from the degree program.

Upon acceptance for graduate study on a Regular or Conditional basis, the graduate student should confer with the appropriate departmental advisor to plan an academic program of study. Subsequent changes to the plan of study should be made only with advisor approval.

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(August 26, 2005)

Admission to the College of Graduate Studies

- Admission Procedures for Graduate Degree Applicants

To complete admission procedures, graduate degree applicants must submit the

following:

1. Application: A completed application (paper or online application form), official transcripts, test scores, letters of recommendation, and any other supplemental materials must be submitted not less than six weeks prior to the term of desired entrance. Consult the admission requirements in individual program descriptions in this Catalog for further information.

To facilitate the admission process, it is strongly recommended that applicants use the online application system. (Click here to apply online now.) A paper application form may be downloaded from www.csuohio.edu/gradcollege/ and also is enclosed in the back of this Catalog. The processing time for paper application forms is longer than processing time for online applications. For a listing of programs with earlier application deadlines, consult the chart on page 29.

2. Official Transcripts: At the time of application, request that every college or university previously attended send one official transcript to the Office of Graduate Admissions (the Graduate Admissions Office will obtain official Cleveland State University transcripts). For graduate applicants who earned their undergraduate degree from Cleveland State University, and who received undergraduate transfer credit for work taken at another institution, the Graduate Admissions Office will secure the applicant's undergraduate transcripts from the Cleveland State University Registrar if the transfer credit was awarded since 2002. The Registrar cannot guarantee the availability of undergraduate transfer credit transcripts for the pre-2002 period. Graduate applicants who were granted Cleveland State University undergraduate transfer credit prior to 2002 need to request that all Colleges and Universities attended previously send official transcripts to the Office of Graduate Admissions. For applicants whose baccalaureate (or higher) degree is not yet awarded, a second official transcript with the degree posted also must be submitted to the Graduate Admissions Office before an admitted student will be permitted to register for classes. Transcripts must be received in the Graduate Admissions Office directly from the originating institutions.

3. Letters of Recommendation: Not required by all programs. Applicants should consult program descriptions. Where required, provide recommendation forms (download from www.csuohio.edu/gradcollege/forms.htm also enclosed in the back of this Catalog) to individuals who are recommending the student. Normally, at least one of the recommendations should be from a college professor familiar with the applicant's academic work.

Applicants to the Doctor of Business Administration (D.B.A.) program and the Master of Social Work (M.S.W.) program, and those pursuing initial licensure in Curriculum and Instruction—Urban Secondary Teaching must submit three letters of recommendation. Most other programs require two letters of recommendation.

The following master's degree programs do not require letters of recommendation:

- Accountancy (M.Acc.)
- Business Administration (M.B.A.)
- Computer and Information Science (M.C.I.S.)
- Education (M.Ed.) (except Counseling programs)
- Labor Relations and Human Resources (M.L.R.H.R.)
- Mathematics (M.A. and M.S.)
- Mechanical Engineering (M.S.)

4. Official Test Scores: Submit results of the appropriate admission examination as required by the College of Graduate Studies and/or the graduate degree program. Examination results over six years old at the time of application are not considered valid, and will not be accepted. Only official test scores received directly from the testing service will be accepted.

5. Applicants whose native language is other than English, and have received their undergraduate degree from an institution where English is not the language of instruction, are encouraged to take a standard English Language proficiency examination or arrange for an English Language assessment through the Cleveland State English as a Second Language Program. For these applicants a proficiency examination or assessment is encouraged, but it is not required. Proficiency examination options are detailed in the 2004-2006 Cleveland State University Graduate Catalog. The Cleveland State University ESL Coordinator can be reached at 216-875-9669.

5-6. Application Fee: Submit payment for the required, non-refundable \$30 Graduate Application Fee. The Master of Occupational Therapy and Master of Physical Therapy programs have a \$55 application fee. Admission decisions will not be rendered until the fee is paid.

No application fee is required of applicants who have paid an application fee earlier for admission as a graduate degree, certificate, licensure, or non-degree student.

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(October 11, 2005)

Graduate Certificate in Research Administration

The Faculty

Professors

Sylvester Murray, Department of Urban Studies

Samuel Richmond, Department of Philosophy

Mark Rosentraub, Levin College of Urban Affairs

Mark A. Tumeo, College of Graduate Studies

Associate Professors

Jennifer Alexander, Department of Urban Studies

Chenchu Bathala, Department of Finance

Larry Keller, Department of Urban Studies

Nancy Meyer-Emerick, Department of Urban Studies

Vera Vogelsang-Coombs, Department of Urban Studies

Instructors

Rene Hearn, Levin College of Urban Affairs

Kathryn Watkins-Wendell, Office of Sponsored Programs & Research

Additional Program Faculty

In addition to the above faculty, the Graduate Certificate Program draws on the experience and knowledge of the professional staff associated with the Levin College of Urban Affairs. They are supplemented by research administration professionals affiliated with the Society of Research Administrators International (SRA) and distinguished experts from leading research institutions.

Introduction

The Graduate Certificate Program in Research Administration helps practitioners address the challenges and opportunities facing research administrators, such as changing mandates, ethical delimitas, international issues, and budgeting priorities. This multi-disciplinary program also assists experienced administrators from higher education, health care, government, business, and the nonprofit sector.

Administered by the Levin College, the Graduate Certificate Program blends the theory and practice of public administration and research administration. It equips participants with the skills necessary to survive and succeed as professional and ethical leaders in their field while facilitating their pursuit of a master's degree in public administration. Also, it enables networking and an appreciation for lifelong learning.

The Levin College's plan is to deliver this program in an executive format. Therefore, the course pricing will be similar to that utilized by the EMBA Program of the Nance College of Business.

Courses are developed by Cleveland State University faculty in partnership with research administration professionals to provide program participants with a customized graduate curriculum. Cleveland State University faculty and distinguished experts drawn from leading research institutions will deliver this curriculum in an executive format. Each course involved one week of residency at Cleveland State University, although participants will be required to complete assignments before, during, and after this intensive week of study. Participants will demonstrate their mastery of the certificate program's course work through the completion of papers, exams, or applications.

Admission Information

Applications are being accepted for Spring 2006.

Applicants who are not enrolled in a graduate degree program at Cleveland State University must apply for graduate certificate admission. Applicants for admission into the graduate certificate program must:

- a. Submit an application for a graduate certificate-seeking program, along with the \$30 fee
- b. Provide documentation of requisite professional experience
- c. Submit an official transcript that shows evidence of an earned bachelor's degree from an accredited university with a cumulative undergraduate GPA of at least 2.75
- d. Submit two letters of reference from individuals familiar with the applicant's research administration experience.
- e. Submit a resume indicating educational background, and a philosophy statement that explains your commitment to the profession, leadership and excellence.
- f. Meet ONE of the following criteria:
 1. Obtained a GRE score at the 50th percentile or higher within the last six years
 2. Completed the equivalent of 12 semester hours of Cleveland State

University graduate course work AND earned a grade of B or better in each course

3. Earned a baccalaureate degree and an undergraduate GPA that was at last 3.000

4. Earned a master's or a J.D. degree from an accredited institution

g. Upon admission to this graduate certificate program, all students must contact the Graduate Program Advisor of the Levin College to prepare a program of study.

Degree-seeking graduate students who hold regular status in the Levin College of Urban Affairs will be considered for admission to the certificate program. In addition, applicants must have a career commitment to research administration as evidenced by the student's resume and a statement of career goals.

Students enrolled in a graduate degree program at Cleveland State University must file prior to graduation a letter stating their intent to complete the requirements for the Certificate in Research Administration. The letter, addressed to the Graduate Programs Advisor of the Levin College, must specify the anticipated date of completion for each course taken to fulfill the certificate requirements.

Certificate Requirements

The Graduate Certificate Program consists of the following five required courses.

Required Courses

PAD 600 Introduction to Public Administration (four credits)

PAD 604 Organizational Behavior (four credits)

PAD 634 Ethics in the Public Sector (four credits)

PAD 633 Budgetary Policy (four credits)

PAD 628 Fundamentals of Research Administration (four credits)

See the Master of Public Administration section of this *Catalog* for more information on individual courses.

Course Descriptions

• Added Courses

(January 01, 2005)

BIO 684/884 Research Seminar (1-0-1)

Weekly topics vary with instructor and guest speakers. May be repeated for credit.

(January 01, 2005)

BLW 511 Business Law and Ethics (3-0-3).

Explores and analyzes the ethical and legal implications of significant environment forces impacting business. Topics include corporate and social responsibility, workplace and employment issues, multinational business operations, US and international legal and regulatory issues, ecology and pollution issues, and models of ethical analysis for management decisions.

(January 01, 2005)

EVS 581 OhioView Prerequisite Remote Sensing (1-4 credit hours).

Prerequisite: Consent off the instructor at the university offering the course. Placeholder

course designed to enable CSU students to take courses prerequisite to introductory courses in Remote Sensing offered at other OhioView universities over the Polycom network. Details on material, schedules, and syllabi for courses to be offered will be provided roughly 2 months before the beginning of the semester.

(January 01, 2005)

[EVS 582 OhioView Introductory Remote Sensing \(1-4 credit hours\).](#)

Prerequisite: Consent of the instructor at the university offering the course, including any prerequisites normally required for the course in question. Placeholder course designed to enable CSU students to take introductory courses in Remote Sensing offered at other OhioView universities over the Polycom network. Details on material, schedules, and syllabi for courses to be offered will be provided roughly 2 months before the beginning of the semester.

(January 01, 2005)

[EVS 585 OhioView Advanced Remote Sensing \(1-4 credit hours\).](#)

Prerequisites: Consent of the instructor at the university offering the course, including any prerequisites normally required for the course in question. Placeholder course designed to enable CSU students to take advanced courses in Remote Sensing offered at other OhioView universities over the Polycom network. Details on material, schedules, and syllabi for courses to be offered will be provided roughly 2 months before the beginning of the semester.

(January 01, 2005)

[EVS 588 OhioView Research in Remote Sensing \(1-4 credit hours\).](#)

Prerequisite: Consent of the instructor at the university offering the research opportunity. Placeholder course designed to enable CSU students to undertake research in Remote Sensing with faculty at other OhioView universities over the Polycom network. Details on research opportunities will be provided roughly 2 months before the beginning of the semester.

(January 01, 2005)

[FRN 592 Special Topics: Study Abroad \(1 to 6 credits\).](#)

Prerequisites: Graduate Standing. Study of a particular topic in French language, literature, or civilization as part of the university's Study Abroad Program. May be repeated with change of topic.

(January 01, 2005)

[GER 592 Special Topics: Study Abroad \(1 to 6 credits\).](#)

Prerequisites: Graduate Standing. Study of a particular topic in German language, literature, or civilization as part of the university's Study Abroad Program. May be repeated with change of topic.

(January 01, 2005)

[MLA 592 Special Topics: Study Abroad \(1 to 6 credits\).](#)

Prerequisites: Graduate Standing. Study of a particular topic in a foreign language, literature, or civilization as part of the university's Study Abroad Program. May be repeated with change of topic.

(January 01, 2005)

[OMS 525 International Operations Management \(3-0-3\).](#)

Introduces students the advantages and pitfalls of managing productive systems outside the US. Study of multinational manufacturers and the effects of culture, language, politics, and trade agreements on global supply chain performance through case studies. Topics include history of international trade, operations in global business strategy, improving global supply chain performance, Japanese tier system for outsourcing, global quality standards, and global service operations

(January 01, 2005)

[PHY 596 Laboratory Training in Radiation Therapy Physics I \(2-6-4\).](#)

Prerequisites: BIO 266, BIO 267, PHY 330, PHY 350, PHY 360, PHY 474 (or equivalents, PHY 530, PHY 535 (may be taken concurrently), permission of instructor and departmental approval. The student will work with medical physicists and on his or her own to perform tasks required in a radiation therapy department, including quality assurance, absorbed dose

calibrations, calculations, and measurements for external beams and brachytherapy.

(January 01, 2005)

PHY 597 Laboratory Training in Radiation Therapy Physics II (2-6-4).

Prerequisites: PHY 596, permission of instructor and departmental approval. The student will work with medical physicists and on his or her own to perform tasks required in a radiation therapy department, including quality assurance, absorbed dose calibrations, calculations, and measurements for external beams and brachytherapy, as a continuation of the work started in PHY 596.

(January 01, 2005)

PSY 595 Professional Seminar (4-0-4)

To support student's continued development as a diversity practitioner, students are required to attend a Professional Seminar. The Professional Seminar covers such topics as Diversity Ethics, Internal and External Consulting and Work Case Consultations. Students' Individual Development Plans are evaluated.

(March 01, 2005)

HSC 567 Practicum in Gerontology (1-0-1)

Prerequisites: Undergraduate course in introductory psychology; course to be taken concurrent with HSC 526 or permission of instructor. Shadowing and discussion of observations in community-based gerontology settings.

(March 15, 2005)

ECN 675 Labor Economics (4-0-4)

Prerequisite: Economics MA Program student or permission of instructor. Analysis of labor market issues such as labor supply and demand, wage inequality, human capital formation, unemployment, the minimum wage, labor mobility and unions. Considers policy applications including school quality choices and the effect of health and safety regulations.

(March 15, 2005)

HIS 515 19th Century America: Industrial Capitalism and its Dissenters (4-0-4)

Examines the economic, social, and political transformation of the United States in the nineteenth century. Topics typically include the rise of industrial capitalism and social and political responses such as abolitionism, sectionalism, the women's rights movement, labor activism, and Populism.

(This course number should be added to the Graduate Certificate in Middle Childhood Science Education as well):

(March 15, 2005)

PHY 500 Conceptual Physics for Middle School Teachers (4-2-5)

Prerequisite: Graduate standing in Graduate Certificate in Middle Childhood Science Education. Provides the content knowledge and skills of scientific inquiry necessary for teaching physics in middle school. Learning objectives are based on the national standards for science for grades four through eight. Content includes: kinematics, mechanics, heat and Temperature, energy, energy transfer, waves, acoustics, light and optics. Lectures will coordinate with laboratory exercises and inquiry based activities.

(April 01, 2005)

CHM 614/714 Chromatography and Separation (4-0-4).

Prerequisite: CHM 511 or equivalent. Comprehensive survey of separation techniques, including solvent extraction, gas chromatography, liquid chromatography, supercritical fluid chromatography, chromatography detectors, gel electrophoresis, and capillary electrophoresis.

(July 15, 2005)

HSC 590 Physical Therapy Organization, Administration & Management I (2-0-2)

Prerequisites: Admission to the PT Program or permission of instructor. Introduces the physical therapy student to the management, organization, and practice functions of the American health care delivery system as they relate to the practice of physical therapy. The role of the physical therapist in health care is examined in relationship to socioeconomic, political, ethical, and cultural factors.

(July 15, 2005)

HSC 593 Physical Therapy Organization, Administration, & Management II (1-0-1)

Prerequisites: Admission to the PT Program and HSC 590. Investigation of managerial, organizational, and supervisory principles as related to physical therapy.

(July 15, 2005)

ADM 675 Public Relations and Public School Administration (3-0-3).

Desinged to assist present and future administrators in developing and evaluating public relations policies and procedures. Activities and reports are field-based and require students to evaluate existing programs and to explore new approaches to public relations in a public school environment.

(July 29, 2005)

EST 503 Student Teaching in Special Ed: Multi Handicapped (four credits).

(July 29, 2005)

EST 583 Practicum in Secondary Education Mathematics (twøthree credits).

Structured field experience designed to accompany secondary methods courses in English, science, mathematics, or social studies education. Prepares students for student teaching; stresses the practical application of theory and research to the planning, delivery, and evaluation of instruction. Students explore the various roles of a teacher and begins formulating a personal philosophy for teaching while working in a junior or senior high school classroom under the direction of a cooperating teacher and a University supervisor, includes seminar. Required for secondary teaching licensure.

(July 29, 2005)

EST 584 Practicum in Secondary Education Social Studies (three credits).

Structured field experience designed to accompany secondary methods courses in English, science, mathematics, or social studies education. Prepares students for student teaching; stresses the practical application of theory and research to the planning, delivery, and evaluation of instruction. Students explore the various roles of a teacher and begins formulating a personal philosophy for teaching while working in a junior or senior high school classroom under the direction of a cooperating teacher and a University supervisor, includes seminar. Required for secondary teaching licensure.

(July 29, 2005)

EST 585 Practicum in Secondary Education Science (fōurfive credits).

Structured field experience designed to accompany secondary methods courses in English, science, mathematics, or social studies education. Prepares students for student teaching; stresses the practical application of theory and research to the planning, delivery, and evaluation of instruction. Students explore the various roles of a teacher and begins formulating a personal philosophy for teaching while working in a junior or senior high school classroom under the direction of a cooperating teacher and a University supervisor, includes seminar. Required for secondary teaching licensure.

(July 29, 2005)

EST 589 Student Teaching in Secondary Education English (ten credits).

Prerequisites: Prior application and approval of the Office of Field Services; must be taken concurrently with EDB 595. Five full days a week for one semester in a secondary school classroom observing and teaching under the directions of a cooperating teacher and a University supervisor. Required for secondary teaching license.

(July 29, 2005)

EST 590 Student Teaching in Secondary Education Mathematics (ten credits).

Prerequisites: Prior application and approval of the Office of Field Services; must be taken concurrently with EDB 595. Five full days a week for one semester in a secondary school classroom observing and teaching under the directions of a cooperating teacher and a University supervisor. Required for secondary teaching license.

(July 29, 2005)

EST 591 Student Teaching in Secondary Education Social Studies (ten credits).

Prerequisites: Prior application and approval of the Office of Field Services; must be taken concurrently with EDB 595. Five full days a week for one semester in a secondary school classroom observing and teaching under the directions of a cooperating teacher and a University supervisor. Required for secondary teaching license.

(July 29, 2005)

EST 592 Student Teaching in Secondary Education Science (ten credits).

Prerequisites: Prior application and approval of the Office of Field Services; must be taken concurrently with EDB 595. Five full days a week for one semester in a secondary school classroom observing and teaching under the directions of a cooperating teacher and a University supervisor. Required for secondary teaching license.

(July 29, 2005)

EST 595 Seminar on Integrating Theory and Practice (three credits).

Exit seminar for initial licensure programs in secondary and middle childhood education. Students complete and present a professional teaching portfolio and action research project.

(July 29, 2005)

EST 602 Student Teaching in Special Education: Learning Disabilities (four credits).

(July 29, 2005)

CVE 601 Civil Engineering Graduate Seminar (1-0-1)

Prerequisite: Graduate Standing. Provides students with experience and instruction on research and presentation methods and oral communication of technical information, focused on civil engineering issues. Invited experts from industry and academia, from various civil engineering field, present and discuss current issues and trends in research and professional practice. Students will present a research paper at the end of the course.

(July 29, 2005)

CVE 701 Civil Engineering Graduate Seminar (1-0-1)

Prerequisite: Graduate Standing. Provides students with experience and instruction on research and presentation methods and oral communication of technical information, focused on civil engineering issues. Invited experts from industry and academia, from various civil engineering field, present and discuss current issues and trends in research and professional practice. Students will present a research paper at the end of the course.

(July 29, 2005)

EEC 584 Computer Networks (4-0-4).

Prerequisite: Graduate Standing. Provides a comprehensive overview of computer networks. Topics include network architectures, communication protocols; data link control, medium access control, LANS and MANS: network layer, TCP/IP; and network security.

(July 29, 2005)

EEC 587 Rapid Digital System Prototyping (2-4-4).

Prerequisite: EEC 580. Experiments and projects utilizing VHDL, modern EDA software tools and CPLD/FPGA devices to design, synthesize, simulate, implement and test combinational circuits, sequential circuits, register-transfer-level systems and processor.

(July 29, 2005)

EEC 621/EEC 721 Internet Software Systems (4-0-4).

Prerequisite: EEC 521. Analyzing, designing, constructing, testing, and maintaining Internet-based software systems; hypertext markup language, Java servlet, Java server pages, Javascript, extensible markup language (XML), extensible stylesheet language (XSL), XML schema, document object model.

(July 29, 2005)

EEC 624 Software Testing (4-0-4).

Prerequisite: EEC 521. Software errors, bug reports, test case design, white box testing, black box testing, unit testing, integration testing, system testing, regression testing, test planning and management.

(July 29, 2005)

EEC 625 Software Design and Architecture (4-0-4).

Prerequisite: EEC 521. An in-depth look at software design. Study of design patterns, frameworks, and architectures. Survey of current middleware architectures. Design of distributed systems using middleware. Component based design. Measurement theory and appropriate use of metrics in design. Designing for qualities such as performance, safety, security, reusability, reliability, etc. Measuring internal qualities and complexity of software. Evaluation and evolution of designs. Basics of software evolution, reengineering, and reverse engineering.

(July 29, 2005)

EEC 670/EEC 770 Power Systems Operation (4-0-4).

Prerequisite: EEC 571. Steady-state control of power flow. Optimal generating unit commitment. Frequency/active-power control, voltage/reactive power control. Automation generation of interconnected power systems.

(July 29, 2005)

EEC 671/EEC 771 Power Systems Control (4-0-4).

Prerequisite: EEC 571. Nonlinear dynamic modeling and control of interconnected power systems in a deregulated environment. Voltage collapse, transient phenomena. Power-system stability enhancements, flexible FACTS devices.

(July 29, 2005)

MCE 603 Interfacing and Control of Mechatronic Systems (2-2-4).

Prerequisite: MCE 503. Study of mechatronic sensors and actuators from the physical principles governing their behavior. Bond graph modeling of specific devices like piezoelectric and magnetostrictive transducers, capacitance sensors, electric motors, charge coupled devices, operational amplifiers, Hall effect sensors and others. Digital control applied to mechatronic systems. Electronic interfacing.

(August 8, 2005)

PAD 549 Comparative Public Administration (4-0-4).

Provides students with a better understanding about public administration and public management systems in a comparative perspective, in developed and developing countries. Acquaints students with intellectual curiosity, in the context of globalization and democratization of societies, how different public administrative systems and practices are taking place in the management of national governments.

(August 8, 2005)

PAD 615 Economic Development and Budgetary Policy (4-0-4).

Overview of national economic policy development, implementation, and impacts. Current issues in political economy and their impact on American national and sub-national governments, including the concept of wealth creation and its manifestations. Concepts are linked to the economic development process at sub-national levels of government; how economic development strategies link to wealth creation in the private and public sectors. Cross-listed with PDD 615 and UST 615.

(August 31, 2005)

EST 582 Student Teaching in Secondary Education (4+ three credits).

Prerequisite: Prior application and approval of the Office of Field Services; must be taken concurrently with EDB 595. Five full days a week for one semester in a secondary school classroom observing and teaching under the direction of a

cooperating teacher and a University supervisor. Required for secondary teaching license.

(September 15, 2005)

HIS 587 Modern Middle East (4-0-4). Examines the most important factors that influenced the development of the modern Middle East between the 18th through the 21st centuries. Subjects include colonial empires in the Middle East, the impact of Westernization and modernity, the establishment of nation states, the Israeli-Palestinian conflict, the Iranian revolution, Cold war politics, influence of oil, political Islam and terrorism, America's involvement, and the Middle East post 9/11. Although this is an upper division class, no previous background knowledge of Middle East History is necessary.

(October 18, 2005)

PAD 549 Comparative Public Administration (4-0-4).

Provides students with a better understanding about public administration and public management systems in a comparative perspective, in developed and developing countries. Acquaints students with intellectual curiosity, in the context of globalization and democratization of societies, how different public administrative systems and practices are taking place in the management of national governments.

(October 18, 2005)

PAD 615 Economic Development and Budgetary Policy (4-0-4).

Overview of national economic policy development, implementation, and impacts. Current issues in political economy and their impact on American national and sub-national governments, including the concept of wealth creation and its manifestations. Concepts are linked to the economic development process at sub-national levels of government; how economic development strategies link to wealth creation in the private and public sectors. Cross-listed with PDD 615 and UST 615.

(October 18, 2005)

PAD 617 Public Administration & Political Process (4-0-4).

Political factors that condition the structure and functions of public agencies, including the public interest, agency constituencies, and political influence. (Cross-listed with PSC 605)

(October 18, 2005)

PAD 619 City Management (3-0-3).

Introduction to, and overview of the study and practice of American city management. The governance of the American municipality is the primary focus, with a concentration on the role of city management as a public profession in the process of constitutional and equitable governance. Examines the basic administrative processes of modern local government and their roles in governance in formulating policy direction for the long and short-term. Examines the critical and political roles of the city manager as the municipal chief executive and the city administrator as the municipal chief administrative executive.

(October 18, 2005)

PAD 628 Fundamental of Sponsored Research Administration (4-0-4).

Designed to give students a knowledge of the history, theories and practices of research administration in the United States, Canada, and internationally. Students will be introduced to the history, concepts and major issues of research administration including but not limited to regulatory frameworks, administrative practices and theories, overview of organizations and institutions engaged in research administration, financial administration, responsible conduct of research, technology transfer and related subjects. This course serves as a basis to more specialized studies of research administration and management.

(October 18, 2005)

PAD 635 Public Sector Management (4-4-4). _

Analysis and discussion of public policy management, leadership, and statesmanship. (Cross-listed with PSC 635)

(October 18, 2005)

PSC 605 Public Administration & Political Process (4-0-4). _

Political factors that condition the structure and functions of public agencies, including the public interest, agency constituencies, and political influence. (Cross-listed with PAD 617)

(October 18, 2005)

PSC 635 Public Sector Management (4-4-4). _

Analysis and discussion of public policy management, leadership, and statesmanship. (Cross-listed with PAD 635)

(October 28, 2005)

ESL 502 ESL Graduate Writing Course (2-0-2). _

The course will continue to focus on the writing skills needed in graduate school. Instruction will address students' needs: grammar at the sentence level and organization and style at the paragraph and essay level. Students will have individualized grammar assignments and in-class writing, as well as writing for homework. Assignments will be such that students may use writing assignments from other academic courses or a topic provided. In addition to classroom practice, students will have out-of-class assignments for individualized writing practice and academic assignments. Some time will be given to each of the following: citing of sources, paraphrasing/summarizing, short-answer essay questions, lab reports, and longer research papers.

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College of Business Course Description

(July 29, 2005)

Executive Business

EBA 600 The Manager's Workshop (5-0-5). Prerequisite: EMBA Student. The opening 6-day residency includes an orientation to the EMBA program's curriculum and academic/administrative policies and introduces key management decision making concepts, skills and techniques; presents models and frameworks for ethical analysis in decision making; and assesses technical skills in areas where students are weak and introduces them to concepts in management, accounting, finance, business communications, and team dynamics.

EBA 604 Economic Perspectives in Management (2-0-2). Prerequisite: EMBA student. Introduces principles of microeconomics. The course takes a managerial perspective as it applies various economic concepts to real-world problems encountered in the management of the firm.

EBA 605 Ethical Perspectives in Business (2-0-2). Prerequisite: EMBA Student. Discusses and investigates the ethical environment of business and the impact of business decisions and activities on society and its various stakeholders. Ethical issues, introduced during the Opening Residency (EBA 600), will be explored in more depth in EBA 605.

EBA 606 Accounting for Managers (4 credits). Prerequisite: EMBA Student.

Introduces financial and management accounting theories and practices including coverage of accounting measurement of income and financial position, the analysis of business events, and their effects on the financial position and income of a business. Emphasis on the basics of managerial accounting, using managerial accounting for planning, controlling, and decision-making purposes, and the behavioral implications of using managerial accounting methods in decision-making.

EBA 607 Organization & Leadership (2-0-2). Prerequisite: EMBA Student. Discusses issues involving leadership and its role in bringing about organizational change; tools to be effective leaders in dynamic organizational settings; building understanding about how organizational change is achieved; anchoring organizational changes into the organization's culture, and enhancing personal capabilities and abilities to navigate change in managerial careers.

EBA 608 Strategic Human resources Management and Labor Relations (2-0-2). Prerequisite: EMBA Student. Reviews significant issues pertaining to strategic human resources management and labor relations. Topics include employment relationship, strategic planning and staffing, reward systems, employee development, and conflict resolution and negotiation. Parallels and contrasts between union and non-union firms are key to this course.

EBA 609 Marketing Strategy (4-0-4). Prerequisite: EMBA Student. Advanced theories, concepts, and techniques for formulating strategic marketing plans and making marketing decisions for business and non-business organizations in U.S. and global environments. Topics include environmental analysis, market opportunity analysis, segmentation and positioning, marketing-mix decisions, and formulating strategic plans.

EBA 610 Finance for Managers (4-0-4). Prerequisite: EMBA Student. Introduces basic and advanced concepts of corporate financial management to EMBA students with significant educational background and employment history. Topics include ratio analysis, risk concepts, capital budgeting, cost of capital, capital structure, dividend policy, mergers and acquisitions, and long range financial planning.

EBA 611 Management Information Systems (4-0-4). Prerequisite: EMBA Student. Provides an overall view of the issues central to an enterprise's information system (IS) including but not limited to decision support, enterprise resource planning systems, business process re-engineering and systems design, change management and knowledge management as well as managing out sourcing and off shore IS projects. It does not require any technical expertise and will not teach any specific computer programming. On the completion of this course students will not only become familiar with the key forces shaping the firm's IS environment but also issues pertaining to the management of the firm's IS portfolio, strategic uses of IS, as well as how to realize the value of there is within the organization.

EBA 612 Supply Chain Management (4-0-4). Prerequisite: EMBA Student. Provides a comprehensive survey of supply chain concepts, strategies, and models in a format that is suitable to executives. Topics include such fundamentals as supply management, push-pull supply chain systems, centralized versus decentralized control, e-business issues, third party logistics companies, distribution systems, purchasing, and the decision support tools for supply chain.

EBA 613 International Business Strategy (3-0-3). Prerequisite: EMBA Student. Explores the impact of global environmental forces on management strategies for entering and operating in international markets. Surveys theories and concepts in international marketing, finance, operations, and strategic planning. Considers managerial implications of global trends in politics, trade, culture, and regulatory practices, and the role of international institutions.

EBA 614 International Study Tour (0-8-1). Prerequisite: EMBA Student. Extends material from EBA 613 International Business Strategy by providing an international

business experience beyond classroom instruction and learning. EBA 614 widens the global perspective of participants; provides “on location” experience, and interaction with foreign business, government, and nonprofit sector executives; and affords opportunities to analyze corporate strategies in selected industrial sectors and foreign markets.

EBA 615 Business Strategy (4-0-4). Prerequisite: EMBA Student. Explores the integrative and cross-functional nature of corporate strategy and decision-making. Applies principles, concepts, and theories from business and marketing strategy, corporate finance, human resource management, managerial accounting, and operations management-to-management decision and the formulation of strategic business plans.

EBA 616 Applied Integrative Seminar (1-3-4). Prerequisite: EMBA Student. Application and integration of business strategy decision-making and solutions. Applies principles, concepts, and theories from business and marketing strategy, corporate finance, human resources management, managerial accounting, and operations management to a field experience in business, analyzing and solving practical, real-world business problems.

Information Systems

IST 614/714 Project Management and Scheduling (4-0-4). Designed to teach the students the nature and scope of Project Management (PM). The students will learn the planning process of a project as well managerial challenges associated with the design, control, and scheduling of projects. Discusses techniques and decision tools used in solving project managements issues as well as strategies for successfully managing Information Technology Projects. Project management software will be used throughout the course.

IST 634/734 Enterprise Databases (4-0-4). Prerequisite: IST 604. Emphasizes the implementation of relational database management systems. Topics include database design algorithms, transaction processing, concurrency control, recovery, distributes query processing, and database security. Emerging technologies, one of the following advanced database topics will also be discussed: object-oriented databases, deductive databases, knowledge discovery/data mining, data warehousing.

IST 635/735 Business Value of Information Technology (4-0-4). Exposes students to models and methods for aligning a business strategy with appropriate investment in information technology infrastructure and services. A variety of information and technical architectures will be explored together with how they relate to different styles of business strategy. The focus will include architectures that will enable flexible collaboration with business partners so that the business value can be realized from the firm’s IT investment.

IST 636/736 Managing Networks and Security Risks (4-0-4). Prerequisite: IST 606. Advanced knowledge of data communications and networking as they apply to computer security. Identify and analyzing the various types of security risks. Investigating the tools used to counteract security risks. Developing security and business continuity plans based on the security risks and tools incorporated.

IST 660/760 Business Analytics and Data Mining (4-0-4). Prerequisite: IST 634. Introduces the basic concepts of business analytics, data warehousing, and data mining. Topics discussed include: the need for business analytics in today’s dynamic business environments, data warehousing strategies, technologies, designs, and architectures (e.g., star schemas), data mining techniques and algorithms (e.g., clustering, classification, predictive modeling, decision trees, neural networks, and visualization), Sample applications of these technologies and techniques will be discussed.

IST 664/764 Business Geographics and GIS (4-0-4). Prerequisite: IST 604. Introduction to Geographic Information Systems (GIS), spatial database and specialized application of GIS concepts and tools to the analysis of business problems. Covers spatial data representation, modeling, handling and manipulation. Emphasis on issues related to business service planning, spatial data mining, analysis and decision support. Introduces GIS software to perform geographic query, analysis, visualization and custom application development. Students also learn to evaluate GIS assets, constraints, risks and strategies for implementation of GIS technology.

IST 665/765 Enterprise Resource Planning (4-0-4). Prerequisite: IST 634. Addresses the increasing need to integrate a broad range of enterprise processes, information systems functions, and hardware and software technologies. Topics covered include: the need, motivation, and business drivers for integration – in any of its forms: processes, functions, or technologies; challenges and obstacles related to integration and implementation of comprehensive enterprise systems within and across organizations; planning, initiating, selecting, realizing, supporting, and maintaining an enterprise system. Change management issues and team dynamics relating to enterprise systems will also be discussed. Will also touch on specific integration models and technologies.

IST 800 Research Design and Measurements (4-0-4). Prerequisite: Doctoral Standing. Provides an in-depth discussion of research design and measurement issues for IS researchers. Includes principles and logic of experimental and non-experimental research design and measurement theory, scaling methods, principles of qualitative research design and comparison of various design techniques including reliability.

IST 801 Foundations of IS (4-0-4). Prerequisite: Doctoral Standing. Intended to provide students with a deep understanding of the core principles and classical research literature in the field of Information Systems. Intended to familiarize students in fundamental themes, and key research areas and their methodologies.

IST 802 Seminar in IS Current Topics (4-0-4). Prerequisite: Doctoral Standing. Intends to develop comprehensive understanding of the state of art in IS technologies, systems, issues and policies. The content and topic varies according to the instructor. The student will be expected to develop a position paper in one of the evolving areas of IS.

IST 803 Knowledge Management (4-0-4). Prerequisite: Doctoral Standing. Intended to provide students with a deep understanding of Knowledge Management and the strategies, techniques, tools, technologies and systems that enable organizations to acquire, store, distribute and process knowledge. In today's knowledge economy an understanding of Knowledge Management Systems is definitely a vital area to have mastery of within the IS field.

IST 891 Doctoral Research in Information Systems (one to five credits). Prerequisites: Completion of the Analytical core and IST 801 and IST 802.

IST 895 Dissertation Research Seminar (3-0-3). Co-requisite: IST 899 (Dissertation). Focuses on research in Information Systems. Involves IS faculty, outside speakers and dissertation stage doctoral students.

IST 896 Current Problems in Information Systems (one to five credits). Prerequisites: IST 800, IST 801, and IST 802. Investigation of selected problem in Information Systems. May be repeated with change of topic.

IST 899 Dissertation (one to five credits). Prerequisite: Successful completion of comprehensive examination.

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Course Descriptions

• Updated Courses

(January 01, 2005)

[MBA 660 Integrative Business Strategy \(4-0-4\).](#)

Prerequisites: Completion of Level I, Level II, and group A of Level III or permission of M.B. A. program advisor. Beginning Summer 2004, you may not take any of the Level I, II or Group A courses CONCURRENTLY with MBA 660. Explores the integrative and cross-functional nature of corporate strategy and decision making. Applies principles, concepts, and theories from business and marketing strategy, corporate finance, human resources management, managerial accounting, and operations management to management decisions and the formulation of strategic business plans.

(January 01, 2005)

[MME 504 Continuum Mechanics \(3-0-3\) \(4-0-4\).](#)

General discussion of cartesian tensors. Application to the mechanics of linear and nonlinear continua. Unified analysis of stress and deformations in solids and fluids. Cross-listed with MCE 504.

(January 01, 2005)

[PAD 650 550 Institutional Development of the Nonprofit Organization \(4-0-4\).](#)

Examines nonprofit organizations as community institutions, and the role of institutional management and leadership in their development. Covers the nature of leadership and management in the nonprofit sector and the differences between them; fund-raising and financial management; governance and the respective roles of board, staff, and volunteers; the political, economic, and inter-governmental environment; community relations; needs assessment; and planning and performance measurement. A highly interactive, hands-on approach emphasizing discussion, case analysis, and problem solving.

(March 15, 2005)

[HSC 560 Interdisciplinary Team Development \(3-0-3\) \(2-2-3\).](#)

(March 31, 2005)

[CHM 613/713 Advanced Electroanalytical Chemistry \(4-0-4\).](#)

Prerequisite: CHM 511 or prior approval of the Faculty instructor. Theory, principles, and applications of electroanalytical chemistry. Electron transfer in molecular mechanisms and molecular imaging, sensors, and state-of-the-art devices for analysis and diagnosis. Theory and application of advanced scanning probe techniques including AFM, STM, Scanning Electrochemical Microscopy (SECM), and coupled AFM-electrochemical analysis.

(March 31, 2005)

[CHM 625/725 Quantum Mechanics \(4-0-4\).](#)

Prerequisite: Approval of Advisor or one year of undergraduate physical chemistry. Principles of quantum theory including aspects of structure and spectroscopy. Will include projects using common quantum computational software programs.

(March 31, 2005)

[CHM 640/740 Special Topics in Inorganic Chemistry \(4-0-4\).](#)

Prerequisite: Approval of advisor. Discussion of special topics in inorganic chemistry, reflecting student and faculty interests. Currently, bioinorganic chemistry and inorganic nanotechnology are the modern topics. Examples from the newest chemical literature will be discussed.

(March 31, 2005)

[CHM 641/741 Inorganic Mechanisms and Structures \(4-0-4\).](#)

Prerequisite: CHM 441 or equivalent. Application of chemical kinetics, thermodynamics, and elementary quantum chemistry to the determination of mechanisms of inorganic reactions;

structural aspects of inorganic reactivities. Introduction to bioinorganic chemistry. Applications cover almost every element and examples from the newest chemical literature.

(March 31, 2005)

CHM 642/742 Theoretical Inorganic Chemistry (4-0-4).

Prerequisite: CHM 441 or equivalent. Application of chemical kinetics, thermodynamics, and elementary quantum chemistry to the determination of mechanisms of inorganic reactions; structural aspects of inorganic reactivities. Introduction to bioinorganic chemistry. Applications cover almost every element and examples from the newest chemical literature.

(March 31, 2005)

CHM 642/742 Theoretical Inorganic Chemistry (4-0-4).

Prerequisite: CHM 625/725 or equivalent. Symmetry and group theory of inorganic and organometallic compounds; irreducible representations and character tables; applications to valence-bond and molecular-orbital theories of chemical bonding, structures, and spectroscopy. Applications cover examples from the newest chemical literature.

(March 31, 2005)

CHM 661/761 Macromolecular Structure and Dynamics (4-0-4).

Prerequisite: Undergraduate organic chemistry, physical or analytical chemistry or prior permission of the Faculty instructor. Survey of basic and advanced analytical techniques that are critical in investigations of structure and dynamics of biomolecules, including protein, DNA and RNA folding and structures and function. Examination of biomolecules using basic and ADVANCED techniques including spectroscopic, time-resolved, and molecular imaging techniques.

(March 31, 2005)

CHM 502 Biochemistry (4-0-4).

Prerequisite: CHM 332. Protein chemistry and metabolism of carbohydrates, lipids, proteins, nucleic acids, vitamins, and hormones, with major emphasis on biochemical processes in human cells and organs, protein purification, enzyme kinetics, and energetics of metabolic reactions. Immunology and AIDS, cancer and oncogenesis, DNA replication, RNA synthesis, protein synthesis, and regulation of gene expression. A scientific review manuscript on a research topic will be required from students signing up for CHM 502.

(May 01, 2005)

MME 550 Advanced Dynamics (3-0-3): (4-0-4).

(July 05, 2005)

ENG ESL 503 Intermediate English as a Second Language Speaking Skills (4-0-4).

Spoken English for non-native, international graduate students. Practice in speaking and listening to American English. Recognition and production of sounds, rhythm, and intonation patterns at an intermediate level. Development of competence and confidence in listening comprehension and speaking skills in both academic and general conversation within supportive structured and non-structured situations.

(October 28, 2005)

ESL 503 Intermediate English as a Second Language Speaking Skills (4-0-4) (2-0-2).

Spoken English for non-native, international graduate students. Practice in speaking and listening to American English. Recognition and production of sounds, rhythm, and intonation patterns at an intermediate level. Development of competence and confidence in listening comprehension and speaking skills in both academic and general conversation within supportive structured and non-structured situations.

(July 05, 2005)

ENG ESL 504 Communication Skills for International Teaching Assistants (4-0-4).

Designed to improve the communication skills of international teaching assistants. Focus is on improving pronunciation and language use in the classroom, general teaching skills, and understanding the American educational system.

(October 28, 2005)

ESL 504 Communication Skills for International Teaching Assistants (4-0-4) (2-0-2).

Designed to improve the communication skills of international teaching assistants. Focus is on improving pronunciation and language use in the classroom, general teaching skills, and understanding the American educational system.

(July 15, 2005)

OMS 517 Just-In-Time Manufacturing Principles of Lean Operations (4-0-4) (3-0-3).

Prerequisite: OMS 511. Presents the just-in-time philosophy in manufacturing. In-depth exploration of how to synchronize the production process and eliminate unnecessary inventory and non-value-added activities by controlling the process through the use of modern quality methods, such as supplier relationships and preventative maintenance. Students develop a strong understanding of the financial and non-financial incentives used to justify JIT/TQA activities. A solid implementation program also is examined. Prerequisite: OMS 511 or permission of the Department Chair. The primary focus of this course is to present techniques which are intended to synchronize and streamline the production/operations process including inventory management. Non-value added activities and waste are the targets of these techniques. Topics include value stream mapping, 5S, set-up time reduction, six sigma, maintaining and improving equipemtn, small lott production, and level scheduling in pull production.

(July 15, 2005)

NUR 530 Health Assessment Strategies of the School Aged Child: Strategies for Nursing Praetice and the Child with Special Needs (2-0-2) (3-0-3).

Prerequisite: Enrollment in the School Nurse Licensure Program; co-requisite: NUR 532. Expands the student's ability to use the nursing process through health appraisal of the school-aged child. Introduces the techniques of physical assessment of the school-aged child. Designed to view the child from a developmental perspective. Interviewing skills will be introduced. Theories associated with the care of children and their families will be explored, with emphasis given their health-seeking behaviors. Strategies for assessment of the medically fragile child will be discussed. The etiologies, characteristics, and treatment of medical disorders of children with moderate and severe disabilities will be addressed as will their learning and behavioral needs when participating in the development and implementation of individualized plans for education and health care.

(July 15, 2005)

NUR 532 Health Assessment of the School-aged Child: Strategies for Nursing Praetice Laboratory (0-2-4) and the Child with Special Needs Laboratory (0-4-2).

Prerequisite: Enrollment in the School Nurse Licensure Program; Co-requisite: NUR 530. Provides supervised laboratory practice to develop health appraisal skills. A comprehensive assessment tool based on the stress framework is used specifically related to the school-aged child. Designed to encourage application of learned assessment techniques. The student will have the opportunity to practice skills in the laboratory environment and assist in physical assessment of school-aged children during medical exams. Focuses on providing nursing care to the child with special medical needs, including those with moderate and sever disabilities. Addresses the requirements of family, school, and other medical personnel when providing comprehensive health care and related educational services to children.

(July 29, 2005)

CNS 633 Women and Mental Health (three two credits).

Provides counselors and other mental health professionals with an understanding of the changing nature of treatment modalities for women in counseling and psychotherapy. Introduces feminist theories of counseling and special topics such as victimization, dual careers, gender discrimination, reproductive issues, and mid-life transition. Offered every other summer (odd years).

(July 29, 2005)

EEC 623 Software Quality Assurance and Testing (4-0-4).

Prerequisite: EEC 521. Software quality, software process, quality metrics, quality models, defects, test case design, unit testing, integration testing, white box testing, black box testing, regression testing, Capability Maturity Model (CMM), and process improvement. Software quality, software quality aspects; software quality assurance SQA; SQA components, activities, and infrastructures; cost of software quality; software quality metrics and models;

software quality standards.*(July 29, 2005)*

EEC 681 Distributed Computing Systems (4-0-4).

Prerequisite: ~~EEC 581~~EEC 584. Overview of distributed computing systems. Topics include networking, interprocess communication, remote-procedure calling, name services, distributed time management, and file services. Some new technologies, including ATM networking, internetworks, multicast protocols, microkernel-based distributed operating systems, and distributed-shared memory, are discussed.

(July 29, 2005)

EEC 683 Computer Networks II (4-0-4).

Prerequisite: ~~EEC 682~~EEC 581 and EEC 584. Broadband networks, traffic characterization, admission and access control, switch architectures, congestion control. Emphasis on quantitative analysis and performance modeling.

(July 29, 2005)

EEC 685 Modeling and Performance Evaluation of Computer Systems (4-0-4).

Prerequisites: EEC 581 and ~~EEC 610~~EEC 512. Evaluation of the performance of various computer systems through measurement, analytic modeling, and simulation techniques. Topics include performance metrics, workload characterization, statistical modeling, hybrid techniques, and case studies.

(July 29, 2005)

EEC 687 Mobile Computing (4-0-4).

Prerequisite: EEC 581 and EEC 584. Provides a comprehensive overview of mobile computing, which is likely to become a pervasive part of future computing infrastructures with technical advancements in wireless communication, mobility, and portability. Topics include mobile TCP/IP protocols, mobile ad hoc networks, mobile application architectures, system issues for mobile devices, and some pervasive and ubiquitous computing examples.

(July 29, 2005)

EEC 781 Distributed Computing Systems (4-0-4).

Prerequisite: ~~EEC 581~~EEC 584. Overview of distributed computing systems. Topics include networking, interprocess communication, remote-procedure calling, name services, distributed time management, and file services. Some new technologies, including ATM networking, Internet works, multicast protocols, micro kernel-based distributed operating systems, and distributed shared memory, are discussed.

(July 29, 2005)

EEC 783 Computer Networks II (4-0-4).

Prerequisite: ~~EEC 782~~EEC 581 and EEC 584. Broadband networks, traffic characterization, admission and access control, switch architectures, congestion control. Emphasis on quantitative analysis and performance modeling.

(July 29, 2005)

EEC 787 Mobile Computing (4-0-4).

Prerequisite: ~~EEC 484~~EEC 581 and EEC 584. Provides a comprehensive overview of the mobile computing that is likely to become a pervasive part of future computing infrastructures with technical advancements in wireless communication, embedded processors, and portability technologies. Topics include mobile TCP/IP protocols, mobile ad hoc networks, mobile application architectures, system issues for mobile devices, and some pervasive and sensor-computing examples.

(July 29, 2005)

MCE 503 System Modeling (4-0-4).

~~Modeling and analysis of dynamic systems with interacting energy domains: fluids, thermal, electrical, and mechanical; formulation of linear and nonlinear state equations; unified treatment of diverse systems with bond graphs~~ *Prerequisite:* Permission of instructor. Unified approach to modeling of dynamic systems using bond graphs, with emphasis in electromechanical systems. Object-oriented and automated modeling concepts. Computer simulation and model validation.

(October 07, 2005)

ACT 600 Managerial Accounting (2-0-2 3-0-3).

Prerequisite: Graduate standing and ACT 501, or its equivalent. Development of analytical skills using management accounting problems. Emphasis on the basics of managerial accounting; using managerial accounting for planning, controlling, and decision-making purposes; and the behavioral implications of using managerial accounting methods in decision-making. For MBA students: potential behavioral implications of using managerial accounting.

(October 07, 2005)

IME 698 Master's Thesis Research (3-0-3 one to three credits).

Intended for students planning to enroll in IME 699 but who have not developed a topic or structured a committee to the level of being able to submit, and get approved, a Thesis and Dissertation Proposal Form. The thesis course is taken the last semester in which the student is enrolled. The student should design a plan of study around his or her thesis and begin the process one or two semesters prior to graduation. The students must have the thesis approved by his or her committee and the Graduate Program Committee prior to registering for IME 698. Before a student may register for IME 698, the Thesis and Dissertation Proposal Form must be on file with the College of Graduate Studies. Each student pursuing the thesis option must successfully defend his or her work in an oral examination, in person, before the committee. This examination is open to the public and a notice must be posted two weeks prior to the examination. The student must be enrolled in IME 698 or IME 699 to defend the thesis.

(October 07, 2005)

IME 699 Master's Thesis (4-0-4): (one to three credits).

Prerequisite: Completed Thesis and Dissertation Proposal Form, approved by the IME Department, on file with the College of Graduate Studies. Students must register for a minimum of 3 credits hours the first semester in which the student is enrolled in IME 699. This course may be repeated with 1 – 3 credit hours until the Thesis is successfully defended. Each student pursuing the thesis option must successfully defend his or her work in an oral examination. The oral examination is open to the public, and a notice must be posted two weeks prior to the examination.

Prerequisite: Completion of one semester of IME 698. Students may enroll in this course only if they were not able to defend their thesis during the last semester of enrollment.

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Course Descriptions

- Deleted Courses

(January 01, 2005)

COM 590 Internship in Communication (four credits). -

Fieldwork with community agencies concerned with promotional communication, communication in organizations, political campaigns, and the media. Offered every semester; see advisor for help in scheduling. Graded S/F. No more than four credit hours from either COM 590 or COM 596 may be counted toward the M.A.C.T.M. degree.

(July 29, 2005)

EEC 586 Advanced Digital Systems Laboratory (0-4-2). -

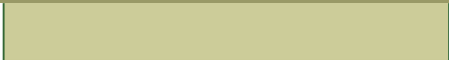
Prerequisite: EEC 580. Experiments and projects utilizing VHDL, modern EDA software tools and CPLD/FPGA devices to design, synthesize, simulate, implement and test combinational circuits, sequential circuits and register transfer level systems. No graduate credit for students who have completed EEC 481.

(July 29, 2005)

EEC 682 Computer Networks I (4-0-4). -

Prerequisite: EEC 581. Network architectures, communication protocols; data link control, medium access control, LANS and MANS; network layer, TCP/IP.

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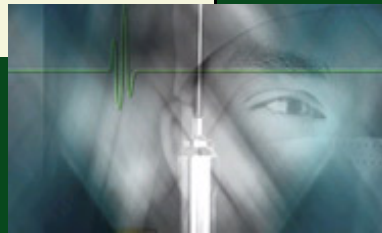
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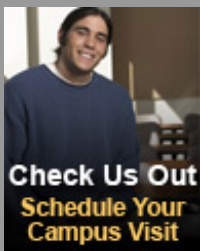
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College of Graduate Studies

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Graduate Catalog 2004-2006

The College of Graduate Studies

History and Mission

Cleveland State University has been authorized by the Ohio Board of Regents to offer graduate programs since the fall of 1967. In October of 1968, the Cleveland State University Board of Trustees created the College of Graduate Studies to facilitate the operation of graduate degree programs and to assist in the development of new programs.

As a metropolitan institution, Cleveland State University has special obligations and opportunities. First and foremost, however, Cleveland State is a university. Its basic mission — central to all universities is to preserve existing knowledge, seek new knowledge, and profess both. This is accomplished through the triad of teaching, research, and service. The University's urban location imposes an obligation to reach out to all citizens in the community with the offer of educational opportunities and services.

Within this context, the mission of the [College of Graduate Studies](#) is to provide service and support to Graduate students, faculty and academic programs that promote high quality and diverse advanced study opportunities for the betterment of Cleveland State University, the citizens of the State of Ohio and the world.

The Dean of the [College of Graduate Studies](#), in collaboration with the elected faculty members of the University Graduate Council, exercises review of all graduate programs, provides leadership in the development of new degree offerings, maintains a centralized [graduate admissions](#) system, and monitors standards for graduate student admission and graduation.

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Graduate Faculty

Most graduate courses are taught by faculty who are members of the University [Graduate Faculty](#). These faculty hold the terminal degree in their fields (usually the doctoral degree) and meet the [College of Graduate Studies](#)' standards of sustained scholarship or creative activity or, alternatively, are recognized for their accomplishments as practitioners in their disciplines. An up-to-date roster of the University [Graduate Faculty](#) may be found at www.csuohio.edu/gradcollege/.

Cleveland State University, Kent State University, the University of Akron, and Youngstown State University observe a reciprocal Graduate Faculty agreement where by members of the Graduate Faculty at each of the other three institutions may, with appropriate approvals, teach graduate courses and serve on thesis and dissertation committees for Cleveland State University graduate students.

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Graduate Degree Programs

The University offers doctoral degrees in biology, business administration, chemistry,

engineering, urban education, and urban studies.

Master's degrees are offered in 38 academic areas, and provide a comprehensive representation of the arts, sciences, and professions. These are:

Arts and Humanities: Art History (as an M.A. specialization in History), English, History, Music, Philosophy, and Spanish.

Business Administration: Accountancy, Business Administration, Computer and Information Science, Health Care Administration (as an M.B.A. specialization), and Labor Relations and Human Resources.

Education: Master of Education (M.Ed.) and two post-master's Educational Specialist (Ed.S.) programs in Educational Administration; Health and Physical Education, Sports Management and Exercise Science, and Community Health (as specializations in the M.Ed. program).

Engineering: Chemical and Biomedical Engineering, Civil Engineering, Electrical and Computer Engineering, Engineering Mechanics, Environmental Engineering, Industrial and Manufacturing Engineering, and Mechanical Engineering.

Health Professions: Health Sciences, Nursing, Occupational Therapy, Physical Therapy, Public Health, and Speech Pathology and Audiology.

Natural Sciences and Mathematics: Biology, Chemistry, Environmental Science, Mathematics (M.A. and M.S.), and Physics.

Social and Behavioral Sciences: Communication; Economics; Psychology, including a post-master's degree in School Psychology (Psy.S.); Social Work; and Sociology.

Urban Affairs: Environmental Studies; Public Administration; Urban Planning, Design, and Development; and Urban Studies.

The College of Graduate Studies also offers a joint J.D./M.B.A. program in conjunction with the College of Law and the College of Business Administration, a joint J.D./M.P.A., J.D./M.A. E.S., and J.D./M.U.P.D.D. programs in conjunction with the College of Law and the College of Urban Affairs for students interested in earning graduate degrees in business administration, public administration, or urban planning and design while concurrently earning a degree in law, and a joint M.S.N./M.B.A. program in conjunction with the College of Business Administration and the School of Nursing.

Graduate Certificate and Licensure Programs

The University offers a variety of [graduate certificate programs](#) that range from nine to 18 credit hours. Students may either complete a graduate certificate program while working simultaneously on a graduate degree or pursue a certificate only.

In addition, the University offers a variety of programs to accommodate individuals who wish to pursue State of Ohio teaching licensure. Teacher licensure programs are available to graduate degree-seeking students and to those solely interested in qualifying for state licensure.

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Academic and Scientific Integrity

The University, in its effort to preserve, advance, and disseminate knowledge, relies on the academic and scientific integrity of its faculty and students. Academic and scientific integrity foster credibility within the institution, the Greater Cleveland community, and higher education as a whole.

Cleveland State University is committed to maintaining academic and scientific integrity. As such, it is the duty and responsibility of both faculty and students to conduct themselves, their educational pursuits, and their research in a manner conducive to such an environment. This

commitment includes honesty in such tasks as taking examinations, writing papers, theses, and dissertations; recording research data; submitting proposals for external funding; and publishing the results of all research. The ethical conduct of all members of the Cleveland State University community ensures the honor of the University and the trust of those within this academic community. The Graduate Dean is responsible for administering the University's Policy for Responding to Allegations of Academic Research Misconduct that was revised and approved by Cleveland State University's Board of Trustees on May 7, 2003, as well as the University's Policy for Managing Conflicts of Interest, which was approved by the Cleveland State University Board of Trustees on February 12, 1997.

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Research Involving Human Subjects

Students planning to conduct research involving human subjects must submit a proposal to the Institutional Review Board (IRB) prior to project commencement through the IRB Coordinator at the Office of Sponsored Programs and Research (OSPR). The proposal must include, at a minimum, an application for project approval, a project description, and an informed consent statement. Proposal submission instructions, a proposal requirement checklist, and an application for project approval can be obtained from the OSPR in the Keith Building, Room 1150, or via the Internet at www.csuohio.edu/uored/forms. Proposals should be submitted as early as possible in order to allow sufficient time for review and to avoid a schedule delay, should revisions be requested by the IRB. Cleveland State University will not accept any research projects that have failed to receive approval from the IRB in fulfillment of degree requirements.

Cleveland State University human subjects policy requires that all research involving human subjects be submitted in proposal format to the IRB for review in accordance with federal regulations (45 CFR 46.101(c)(d)), which authorize the IRB to exercise jurisdiction over all human subjects research. The IRB will determine whether proposed research is exempt from further review, requires full Board review, or is appropriate for expedited review under the applicable regulations and institutional policies. Research investigators are not authorized, at any time, to independently determine that proposed research is exempt from IRB consideration and oversight. The IRB reserves the right to render a final determination, and research investigators are responsible for complying with all IRB decisions, conditions, and requirements.

Applicable federal regulations governing the IRB review and approval process are available via the Internet, including:

Title 45, Code of Federal Regulations, Part 46

www.nih.gov/grants/oprr/humansubjects/45cfr46.htm

The Belmont Report, Ethical Principles and Guidelines for the Protection of Human Subjects of Research

www.nih.gov/grants/oprr/humansubjects/guidance/belmont.htm

Questions concerning the IRB review and approval process should be directed to the OSPR/IRB staff at (216) 687-3630.

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College of Graduate Studies

The College of Graduate Studies is located on the 11th floor of the Keith Building, which is on the corner of East 17th Street and Euclid Avenue; telephone (216) 687-9370. At this location graduate students can obtain assistance with petitions, graduate assistantship contracts, transfer

credit requests, transient applications, and thesis/dissertation format instructions and approvals.

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Office of Graduate Admissions

The Office of [Graduate Admissions](#) maintains a central admissions file system for domestic graduate applicants for all graduate degree, certificate, and licensure, and non-degree applicants. As admission materials are received by the office, photocopies of the documents ([application form](#), transcripts, letters of recommendation, tests scores, and related materials) are forwarded to the appropriate Graduate Program Director, who forms a departmental file for the applicant. Once the department file is decision-ready, the Program Director submits an admission recommendation to the Office of [Graduate Admissions](#). The Graduate Admissions Director transmits the admission action and supporting materials to the applicant. Applicants are encouraged to contact the Office of [Graduate Admissions](#) and their Graduate Program Director regarding the status of their application for graduate admission.

The Office of [Graduate Admissions](#) is located in Rhodes Tower West, Room 204; telephone (216) 687-5599. At this location, graduate students may obtain the [Graduate Catalog](#), information about admission examinations, and assistance with admissions.

International admissions: Any individual who is on a non-immigrant visa, or who will be applying for a non-immigrant visa (student visa), and is interested in enrolling in a graduate degree, certificate, or licensure program must apply for admission through the Center for International Services and Programs ([CISP](#)). [CISP](#) is located in Room 302 of University Center; telephone (216) 687-3910 or fax (216) 687-3965. [CISP](#) also provides visa application information. Students who are permanent residents must apply through the Office of [Graduate Admissions](#).

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Course Numbers and Codes

The courses offered in the various graduate programs are listed in this Catalog. Graduate courses are numbered 500-899, and are coded as follows:

1. Course number
2. Course title
3. Parenthesized numerals indicate respectively the classroom hours, the laboratory hours, and the number of credits assigned to the course, e.g., (4-0-4) would indicate four classroom hours per week, no laboratory, and four credit hours.

Courses numbered 500-599 are master's-level courses, but are open to selected Cleveland State University graduating seniors. See the "Under-graduate Students Taking Graduate Courses" section in this Catalog. Courses 600-699 are master's-level courses and are not open to under-graduate students. Courses numbered 700-899 are doctoral-level courses. Graduate certificate, licensure, or master's-level students may not register for 800-level courses.

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Graduate Catalog 2004-2006

Admission to the College of Graduate Studies (See Addenda)

Degree Admission

Individuals with a baccalaureate degree from a college or university with full academic accreditation and who present satisfactory evidence of the ability to pursue graduate study can be considered for admission. A baccalaureate degree earned outside the United States must be equivalent to a four-year United States degree. International student applicants should consult the admission requirements section for “[International Students](#)” in this Catalog for information on application procedures.

Applicants may be considered for regular degree admission if they meet one or more of the following conditions:

1. The individual has a grade-point average for the bachelor's degree of at least 2.75 (A = 4.0), with a higher average in the major field. Some graduate programs require a higher GPA. Consult individual program admission requirements in this Catalog.
2. The applicant scores at the 50th percentile or above on average across the areas of a standardized admission examination.
3. The person has completed 12 or more graduate credit hours at Cleveland State University as a non-degree graduate student, and has a grade-point average of 3.00 or above. Please note that some programs require higher grade-point averages for admission (see program descriptions).

The institution from which the student received the bachelor's degree determines a student's undergraduate grade-point average. For those with post- baccalaureate studies, both undergraduate and graduate grade-point averages are considered in determining [eligibility](#) for admission.

Endorsement of the graduate program is necessary for admission to a graduate degree, certificate, or licensure program. The Office of [Graduate Admissions](#) final-izes acceptance of an applicant for admission after the recommendation for admission by the appropriate graduate committee.

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Admission to Multiple Master's Degree Programs

Individuals may apply for admission to pursue simultaneously two master's degree programs. Applicants must meet [College of Graduate Studies](#) admission requirements, and the admission requirements of each degree program.

Dual program students have six years concurrently to complete the two degree programs. Extensions of the six-year limit for either degree via petition requires the approval of the involved graduate program committee(s). With the approval of each program, dual degree students may apply up to a maximum of 10 graduate credits taken to meet requirements for one program, to also meet degree requirements for the second program. The 10 dual-counted credits do not need to be for the same courses. Dual-counted courses must carry a grade of B or above.

Dual-master's students who wish to withdraw from one of their degree programs must notify, in writing, both involved Graduate Program Directors and the Graduate Dean's Office.

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Admission Examinations

Many graduate programs require a standardized admission examination (e.g., [GRE](#), [GMAT](#), Miller Analogies Test). Consult individual program descriptions in this Catalog for specific admission examination requirements. In addition, the [College of Graduate Studies](#) requires that official results of a standardized admission examination be submitted to the Graduate Admissions Office if the applicant:

1. Has an undergraduate grade-point average of less than 2.75 or a [GPA](#) below the minimum [GPA](#) required by the academic program for graduate admission,
2. Has a graduate grade-point average of less than 3.00, if prior graduate work has been taken, or
3. If the individual's undergraduate degree was awarded six or more years prior to the application date.

A graduate program director can recommend to the [College of Graduate Studies](#) that the admission examination requirement be waived for an individual who:

1. Earned the baccalaureate degree six or more years prior to application, but who has an undergraduate grade-point average of 3.00 or above, or
2. Has completed 12 or more graduate credits at Cleveland State University as a non-degree, certificate, or licensure student, and has a graduate grade-point average of 3.00 or above.

Where an admission examination is required by the [College of Graduate Studies](#), applicants must score on average at the 50th percentile or above across the sections of the examination to qualify for degree, certificate, or licensure admission. Importantly, some graduate programs require higher admission examination scores to qualify for admission. All applicants should consult individual program descriptions in this Catalog for specific admission examination

requirements. In addition, international applicants should consult the admission examination requirement table, which appears on page 31 of this Catalog.

[Only examination results received directly from the appropriate testing service, which are not more than six years old at the point of application, are considered official and valid.](#) Admission examination information is available from the Office of Graduate Admissions, Rhodes Tower West, Room 204, and the University Testing Center, University Center, Room 253B.

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Admission Procedures for Graduate Degree Applicants (See Addenda - August 26, 2005)

To complete admission procedures, graduate degree applicants must submit the following:

1. Application: A completed application ([paper or online application form](#)), official transcripts, test scores, letters of recommendation, and any other supplemental materials must be submitted not less than six weeks prior to the term of desired entrance. Consult the admission requirements in individual program descriptions in this Catalog for further information.

To facilitate the admission process, it is strongly recommended that applicants use the [online application system](#). ([Click here to apply online now.](#)) A [paper application form](#) may be downloaded from www.csuohio.edu/gradcollege/ and also is enclosed in the back of this Catalog. The processing time for paper application forms is longer than processing time for online applications. For a listing of programs with earlier application deadlines, consult the [chart on page 29](#).

2. Official Transcripts: (See Addenda - August 26, 2005) At the time of application, request that every college or university previously attended send one official transcript to the Office of Graduate Admissions (the Graduate Admissions Office will obtain official Cleveland State University transcripts). For applicants whose baccalaureate (or higher) degree is not yet awarded, a second official transcript with the degree posted also must be submitted to the Graduate Admissions Office before an admitted student will be permitted to register for classes. Transcripts must be received in the Graduate Admissions Office directly from the originating institutions.

3. Letters of Recommendation: Not required by all programs. Applicants should consult program descriptions. Where required, provide recommendation forms (download from www.csuohio.edu/gradcollege/forms.htm also enclosed in the back of this Catalog) to individuals who are recommending the student. Normally, at least one of the recommendations should be from a college professor familiar with the applicant's academic work.

Applicants to the [Doctor of Business Administration \(D.B.A.\)](#) program and the [Master of Social Work \(M.S.W.\)](#) program, and those pursuing initial licensure in Curriculum and Instruction—Urban Secondary Teaching must submit three letters of recommendation. Most other programs require two letters of recommendation.

The following master's degree programs do not require letters of recommendation:

- Accountancy (M.Acc.)
- Business Administration (M.B.A.)
- Computer and Information Science (M.C.I.S.)
- Education (M.Ed.) (except Counseling programs)
- Labor Relations and Human Resources (M.L.R.H.R.)
- Mathematics (M.A. and M.S.)
- Mechanical Engineering (M.S.)

4. Official Test Scores: Submit results of the appropriate admission examination as required by the College of Graduate Studies and/or the graduate degree program. Examination results over six years old at the time of application are not considered valid, and will not be accepted. Only official test scores received directly from the testing service will be accepted.

(See Addenda - August 26, 2005)

5. Application Fee: Submit payment for the required, non-refundable \$30 Graduate Application Fee. The Master of Occupational Therapy and Master of Physical Therapy programs have a \$55 application fee. Admission decisions will not be rendered until the fee is paid.

No application fee is required of applicants who have paid an application fee earlier for admission as a graduate degree, certificate, licensure, or non-degree student.

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Graduate Admission Application Deadlines (See Addenda - March 15, 2005)

In general, the Application for Graduate Admission to degree, certificate, and licensure programs, and all supporting materials (e.g., official transcripts, test scores, letters of recommendation), should be on file in the Office of Graduate Admissions at least six weeks prior to the start of the academic term of desired admission.

Intended Enrollment	2004-2005 Academic Year		2005-2006 Academic Year	
	Application Deadline	Classes Start	Application Deadline	Classes Start
Fall	July 19, 2004	August 28, 2004	July 18, 2005	August 27, 2005
Spring	December 6, 2004	January 15, 2005	December 5, 2005	January 14, 2006
Summer	April 11, 2005	May 21, 2005	April 10, 2006	May 20, 2006

For non-degree graduate admission, the application deadline is ten business days prior to the start of the term. Non-degree applicants are encouraged to apply well in advance of the deadline to avoid possible delays.

Programs with Earlier Application Deadlines

Program	Deadline	(Completed files)	Comments
Accelerated MBA		June 1 & November 1 respectively	For fall and spring admission
Chemistry (PhD., MS)		January 15	
Computer and Information Science (MCIS)		March 15 & May 15	Deadline for International applicants
		Only for summer and fall respectively.	
Doctor of Business Administration (DBA.)		February 1 semester only	Students admitted fall
Executive MBA		June 15 semester only	Students admitted fall
Nursing		March 1	Consult Nursing Chapter.
Occupational Therapy (MOT)		March 15	For summer admission
Physical Therapy (MPT)		November 1 semester only	Students admitted spring
Psychology:			
Clinical/Counseling Psychology		February 15 semester only	Students admitted fall
Consumer/Industrial Research		March 15 semester only	Students admitted fall
Diversity Management		May 31 semester only	Students admitted fall
Experimental Research		March 1 semester only	Students admitted fall
Psychology Specialist (Psy.S.)		February 10 semester only	Students admitted fall
Public Health (MPH)		January 15 semester only	Students admitted fall
Social Work (MSW)		February 28 semester only	Students admitted fall
Speech Language Pathology		March 1 semester only	Students admitted fall
Urban Education (Ph.D.)		February 6 semester only	Students admitted fall
Urban Studies and Public Affairs (Ph.D.)		January 15 semester only	Students admitted fall

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Submission of Materials

Graduate degree-seeking applicants who are U.S. citizens and permanent residents should submit all application materials, and a check or money order drawn on a U.S. bank for the graduate application fee, directly to:

Office of Graduate Admissions
Rhodes Tower West, Room 204
Cleveland State University

2121 Euclid Avenue RTW 204
Cleveland, Ohio
44115-2214

Telephone: (216) 687-5599
Toll Free: 1-888-CSU-OHIO (ask for the [Graduate Admissions Office](#))
Fax: (216) 687-5400
E-mail: graduate.admission@csuohio.edu

International degree, certificate, or licensure applicants should consult the “International Students” section of this Catalog for instructions on submitting application materials.

The [Graduate Admissions Office](#) maintains a central admissions system for all domestic (U.S. citizens and Permanent Residents of the U.S.) graduate degree applicants. As admission materials are received in the [Graduate Admissions Office](#), copies of the documents ([application form](#), official transcripts, letters of recommendation, official score reports, and related materials) are forwarded to the appropriate graduate program director, who forms a departmental file for the applicant. Once the departmental file is decision-ready, the graduate program director submits an admission recommendation to the [Graduate Admissions Office](#). The Director of [Graduate Admissions](#) transmits the admission action and supporting materials to the applicant.

Applicants are encouraged to contact the [Graduate Admissions Office](#) [E-mail: graduate.admissions@csuohio.edu, Telephone (216) 687-5599] and their Graduate Program Director to check on the status of their applications. Contact information for graduate program directors may be found at the beginning of each program description in this Catalog.

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Graduate Certificate and Licensure Admission

1. An individual with a baccalaureate degree and a grade-point average of 2.75 or higher from a college or university with full academic [accreditation](#) can be considered for graduate certificate or licensure admission. A baccalaureate degree earned outside the U.S. must be equivalent to a four-year U.S. degree. International student applicants should consult the Admission Requirements section for “[International Students](#)” in this Catalog for information on application procedures. Official transcripts from all colleges and universities previously attended must be submitted by the originating institutions to the Cleveland State Office of [Graduate Admissions](#). The [Graduate Admissions Office](#) will obtain copies of official Cleveland State University transcripts.
2. Applicants must submit the results of a standardized graduate admission examination (e.g., [GRE](#), [MAT](#), [GMAT](#), [LSAT](#)), and score at the 50th percentile or above. Only official test scores received directly from the testing service, and which are not more than six years old at the time of application, are considered official and valid. The applicant may be exempt from the admission examination requirement by the program if:

- a. The baccalaureate degree is less than six years old at the time of application AND the undergraduate cumulative grade-point average was at least 2.75; OR
 - b. The baccalaureate degree is more than six years old at the time of application AND the undergraduate cumulative grade-point average was at least 3.00; OR
 - c. The student has completed 12 or more semester hours of Cleveland State University graduate course work AND received a grade of B or better in each course; OR
 - d. The student has successfully completed a master's or doctoral degree from an accredited U.S. institution; or
 - e. For Graduate Certificate applicants only: The student provides documentation of requisite professional experience and professional competency in the area.
3. A graduate admission application fee of \$30 is required unless the applicant previously has paid the fee as a graduate applicant. The fee is not refundable.

Acceptance of a graduate certificate or graduate licensure applicant for admission is finalized by the Office of [Graduate Admissions](#) after a recommendation for admission by the appropriate departmental or college graduate committee is received in the [Graduate Admissions Office](#).

4. Upon admission, graduate certificate and licensure students must meet with an advisor to prepare a program of study.

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Submission of Materials

All application materials for graduate certificate and graduate licensure programs for U.S. citizens and Permanent Residents of the U.S. must be submitted directly to:

Office of [Graduate Admissions](#)
Rhodes Tower West, Room 204
Cleveland State University
2121 Euclid Avenue RTW 204
Cleveland, Ohio
44115-2214

Telephone: (216) 687-5599
Toll Free: 1-888-CSU-OHIO (ask for the [Graduate Admissions Office](#))
Fax: (216) 687-5400

Application materials for [international students](#) should be submitted to the Center for International Services and Programs (see "[International Students](#)" section of this Catalog).

The [Graduate Admissions](#) Office maintains a central admissions system for Cleveland State University graduate domestic (U.S. citizens and Permanent Residents of the U.S.) certificate and graduate licensure applicants. As admission materials are received in the [Graduate Admissions](#) Office, copies of the documents [[application form](#), official transcripts, letters of recommendation and official score reports (as required), and related materials] are forwarded to the appropriate graduate program director, who forms a departmental file for the applicant. Once the departmental file is decision-ready, the graduate program director submits an admission recommendation to the Graduate Admissions Office. The Graduate Admissions Director transmits the admission action and supporting materials to the applicant.

Applicants are encouraged to call the Graduate Admissions Office regarding the status of their application.

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Admission Examination Requirements for International Students

Graduate Degree Program Examination Score Requirement

Accountancy	GMAT description	See program
Biology (M.S. and Ph.D.)	GRE (Biology or Biochemistry); required*	General plus Subject No minimum
Business Administration (M.B.A. and D.B.A.)	GMAT	See program description
Chemistry (M.S. and Ph.D.)	GRE required*	No minimum
Communication	GRE or MAT General, GRE; 50th percentile, MAT	50th percentile
Computer and Information Science	GRE or GMAT description	See program

Economics	GRE required*	No minimum
<hr/>		
Education: M.Ed.	GRE or MAT General, GRE; 50th percentile, MAT	50th percentile
Ph.D.	GRE description	See program
<hr/>		
Engineering: Doctoral Program (D.Eng.)	GRE Quantitative	80th percentile
Chemical Engineering (M.S.)	GRE Quantitative	80th percentile
Civil Engineering (M.S.)	GRE Quantitative	80th percentile
Electrical Engineering (M.S.)	GRE Quantitative	80th percentile
Engineering Mechanics (M.S.)	GRE Quantitative	80th percentile
Environmental Engineering (M.S.)	GRE Quantitative	80th percentile
Industrial Engineering (M.S.)	GRE description	See program
Mechanical Engineering (M.S.)	GRE Quantitative	80th percentile
<hr/>		
English		No examination requirement; writing sample required
<hr/>		
Environmental Sciences (M.S.)	GRE	50th percentile General

Environmental Studies (M.A.)	GRE	50th percentile General
Health Sciences	GRE	50th percentile General
History	GRE required, and Subject recommended	50th percentile General
Labor Relations and Human Resources	GRE or GMAT	See program description
Music	GRE Verbal only	50th percentile
Nursing	GRE or MAT description	See program
Occupational Therapy	GRE	50th percentile General
Philosophy	GRE but not required	General recommended
Physical Therapy	GRE description	See program
Physics	GRE General and Subject	50th percentile
Psychology: Clinical Counseling	GRE required*	No minimum
Consumer Industrial	GRE	No minimum required*
Diversity Management	GRE	General and Subject if undergraduate GPA below 2.75
Experimental Research	GRE	Verbal and

	Quantitative Must Total 1,000 or more points	
School Psychology Specialist (Psy.S.) description		See program
Public Administration	GRE	50th percentile General
Public Health	GRE description	See program
Social Work		No examination requirement
Sociology		No examination requirement
Spanish	GRE description	See program
Speech Pathology	GRE or MAT	50th percentile General
Urban Planning, Design, and Development	GRE	50th percentile General
Urban Studies: M.S.	GRE or MAT	No minimum required*
Ph.D.	GRE of 1050 on Quantitative and Verbal	Combined score

*The program requires the admission examination noted, however, no specific minimum score is required to be considered for admission.

Exam key:

GMAT Graduate Management Admissions Test

GRE Graduate Record Examination

MAT Miller Analogies Test

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International Students (See Addenda - September 27, 2004 & July 15, 2005)

An international student is anyone who holds a visa while enrolled at Cleveland State University. These students must submit applications for graduate study to the Center for International Services and Programs, University Center, Room 302.

A permanent resident is anyone who has been granted permanent resident status in the U.S. or refugee status.

Permanent residents should apply through the Graduate Admissions Office, Rhodes Tower West, Room 204.

Admission Requirements for International Students and Permanent Residents

Academic: Baccalaureate degrees earned outside the U.S. must be equivalent to baccalaureate degrees earned in the U.S.

Examinations: In general, a standardized admissions examination (e.g., GRE, GMAT, Miller Analogies Test) is required for any applicant who does not hold a bachelor's degree or higher from a U.S. institution. See the Admission Examination Requirements chart on page 31 in this Catalog for individual program requirements.

Language: The University requires all non-native English speakers to demonstrate proof of English-language proficiency. Any individual who has earned a bachelor's or higher degree from a U.S. institution where the primary language of instruction was English is not required to take an English-language proficiency examination.

The options and minimum score requirements are as follows:

1. TOEFL (Test of English as a Foreign Language) score of 525 in the paper-based test (197 for the computer-based TOEFL); OR (See Addenda - September 27, 2004 & July 15, 2005)
2. Pass the IELTS test (International English Language Testing System) with a minimum score of 6.0; OR
3. Pass the MELAB (Michigan English Language Assessment Battery) with a minimum score of 85. (The examination must be taken at the Cleveland State University Testing Center.); OR
4. Achieve a score of C (Pass) or better on the A and O levels of the General Certificate of Education (GCE or GCSE) Test; OR
5. Achieve a score of C (Pass) or better on the Cambridge Certificate of Advanced English (CAE); OR
6. Completion of English-language studies (Level 112) from any of the ELS Language Centers; OR

7. Completion of course work at a C or better level for the equivalent of the Cleveland State University freshman English requirements at a U.S. regionally accredited college or university. (See Addenda - September 27, 2004)

Submission of Materials

International applicants must submit:

1. Application form,
2. All official original-language transcripts,
3. Official translation of non-English- language transcripts,
4. Proof of all degrees earned (diplomas),
5. TOEFL or alternative test score report,
6. Appropriate standardized admission examination,
7. Financial verification documentation, and
8. Application fee (non-refundable).

Submit all documents to:

International Graduate Admissions

Center for International Services and Programs
Cleveland State University University Center, Room 302
2121 Euclid Avenue UC302
Cleveland, Ohio 44115-2407 USA

Phone: (216) 687-3910

FAX: (216) 687-3965

E-mail: cispcsu@csuohio.edu

www.csuohio.edu/internat/admiss.html

The Center for International Services and Programs maintains admission files for all international graduate degree applicants. Once an admission file is decision ready, the file is reviewed for degree equivalency and a grade-point average conversion is calculated. The completed file is then forwarded to the appropriate graduate program director for an admission decision. The graduate program director submits an admission recommendation to the International Graduate Admissions Office. The International Office sends a decision letter and supporting materials to the applicant.

Application Deadlines for International Students

Fall Semester—May 15

Spring Semester—November 1

Summer Term—March 15

Financial Requirements: All inter-national students must supply to the Center for International Services and Programs proof of adequate financial resources before I-20 (F-1) or IAP-66 (J-1) documents can be issued to obtain the appropriate visa to enter the UnitedStates to study. For further details, contact the Center for International Services and Programs.

The only **financial aid** for which **international students** may qualify are **graduateassistantships** and **graduate tuition**. Students should contact their academic departments directly for further details.

Health and Medical Requirements:International students attending Cleveland State University are required to present results of a tuberculosis test before being permitted to register at the University. All **international students** on an F-1 or J-1 visa must show proof of adequate health insurance before they will be permitted to register. For further details, please contact the Center for International Services and Programs at (216) 687-3910.

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Degree, Certificate, and Graduate Licensure Admission Classifications (See Addenda - August 26, 2005)

The academic status of a graduate degree-seeking, certificate, or licensure applicant is determined after a review of admission credentials. Graduate Program Committees, in concurrence with the Office of **Graduate Admissions**, may recommend admission of applicants as Regular graduate students or as Conditional graduate students.

A Regular Graduate Student is one who has satisfied all requirements for admission to the **College of Graduate Studies** and to a departmental program, including submission of all documents (see the sections on Admission and Admission Procedures in this Catalog), or one who has been previously admitted to the University as a Conditional or a Non-Degree graduate student and has submitted all required application materials, and is in good **academic standing** (GPA 3.00 or above) at the time of application to Regular degree-seeking, certificate, or licensure status.

A Conditional Graduate Student (See Addenda - August 26, 2005) is one who has failed to submit all necessary application materials, but who does meet the University's minimum grade-point and/or admission test score requirements. An official transcriptshowing receipt of a baccalaureate degree must be provided to qualify for Conditional admission. **The student admitted conditionally is not permitted to register for classes until outstanding materials are received in the Graduate Admissions Office.** Upon receipt of outstanding admission credentials, the graduate program concerned will consider the student for Regular graduate student status.

Upon acceptance for graduate study on a Regular or Conditional basis, the graduate student should confer with the

appropriate departmental advisor to plan an academic program of study. Subsequent changes to the plan of study should be made only with advisor approval.

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Transient Student Admission

There are two categories of transient students: 1) those enrolled in a graduate program at another college or university who wish to take a limited amount of graduate work at Cleveland State University; and 2) those enrolled in a graduate degree program at Cleveland State University who wish to take a limited amount of graduate work at another institution. At Cleveland State University, a transient student is subject to the same [academic regulations](#) that govern Cleveland State University degree-seeking students.

1. A student from outside Cleveland State University seeking transient status at Cleveland State University must complete the home institution's Graduate Transient Application form and receive approval from the home institution to enroll for specified courses. The approval form and a check for \$15 (non-refundable) pay-able to Cleveland State University should be forwarded to the Cleveland State University [Graduate Admissions Office](#). Admission as a transient student is valid for one semester only; a new application (no additional fee) is required prior to registration if the student wishes this status to be extended for another academic term.
2. A Cleveland State University student who wishes to attend another institution is required to consult with his or her program advisor and/or department chair and complete a Cleveland State University Graduate Student Transient Approval form. Only students who are in good [academic standing](#) in their degree programs qualify for transient student status. Forms may be downloaded at www.csuohio.edu/gradcollege and also are available from the [College of Graduate Studies](#), [Keith Building](#), Room 1150, and the Office of [Graduate Admissions](#), Rhodes Tower West, Room 204.

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Non-Degree Admission

The University provides an opportunity for individuals who hold a baccalaureate or higher degree to enroll in graduate courses without admittance to a graduate degree, certificate, or licensure program. Non-Degree status is designed for those who want to take graduate courses for professional growth and/or personal enrichment, or who wish to take a limited amount of course work to explore the possibility of later entering a graduate degree, certificate, or licensure program. (Note: Students with graduate Non-Degree status are not permitted to enroll in Cleveland State University graduate certificate or licensure programs.)

Admission Requirements for Non-Degree Students

1. Receipt of an earned baccalaureate degree from a fully accredited academic college or university. Baccalaureate degrees earned outside of the U.S. must be equivalent to baccalaureate degrees earned in the United States. International applicants and Permanent Residents of the U.S. who received their undergraduate (and graduate) degrees outside of the

United States must submit official transcripts and diplomas for evaluation to be considered for Non-Degree graduate admission.

2. The University requires all non-native English speakers to demonstrate proof of English-language proficiency. Any individual who has earned a bachelor's or higher degree from a U.S. institution where the primary language of instruction was English is not required to take an English-language proficiency examination. English-language proficiency test options and score requirements appear in the "[International Students](#)" section of this Catalog.
3. Submit a completed [application form](#) to the Graduate Admissions Office. Applicants are strongly advised to submit an online application to facilitate processing their requests for Non-Degree admission. Applicants submitting paper [application forms](#) must allow additional processing time for their Non-Degree requests.
4. There is a non-refundable \$30 Graduate Application fee for Non-Degree admission. However, if the Non-Degree student later requests admission to a graduate degree, certificate, or licensure program, no additional application fee is required. The student must submit an updated application to the degree, certificate, or licensure program and all required admission materials to the [Graduate Admissions Office](#) before an admission decision will be rendered.

[Application Deadline](#)

For Non-Degree graduate admission, the application deadline is 10 business days prior to the start of the term. Non-Degree applicants are encouraged to apply well in advance of the deadline to avoid possible delays.

[Submitting Non-Degree Application Materials](#)

Office of Graduate Admissions
Rhodes Tower West, Room 204
Cleveland State University
2121 Euclid Avenue RTW 204
Cleveland, Ohio 44115-2214

Telephone (216) 687-5599
Fax (216) 687-5400
E-mail: graduate.admissions@csuohio.edu
www.csuohio.edu/gradcollege

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College of Graduate Studies

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Addenda

Graduate Catalog 2004-2006

Academic Regulations (See Addenda)

The University reserves the right to amend its rules and regulations within the limits commonly accepted by colleges and universities. Students must keep themselves informed of amendments.

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Credit Hour Load

In order to qualify as full-time graduate students, individuals must register for at least eight graduate credit hours. For the summer term, a full-time load is six credit hours per six-to-eight-week session with a maximum of eight credit hours. All students who wish to take more than 16 credit hours may do so only by completing an overload request approved by their program advisors, their Graduate Program Directors, and the Graduate Dean.

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Grades (See Addenda - October 18, 2004 & February 09, 2005)

The grades for graduate courses are as follows:

A Superior graduate attainment. Valued at 4.0 quality points.

A- Valued at 3.7 quality points.

B+ Valued at 3.3 quality points.

B Acceptable graduate attainment. Valued at 3.0 quality points.

B- Attainment below graduate standards. Valued at 2.7 quality points.

C Attainment below graduate standards. Valued at 2.0 quality points.

F Failure. Valued at zero quality points.

U Unsatisfactory performance by a graduate student in selected remedial undergraduate Mathematics courses. See the section on Remedial Courses below.

I Incomplete. A non-credit grade indicating course work has not been completed. An I grade must be removed within a maximum of one semester (by the last day of instruction of the second semester) of the term received or it converts to a grade of F, whether or not the student enrolls. An instructor may require course work to be completed earlier. Incomplete deadline dates are noted in the Course Schedule. (See Addenda - October 18, 2004)

T Temporary non-credit grade. The T grade can be given only in courses for which the offering department and the Graduate Dean have authorized its use. It is given for specialized training, independent study, or thesis/ dissertation research that is progressing satisfactorily. Work that is given a T grade must be validated by a subsequent grade to count for graduate credit. T are not included in the

calculation of the [grade-point](#) average.

S May be used only for courses authorized by the Graduate Dean. S grades indicate satisfactory completion of a course at the grade level of B or better. Although credit is granted for all courses with an S grade, the S grade is not included in the calculation of the [grade-point](#) average.

NA No Action. A neutral grade that does not factor into the calculation of the student's [grade-point](#) average or hours attempted. To be used only when a regular letter grade, an I, or an X grade is not appropriate. (See [Addenda - October 18, 2004](#))

N/C No Credit [audit](#) grade for graduate courses. Not included in the calculation of the [grade-point](#) average.

NS Progress that is Not Satisfactory in a thesis, dissertation, or alternate exit project. This grade may be given only in courses authorized by the Graduate Dean. NS is a permanent grade designation. No credit is given for this grade, and it is not included in the calculation of [grade-point](#) average.

W Authorized [Withdrawal](#). A grade of W is recorded when a student withdraws from a (course using the appropriate form and following the procedures outlined in the [Withdrawal Policy](#) section below) during the period extending from the beginning of the third week of the semester to the final date for [withdrawal](#).

X A grade assigned by an instructor when a student has not completed all assignments for reasons that cannot be determined. If a grade change is not submitted by the end of the following semester, the X becomes an F. (See [Addenda - October 18, 2004](#))

Note: There is no grade of D for graduate (500 to 899) courses. However, a D is a possible grade for graduate students enrolled in courses numbered 100 through 499.

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Withdrawal Policy

During the academic year a student may withdraw from a course through the end of the tenth week of the semester. Consult the [Course Schedule](#) for [withdrawal](#) deadlines.

After the final date for [withdrawal](#), a student may officially withdraw from a course only by means of a petition approved by the College of Graduate Studies [Petitions](#) Committee (see the Exceptions and Petitions section of this Catalog).

Please note that the University Graduate Council has determined that poor academic performance on a midterm examination or in other course requirements does not constitute sufficient grounds for granting a student a late [withdrawal](#) from a course.

[Withdrawal](#) from a course without approval, as indicated above, constitutes a failure, and a grade of F will be recorded on the student's record.

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Grade-Point Average

The [academic standing](#) of a graduate student is expressed as a cumulative [grade-point](#) average. This is determined at the end of each semester by dividing the total quality points (the summation of the credit hours multiplied by the point value for each class) by the total credit hours attempted in courses in which the student has received a grade of A, A-, B+, B, B-, C, or F. All [grade-point](#) averages are carried to two decimal places unrounded. After admission to a graduate program and registration as a graduate student, grades for all 400- to 800-level courses taken are computed into a student's [grade-point](#) average.

Academic Standing: To be considered in Good Academic Standing, a graduate student must maintain a graduate grade-point average of 3.00 or above.

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Repeating a Course

Repeating a graduate course does not eliminate an earlier recorded grade on the student's transcript. With the exception of courses designed to have variable content from semester to semester, repeating a graduate course does not affect the number of credit hours earned by a student.

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Remedial Courses (See Addenda - February 09, 2005)

The remedial Mathematics courses listed below are graded on an S/U basis. Graduate students do not receive credit toward meeting degree requirements for these courses when passed with an S grade. Grades of U do not influence a graduate student's grade-point average, nor are U grades considered in the University's academic warning and dismissal regulations for graduate students.

MTH 087

MTH 088

See the most recent issue of the [Undergraduate Catalog](#) for descriptions of these courses.

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Change of Grade

Once the Office of the University Registrar receives a letter grade, a faculty member may change it only because of an error in computation, or due to a recording error. A change-of-grade request for a graduate course requires the approval of the Graduate Dean.

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Audit of Courses

The grade of No Credit (N/C) is given when a student audits a course. A student who audits a course pays regular tuition but does not receive a letter grade or credit for the course. Only an admitted student may audit a course.

An Authorization to Audit form must be presented when registering. It must include the signature of the student's program advisor. A student may not change his or her grading status in a course from audit to a regular grade basis, or vice versa, after the first week of classes.

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Credit by Examination

A student may request to receive credit by examination for a course with departmental approval and with the permission of the Graduate Dean. The grading of such examinations is conducted by a faculty member or committee from the department in which the student takes the examination. Performance must be at the B level or better to receive credit by examination. The student must pay a \$20 fee for each examination. Graduate Credit by Examination forms

are available in the College of Graduate Studies Office (Keith Building, Room 1150) and the Graduate Admissions Office (Rhodes Tower West, Room 204).

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Cross Registration

In June of 1998, Cleveland State University, The University of Akron, Kent State University, and Youngstown State University approved an agreement that allows graduate degree-seeking students to cross register for graduate courses at these Northeast Ohio universities. Cross registration is not permitted for certificate, licensure, or non-degree Cleveland State University graduate students.

In order to cross register for a course, a student must be in good standing, with a grade-point average higher than 3.00 and be within the time limits for completion of the degree program.

Cleveland State University students must use the Approval for Acceptance of Graduate Course Work at Northeast Ohio Public Universities form (download at www.csuohio.edu/gradcollege) to apply to take graduate-level courses at one of the other universities in the program. The student takes the course at the host university by registering for a Cleveland State University Special Topics course with a title and course number corresponding to the course at the host institution [e.g., a special topics listing might be SOC 685 KSU Multi-variate Time-Series Analysis (4-0-4)].

A student must receive approval at Cleveland State University for cross registration from the department chair, the Graduate Dean, and the student's academic advisor, who determines whether or not the course work is appropriate to the student's degree program. The student must demonstrate that the course at the host institution is necessary for his or her program of study and that the course is not available at Cleveland State University at a reasonable stage in the student's degree program. The student also must receive approval at the host institution from the course instructor, department chair, and the Graduate Dean.

Students may not cross register for thesis, research, and dissertation credits.

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Transfer Credit

Transfer credit is subject to departmental regulations and is not permitted without the approval of the Graduate Program Committee concerned. Departments may limit transfer credit to less than the maximum permitted by the College of Graduate Studies.

1. All transfer credit must be earned at an accredited graduate college or university and not have been utilized to fulfill a requirement for any other degree.
2. Transfer credit cannot exceed nine graduate hours for master's degree students, and one-third of the total graduate hours required for certificate, licensure, and doctoral degree students. Requests for an extension of the limit on transfer credit must be approved by the department/program graduate committee. Such requests do not require review and approval by the College of Graduate Studies Petitions Committee.
3. All credits requested in transfer must carry a letter grade of A, A-, B+, or B in graduate courses. No S/F graded courses may be transferred. Petitions are not considered for an exemption from this requirement.
4. All transfer credit must be within the six-year statute of limitations on course work applicable to fulfillment of graduate degree, certificate, or licensure requirements at the time of program completion. Requests for an extension of the six-year limit on transfer credit must be approved by the departmental/program graduate committee. Such requests do not require review and approval by the College of Graduate Studies Petitions Committee.

5. Students seeking transfer credit must have Regular Graduate Student Status and be in good academic standing at both Cleveland State University and the school at which the credits were earned.

6. Students admitted to Cleveland State University must receive prior approval to take courses elsewhere as Transient Students for transfer into their programs.

7. Credit awarded in transfer is not recorded on a transcript until the student has completed 12 hours of graduate (500- to 800-level) course work at Cleveland State University and has achieved a graduate grade-point average of 3.00 or better.

Graduate Credit Transfer forms may be downloaded at www.csuohio.edu/gradcollege and also are available in the College of Graduate Studies and program offices.

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Application of Credits Toward Multiple Advanced Degrees

A student who has earned either a master's or juris doctorate degree at Cleveland State University may apply toward a subsequent advanced degree a maximum of 10 credits of graduate or law school course work earned toward the first degree under the following conditions:

1. The department granting the second degree has determined the acceptability of the credits;
2. The credits were earned with a grade of B or better; and
3. The credits were earned within the six-year statute of limitations on course work applicable to fulfillment of graduate degree requirements at the time of graduation from the second degree program.

Petitions to extend the time period to complete the second degree at Cleveland State University must receive the approval of the departmental/program graduate committee. If approved by the departmental/program graduate committee, petitions to extend the time period to complete the second degree do not require review and approval by the College of Graduate Studies Petitions Committee. However, if denied at the departmental level, requests for an extension of the time period to complete a second degree may be submitted to the College of Graduate Studies Petitions Committee for review and disposition.

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Undergraduate Courses Taken for Graduate Credit

With program approval, a registered graduate student may use a maximum of eight 400-level credits taken to meet master's degree requirements. These courses may not be offered by the department/program in which the graduate degree would be awarded. No 400-level courses taken by a student as an undergraduate may be used for graduate credit.

A graduate student may not use courses below the 400 level to meet graduate degree, certificate, or licensure requirements, although the student may take such courses for remedial purposes or to remove deficiencies.

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Undergraduate Students Taking Graduate Courses

An undergraduate student who is pursuing a baccalaureate degree at Cleveland State University may be granted permission to take one or more (maximum of nine credit hours) graduate courses, at the 500 level only, if the student meets all of the following conditions:

1. The student must be within 30 hours of graduation;
2. The student must have an overall **grade-point** average of 2.75 or better through the preceding semester;
3. The student must have a 3.00 or better **grade-point** average in the major field; and
4. The student must obtain permission from his or her advisor, the instructor of the course, and the department chair, via signature on the Undergraduate Request for Graduate Course form.

An undergraduate student who is deficient in any of the above four respects may not take a graduate course without the approval of the dean of the college in which the course is offered and the Graduate Dean.

Credit for these courses—up to a maximum of nine credits for courses where the grade received is B or above—may be applied at a later point to a graduate degree program provided that the credit was not used to satisfy baccalaureate degree requirements. Internal transfer of credit is subject to transfer credit regulations and procedures.

Post-baccalaureate students who are enrolled at the undergraduate level but are not pursuing a second bachelor's degree may not register for graduate-level classes. Post-baccalaureate students who are pursuing a second bachelor's degree at Cleveland State University may register for 500-level courses as long as the above four noted conditions are met.

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Graduate Program Transfer

An admitted and enrolled graduate student may request to transfer to another graduate degree program. The individual should meet with his or her current graduate advisor and Graduate Program Director, and the Graduate Program Director of the “new” graduate program, before submitting a Program Transfer Request Form to the **Graduate Admissions Office** (for domestic students) or the Center for International Programs and Services (for **international students**).

After consulting with his or her advisor and the two Graduate Program Directors, the student should complete this form fully and submit it. The form should be submitted at least six weeks before the desired term of transfer. Once the form is received, a copy of the student's admission file will be submitted to the Graduate Program Director of the “new” program.

Please note that the transfer is not effective until the “new” program renders a favorable decision, and the **Graduate Admissions Office** or the Center for International Services and Programs approves admission to the new program.

The Graduate Program Transfer Request Form is available at www.csuohio.edu/gradcollege/forms.htm.

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Academic Warning and Dismissal

Optional **dismissal** from, or continued participation with academic **warning** in a graduate degree, certificate, or licensure program, are recommended by the graduate committee of the program.

Optional Dismissal

If, in 400- to 800-level courses, a student receives:

- a. one grade of F, or
- b. two grades of less than B, or

c. two grades of NS,

then the individual **MUST** be reviewed by the Graduate Program Committee to determine his or her ability to continue in graduate school. If the Graduate Program Committee determines that **dismissal** is in order, this recommendation is made to the Graduate Dean for review and notification of the student.

Academic Warning

If it is determined that the student may continue in the graduate program, the Committee will notify the Graduate Dean and the student, in writing, regarding the grounds under which continuation is possible. In addition, an “Academic **Warning**” notice will be recorded on the student’s official grade report for that semester.

Mandatory Dismissal

If, in 400- to 800-level course, a student receives:

a. two F grades, or

b. accumulates a total of nine credit hours of less than B grades and has a cumulative **grade-point** average below 3.00,

then the student will be dismissed automatically from the program by the Graduate Dean.

Readmission

Normally, an academically dismissed degree, certificate, or licensure student may not be readmitted to the same program until one calendar year (12 months) has elapsed. However, an academically dismissed student may petition for early **readmission**. The student who seeks **readmission** must submit a petition to the Graduate Program Committee. The committee shall act on the petition and present its recommendations to the **College of Graduate Studies Petitions Committee**, whose decision shall be final.

An academically dismissed non-degree student must petition the **College of Graduate Studies Petitions Committee** for **readmission** consideration. Petition forms may be downloaded from the **College of Graduate Studies** web site at www.csuohio.edu/gradcollege, and also are available from the **College of Graduate Studies (Keith Building, Room 1150)** and the **Graduate Admissions Office (Rhodes Tower West, Room 204)**.

These **readmission** procedures do not apply to students who seek admission to a program other than the program from which they were academically dismissed. In these cases, the student is considered a new applicant. To initiate consideration of admission to a new program, a student must make application for admission to the new graduate program. The **Graduate Admissions Office** will forward a copy of the student’s admission file to the Program Director of the new program.

Academic Reassessment Policy

A degree-seeking graduate student enrolled in the **College of Graduate Studies** may petition for academic reassessment for prior graduate course work taken at Cleveland State University. For individuals who wish to return to the same graduate degree program, there must be a three-year absence from the University before a reassessment petition can be submitted. The absence from the University can be voluntary on the part of the student or as the result of an academic **dismissal**. For students who wish to enter a different graduate degree program, and for former non-degree, certificate, and licensure graduate students who wish to enter a graduate degree program, there must be a one-year absence from the University before a petition for academic reassessment can be submitted. **Academic reassessment** is not available to students who are

currently enrolled on a graduate certificate, licensure, or non-degree basis.

If academic reassessment is granted, all previous courses taken and grades received at Cleveland State University as a graduate student, and all transfer and transient credit granted while a graduate student at the University, will not be counted toward: 1) the number of credit hours taken and earned, 2) the cumulative [grade-point average](#), and 3) the provisions for academic [dismissal](#). All previous academic work remains on the student's graduate transcript, followed by an "Academic Reassessment" notation.

Academic reassessment [petitions](#) must have departmental/program-level support in order to be considered by the College of Graduate Studies [Petitions Committee](#). Academic reassessment [petitions](#) that do not have departmental/ program support are considered by the University Graduate Council. An academic reassessment petition may be granted only once during a student's graduate career at the University.

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Exceptions and Petitions

Students seeking exemption from program requirements and/or regulations must petition their Graduate Program Committee, which acts on such requests and informs the student, the [University Registrar](#), and the Graduate Dean of its decision. [Petitions](#) concerning University and [College of Graduate Studies](#) requirements and regulations should be initiated through the graduate program advisor and graduate committee for recommendation and are forwarded to the [Petitions Committee](#) of the [College of Graduate Studies](#) for action. Once the [College of Graduate Studies](#) committee makes a decision, the student, the program advisor, and the program director are notified and a notation is placed on the student's academic record.

Before filing a petition with the [College of Graduate Studies](#), the student should review thoroughly all applicable regulations so that the presentation is complete and accurate. The following guidelines should be followed so that [petitions](#) can be presented in a way most likely to correctly inform the [College of Graduate Studies Petitions Committee](#). This body conducts the final review of graduate [petitions](#).

When referring to a course, include the course number, title, semester taken, and the instructor's name. Any petition requesting an exemption from a course requirement, a late [withdrawal](#), an extension of an I grade, or a change in grading status must include an instructor's dated statement. The instructor's statement should include:

1. information on the student's performance in the course;
2. whether or not the student's request is supported by the instructor; and
3. the instructor's rationale for supporting, or not supporting, the petition.

All requests for action on the grounds of medical, personal, legal, or work-related difficulties, either previous or ongoing, must include written documentation of the problem and a dated and signed statement on official letterhead from the appropriate person (attorney, doctor, dentist, employer, etc.). The documentation provided must address directly how the difficulties noted had an adverse effect on the student's academic performance. Without this information/ documentation, petitions will be returned to the student without [Petitions Committee](#) action.

During the first 11 weeks of the fall and spring terms, graduate students may late register for courses with instructor and program advisor approval on the Graduate Student Late Registration/ Late Add Form. After the 11th week of the fall and spring terms late registration requests will only be considered by the Graduate College [Petitions Committee](#).

Students who have had their [course schedules](#) cancelled by the University due to non-payment of fees may reinstate their schedules through the 11th week of fall and spring terms with course instructor and graduate program director approval on the Graduate Student Enrollment

Reinstatement Request Form. After the 11th week of the fall and spring terms, until the last day of each term:

– requests to restore a cancelled schedule will only be considered by the Graduate Dean. The Dean will only consider requests where students can show demonstrable administrative error by the University was responsible for their registration being cancelled. After the last day of the term, students must petition the Graduate College Petitions Committee.

For the summer term, there are multiple sessions with different late registration and reinstatement deadlines. All deadline dates may be found on the forms required to process these requests.

Late Registration and Re-Enrollment forms are available at the Office of the University Registrar, the College of Graduate Studies, and the Graduate Admissions Office. The forms also may be downloaded from www.csuohio.edu/gradcollege/forms.htm.

Please note that the University Graduate Council has determined that poor academic performance on a midterm examination or in other course requirements does not constitute sufficient grounds for granting a student a late withdrawal from a course.

If questions arise in preparing a petition, contact the College of Graduate Studies (Keith Building, Room 1150) at (216) 687-9370.

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Thesis/Dissertation

Requirements for a thesis/dissertation as a requirement for the graduate degree are determined by the degree program. A thesis/dissertation may take any of several forms, such as a scholarly essay, research report, or a creative artistic work. The format of such presentations does not need to conform to traditional standards of style where such standards are not appropriate. However, the form and style of theses/dissertations that are more traditional research reports should follow standard manuals of style with any supplementary guides used by the various disciplines acceptable to the departmental graduate committee. A copy of the Thesis and Dissertation Format Guidelines is available at www.csuohio.edu/gradcollege/forms.htm and from the College of Graduate Studies. Students are encouraged to review the guidelines before preparing the thesis/dissertation document.

A student cannot be admitted to degree candidacy, nor register for thesis/dissertation work, until the student is a Regular Graduate Student. Doctoral and master's students must complete the Thesis/ Dissertation Proposal Approval form (download from the College of Graduate Studies web site) and obtain the required signatures prior to thesis/dissertation registration. Once a student registers for thesis/dissertation credit, he or she must register for thesis/dissertation credit each semester during the academic year (fall and spring terms) until the completion and defense of the project. (See Temporary non-credit grade under Grades.) The number of thesis/ dissertation credits required is a departmental matter; however, the student must register for a minimum of one thesis/dissertation credit each semester until the completion of the thesis/ dissertation, acceptance by the program committee, and submission for final approval to the College of Graduate Studies.

Acceptance of the thesis/dissertation requires that the signatures of the advisor and at least two other Graduate Faculty committee members appear on the document. One committee member external to the degree program must be included on all doctoral dissertation committees. The advisor and all other committee members must be voting members of the Graduate Faculty for the acceptance of the thesis/dissertation by the College of Graduate Studies.

All doctoral dissertations require a public defense announced to the University community with sufficient notice.

Once the thesis/dissertation has been approved by the committee, the student must submit the

final draft of the thesis/dissertation for format review and approval to the [College of Graduate Studies](#). The submission for format approval should take place not less than one week prior to the end of the semester in which the student plans to graduate. After approval, the student then submits the final copies (at least one professional-quality and two copies) to the [University Library](#) for binding and retention in the Archives and the Circulation Department. Prior to binding, all doctoral dissertations are forwarded to University Microfilms International for publication in Dissertation Abstracts International.

[Discontinuation of a Thesis, Dissertation, or Alternate Exit Project](#)

Should a student wish to discontinue a thesis/dissertation or alternate project after receiving one or more T grades for previous registrations, the individual may request of the [College of Graduate Studies Petitions Committee](#) that W grades replace the T grades.

Students who decide to switch from the thesis option to an alternate exit project, or vice versa, are not permitted retro-actively to change, via petition, their registration in previous thesis or project course work.

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[University Graduate Degree Requirements](#) (See [Addenda - March 09, 2005](#))

1. A student has a period of six years from date of entry into the [College of Graduate Studies](#) to complete requirements for a master's degree. Only course work, including transfer credit and credit by examination, completed within the immediate past six-year period will apply toward the master's degree. A student entering a doctoral program, either having received the master's or professional degree from another institution or having interrupted his or her studies at Cleveland State University upon receipt of the master's degree, must complete doctoral degree requirements within six calendar years from the date of entry into doctoral studies. [Petitions](#) to extend the time period to complete a graduate degree must receive the approval of the departmental/program graduate committee. If approved by the departmental/program graduate committee, [petitions](#) to extend the time period to complete a graduate degree do not require review and approval by the [College of Graduate Studies Petitions Committee](#). However, if denied at the departmental level, requests for an extension of the time period to complete a graduate degree may be submitted to the [College of Graduate Studies Petitions Committee](#) for review and disposition.
2. A student who enrolls consecutively in master's and doctoral programs without interruption of at least one academic year following receipt of the master's degree must complete doctoral requirements within 10 calendar years from the date of admission to the master's program. [Petitions](#) to extend the 10-year period to complete a doctoral degree must receive the approval of the departmental/ program graduate committee. Such [petitions](#) do not require review and approval by the [College of Graduate Studies Petitions Committee](#).
3. A student who is a candidate for a master's degree must fulfill the [College of Graduate Studies'](#) residence requirement of having earned at least 16 credit hours of acceptable graduate credit (with course grades of B or better) while enrolled in the [College of Graduate Studies](#) at Cleveland State University.
4. Of the minimum 30 credit hours required for graduation with a master's degree, only eight credit hours of 400-level courses can be used to meet graduation requirements. The 400-level courses may not be offered by the department or program in which the master's degree would be awarded. No 100- to 300-level courses may be applied toward a graduate degree. The remainder of the course requirements must be graduate-level (500- to 800-level) courses.
5. Subject to departmental approval, nine graduate credit hours of transfer credit may be applied toward the requirements of a master's degree, and no more than one-third of the total graduate hours required for the doctoral degree may be transfer credit for doctoral students. (See [Transfer Credit and Credit by Examination](#) policies earlier in this section of the Catalog.)

Petitions to extend transfer credits should be submitted to the departmental/ program graduate committee. If approved by the departmental/ program graduate committee, such requests do not require review and approval by the College of Graduate Studies Petitions Committee. However, petitions for acceptance of more than nine hours of transfer credit that are not approved at the departmental/ program level may be submitted to the College of Graduate Studies Petitions Committee for review and disposition.

Not more than one-half of a student's total graduate degree program may be a combination of transfer credit and credit by examination.

6. Achievement of at least a 3.00 cumulative grade-point average for all courses taken as a graduate student, including 400-level undergraduate courses, is required for graduation. All grade-point averages are carried to two decimal places unrounded. The University Graduate Council has determined that the minimum 3.00 grade-point average required for graduation cannot be waived via petition.

7. A maximum of six credit hours of 500- to 800-level work graded on an S (satisfactory) basis may be used to meet degree requirements. Excluded from this requirement are courses that are graded only on an S/F basis.

8. A maximum of eight credit hours of work at the C level for 400-level and above courses may apply toward graduate degree requirements.

9. A student must be registered for at least one graduate credit during the semester of graduation; i.e., if the student plans to graduate at the end of the spring semester, he or she must enroll during the spring term.

If an appropriate course in the student's program area is not available for registration for the graduation term, the student may register for GCL 690, which is a one-credit, non-graded course. In order to enroll in GCL 690, the student must have registered for and completed all required course work in previous semesters either with a letter grade or an Incomplete (or similar continuing status grade) and must have outstanding work for an Incomplete graded course(s). Enrollment requires written authorization from the student's graduate program director certifying that the individual has met all degree requirements except for the completion of the work in the courses in which Incomplete grades were received. Enrollment in GCL 690 is administered by the College of Graduate Studies office, (216) 687-9370.

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Application for Graduation

In general, degree candidates should apply for graduation two semesters before their expected graduation date. Specific graduation application deadline dates may be found at www.csuohio.edu/registrar/graduation.html. Graduation applications can be obtained from the Graduation Office, University Center, Room 400, (216) 687-3870.

Presence at Commencement

Students are encouraged and expected to attend Commencement. However, those choosing not to attend may absent themselves by notifying the University Graduation Office.

Doctoral students may not participate in the University commencement ceremony unless they have successfully defended their doctoral dissertation prior to the commencement exercise.

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Completion of Certificate and Licensure Programs

1. A student has a period of six years from date of entry into the College of Graduate Studies to complete requirements for a graduate certificate or graduate licensure program. Only course

work, including transfer credit and credit by examination, completed within the immediate past six-year period will apply toward program completion.

2. A maximum of one-third of graduate certificate or graduate licensure program requirements may be satisfied with Cleveland State University course work taken at the 400-level. Only 400-level courses taken from a department or program other than the one awarding the certificate or licensure may be used to meet completion requirements. No 400-level courses taken by a student as an undergraduate may be used to meet graduate certificate or licensure requirements.

3. Subject to departmental/program approval, a maximum of one-third of the requirements for a certificate or licensure program may be satisfied via transfer credit. (See the Transfer Credit Policy earlier in this section of the Catalog.)

4. Subject to departmental/program approval, not more than one-third of the requirements for a graduate certificate or licensure program may be satisfied via Credit by Examination. (See the Credit by Examination policy earlier in this section of the Catalog.)

5. No 400-or-above-level course work with a grade of “C” may be used to meet graduate certificate program requirements. A maximum of six credits of 400-or-above-level course work with a grade of “C” may be used to meet licensure program requirements.

6. Not more than 50 percent of the required credits for a graduate certificate or licensure program can be satisfied by a combination of:

- a. 400-level courses;
- b. graduate transfer credit; and
- c. credit by examination for 500- and-above-level courses.

7. No course work taken on an S/F or audit basis may be used to satisfy graduate certificate or licensure program requirements.

8. A minimum **grade-point** average of 3.00 for all 400-and-above-level work is required to satisfy licensure program requirements. A minimum **grade-point** average of 2.75 is required to be awarded a graduate certificate. Individual graduate certificate programs, however, may set the minimum GPA requirement at a higher level for the completion of their particular graduate certificate programs.

Licensure Students: College of Education and Human Services graduate licensure students must submit a completed State of Ohio Licensure packet to the Cleveland State University Education Student Services Center. Licensure packets are available from the Education Student Services Center, Rhodes Tower, Room 1401, (216)687-4625. Completed packets should be submitted at least one semester prior to the anticipated date of program completion.

Graduate Certificate Students: Graduate Certificate students must submit to the College of Graduate Studies [Keith Building, Room 1150; telephone (216) 687-9370] a Graduate Certificate Completion form. Forms should be submitted at the beginning of the semester of anticipated date of program completion. Graduate Certificate Completion forms may be downloaded from the College of Graduate Studies web site at www.csuohio.edu/gradcollege/, and also are available from the College of Graduate Studies.

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University Regulations for Student Conduct

Cleveland State University has adopted policies concerning the rights and responsibilities of all students. The Cleveland State University Student Handbook, available through the Department of Student Life (University Center, Room 102), outlines these policies under the heading “Student Conduct Code.” The handbook provides an overview of the role of the student as a participating member of the University community, defining students’ responsibilities while

protecting their right to pursue legitimate educational goals.

Student Academic Responsibility

Each graduate student is personally responsible for completing all University, College, and department degree requirements. It is the student's responsibility to be informed of these requirements. A student's advisor may not assume this responsibility, nor may the advisor substitute, waive, or exempt the student from any established requirement or academic regulation.

Academic Misconduct

The University Policy on Academic Misconduct exists to resolve problems such as plagiarism, cheating on examinations, papers completed by someone other than the registered student, theft, mutilation of library materials, etc. The Policy details procedures for resolution of matters of conflict, channels of appeal, and penalties imposed, and can be found in the Cleveland State University *Student Handbook*. Copies are available from the Department of Student Life, University Center, Room 102.

Grade Dispute Procedure

In disputing a course grade, the burden is on the student to demonstrate that an error has occurred or that a non-uniform standard was applied in the assignment of the course grade.

If a student feels that an instructor's assignment of a course grade is improper, the student should discuss the matter with the instructor within 45 days following completion of the semester in which the course was taken.

If resolution does not result from this meeting, the student should promptly write to the chairperson of the instructor's department (or an appropriately designated substitute) stating the nature of the dispute and its justification. The chairperson will provide the course instructor with a copy of the student's statement and any additional documents submitted. The instructor should promptly respond, in writing, and a copy must be provided to the student. Further statements and documentation may be collected, if necessary, by the chairperson.

Once the written record is complete, the chairperson meets with the student and instructor in a three-way conference to try to resolve the dispute. Any student not satisfied with the outcome of the meeting with the instructor and the department chairperson may continue the dispute by petitioning the College of Graduate Studies Grade Dispute Committee. In such cases, the chairperson must promptly transmit all submitted documents, including the chair's recommendation concerning the dispute, to the College of Graduate Studies Grade Dispute Committee. The Committee will: 1) inform both the student and the instructor of the Committee's membership; 2) send both parties copies of all written documents received and any additional materials gathered by the Committee; 3) allow both parties to respond in writing to any new materials assembled; and 4) schedule a hearing inviting both the student and instructor to present their positions on the dispute. Both the student and the involved faculty member are expected to be present at the hearing.

The recommendation of the College of Graduate Studies Grade Dispute Committee, along with a copy of the entire grade dispute file, is forwarded for final decision to the University Admissions and Standards Committee, which limits its review to the determination of the following of due process. The decision of the University Admissions and Standards Committee is transmitted in writing to both the student and the instructor. There is no further appeal within the University from the Admissions and Standards Committee's decision.

Plagiarism Policy

Plagiarism is the act of presenting as one's own the ideas, opinions, writings, or work of another person without appropriate scholarly attribution. This act is academic dishonesty and is a serious incident of academic misconduct.

Ideally, situations of [plagiarism](#) should be handled between the faculty member and the student. Any student who disagrees with the instructor's decisions should follow standard channels of communication, going first to the department chairperson and then, if still not satisfied, writing to the academic dean of the college in which the course is offered. The Review Committee of the Faculty Senate decides the matter if it cannot be settled within the college. The committee is composed of two faculty members of the University, nominated by the Faculty Senate Steering Committee and elected at large by the faculty, and one student member of the University Judiciary, elected by the members of the body. The decision of the Review Committee is final. If found guilty, the instructor or the committee informs the appropriate academic dean. A record of the decision is placed in the student's academic file until the student graduates or separates from the University. A second infraction shall be cause for further action by the academic standards committee in the appropriate college.

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Access to Student Records

In accordance with federal law, University policy permits students to inspect their educational records. A student wishing to see his or her records may do so in the Office of the [University Registrar](#), University Center, Room 400, where a complete listing of the individual's educational records is available. The University is forbidden to share student record information with third parties unless the student grants permission in writing to do so.

Family Educational Rights and Privacy Act (FERPA)

Cleveland State University is required to give annual notice to students, or parents of students, of the rights granted by the Family Education Rights and Privacy Act ([FERPA](#)) of 1974. In accordance with this Act, students are notified of the following:

Right to Consent

Students have the right to consent to disclosures of personally identifiable information contained in educational records, except to the extent that [FERPA](#) authorizes disclosure to University officials with legitimate educational interests.*

Right to Inspect

Students have the right to inspect and review information contained in educational records maintained by Cleveland State University.

Right to Request Amendment

Students have the right to request an amendment of an educational record that they believe to be inaccurate, misleading, or otherwise in violation of their [FERPA](#) rights. This includes the right to a hearing should the University decide not to alter a record according to the student's request.

Right to Prevent Disclosure

Students have the right to restrict the release of information that may be disclosed on an unlimited basis by University personnel in response to oral or written requests. Certain [petitions](#) to this rule are specified in the Act.

Right to File a Complaint

Students have the right to file a complaint with the Department of Education concerning any belief they have that Cleveland State University has failed to comply with the provisions of [FERPA](#). Written complaints should be directed to The Family Policy Compliance Office, U.S. Department of Education, 600 Independence Avenue, SW, Washington, D.C. 20202-4604. Phone: (202) 260-3887; Fax: (202) 260-9001.

*A University official is a person employed by the University in an administrative, supervisory, academic or research, or support staff position (including law enforcement and health staff); a person or company with whom the University has contracted (such as an attorney, auditor, or consultant), or a student serving on an official committee, such as a disciplinary or grievance committee, or assisting another University official in performing his or her tasks. A University official has a legitimate educational interest if the official needs to review an education record in order to fulfill his or her professional responsibility.

A copy of Cleveland State University's institutional policies on access to student records may be obtained by request from the Office of the [University Registrar](#), University Center, Room 400, or viewed on the web site at www.csuohio.edu/registrar/. These policies set forth the procedures for inspection and amendment of educational records.

[Student Rights Regarding the Release of Directory Information](#)

The Family Education Rights and Privacy Act ([FERPA](#)) of 1974 permits Cleveland State University to release directory information about students. The University classifies the following information as public information and may release it unless otherwise instructed by the student:

1. Student Name;
2. Home and mailing address;
3. E-mail address;
4. Telephone listing;
5. Major field of study;
6. Participation in officially recognized activities and sports;
7. Height and weight of members of athletic teams;
8. Dates of attendance;
9. Degrees and awards (honors) earned;
10. Most recent previous educational institution attended by the student.

Students who wish to restrict the release of the foregoing information can do so by submitting the Directory Information Restriction Request form to the Office of the [University Registrar](#) (University Center, Room 400). The form can be found on the [University Registrar's](#) web site under Downloadable Forms at www.csuohio.edu/registrar/, or in the Office of the [University Registrar](#). A request must be received at least 10 business days prior to the first day of instruction of the semester for which the request is to become effective. This restriction will remain in effect until the student requests in writing that it be removed. However, even if such a request is filed, the University will release information as necessary, if it is determined that disclosure is permitted by [FERPA](#) without prior consent (e.g., response to a subpoena, health or safety emergency). Please be aware that if a student requests that the for-going information be withheld, it will be withheld from a variety of sources, including friends, relatives, prospective employers, insurance agencies, honor societies, and the news media.

Students carefully should consider the consequences of withholding such information before they do so.

[Institutional Policies on Access to Student Records](#)

In compliance with the Family Education Rights and Privacy Act ([FERPA](#)) of 1974 Cleveland State University has established the following policies:

Access to Student Records

University policy permits students to inspect their educational records. A student wishing to see his or her records may do so in the Office of the University Registrar, University Center, Room 400. The University is generally prohibited from sharing student record information with third parties unless the student grants permission in writing to do so, or in response to a court order or subpoena.

Right to Review Records

Students attending Cleveland State University have the right to review educational records that consist of official records, files, and data directly related to them that are maintained by a University department, college, or office. Personal files maintained by faculty or staff are excluded from coverage under this policy.

Medical and counseling records maintained by professional or paraprofessional physicians or counselors that may be used in treatment or counseling with a student are deemed confidential and need not be shared with a student. A physician or other appropriate professional of the student's choice may review such records.

Financial aid records and files are confidential and need not be shared with students. Files maintained by the University Police Department are confidential, except that the student involved in the incident may view the record known as the incident report.

A. Students may request the opportunity to review their records.

1. The request should be made to the administrator in charge of the University office in which the records are on file.

2. The University office may require the request to be in writing.

B. A student request to inspect and review a record will be granted within a reasonable period of time. Such time shall not exceed 45 days after receipt of the request.

C. Records must be inspected and reviewed by the student in the presence of the administrator in charge or a designee.

1. The student shall be advised of the right to challenge and the procedure to challenge any portion(s) of a school record.

2. Records may not be changed or portions deleted during inspection and review.

3. Upon written request, the student shall be provided with a copy of any portion(s) of the school record, subject to a fee.

Hearing to Challenge the Content of Records

Students have an opportunity for a hearing to challenge the content of their school records to ensure that the records are not inaccurate, misleading, or otherwise in violation of the privacy or other rights of students, and to provide an opportunity for the correction or deletion of any such inaccurate, misleading, or otherwise inappropriate data contained therein.

A. A student may request, in writing, a hearing to challenge the content of his or her school record.

1. A request should be made to the President of the University or the President's designee.

2. A request must:

a. Identify in specific terms the portion(s) of the record being challenged;

b. State the reason(s) for challenging the portion(s) of the record so identified;

c. State the remedy sought (e.g., the addition, alteration, or deletion of specific information

under challenge).

3. The written challenge is maintained as part of the record or file in question until the conclusion of the hearing.

B. Hearing Procedures

1. The President or President's designee conducts the hearing.

2. The hearing will be granted within 15 working days after receipt of the request.

3. Prior to the hearing, the hearing officer shall notify the student and the University official representing the record of the time, place, and date of the hearing and of the specific portion(s) of the student's school record to be challenged in the hearing.

4. The University official or designee responsible for the student record under challenge shall represent that record in the hearing.

5. The hearing shall be limited to a consideration of the specific portion(s) of the student's school record being challenged.

6. The student has the right to be assisted by an advisor of his or her choice.

7. The burden of sustaining the challenge rests with the student.

8. The student and the University official have the right to present evidence and witnesses directly related to the portion(s) of the student's record being challenged.

9. The hearing officer shall keep a taped record of the hearing.

10. The hearing officer must provide the student with written notification of the disposition of the challenge, including the reason(s) for the disposition.

C. Findings

1. The record stands.

2. The record is corrected.

3. The record is deleted.

[Challenge to Grades](#)

The Family Education Rights and Privacy Act ([FERPA](#)) of 1974 does not cover challenges by students to course grades.

[University Policy on Record of Access to Student Records](#)

Students attending Cleveland State University have the right to know who has had access to their records and the reason for that access.

Accordingly, University offices with students' education records must maintain a record listing the names of all parties, other than University officials with a legitimate educational interest, who have requested or obtained access to and/or copies of student records. This record must be shown to students requesting such information.

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Student Records Maintained at Cleveland State University

[University Admissions Offices \(Graduate and Undergraduate\)](#)

- [Admissions File](#)

(Records submitted by applicants are not available for inspection until admittance and registration of the student.)

[Alumni Office](#)

Degree information for [alumni](#)

Names and addresses of [alumni](#)

[Treasury Services](#)

Student Financial Record

[College Dean's Office](#)

Student File

[College Departmental Offices](#)

Student File

[College of Education and Human Service—Student Personnel Services](#)

College of Education and Human Services student records will be maintained in this office rather than in the Education College Dean's Office. Under the Family Education Rights and Privacy Act (FERPA) of 1974, confidential materials submitted prior to January 1, 1975 are not available. Records that are available include: (undergraduate) academic records, Students' Written Objectives, speech and hearing test results, T.B. test results, and schedules; (graduate) application, transcript, GRE test results or Miller Analogies Test results, and letters of recommendation.

[College of Law—Dean's Office](#)

Admission file

Placement file

Student file

[Co-op Office](#)

Education file

Employer file

[Division of Collegiate Studies](#)

Admission information

Diagnostic Test Information

[Judicial Affairs—Department of Student Life](#)

University Judiciary Reports and Conduct Records

[Placement Office](#)

Placement folders submitted by students for employment purposes

[University Police](#)

Incident Report/Crime Log

[Office of the University Registrar](#)

Academic Record

Student Schedule

Residency Petition

Change of Name Record

Transcript Request File

Transient Record

Graduation Application File

Registration/Enrollment Materials

Veterans' Certification File

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Cleveland State University

2121 Euclid Avenue, Cleveland, Ohio 44115

www.csuohio.edu 216.687.2000

[Contact Webmanager](#)

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2121 Euclid Avenue, Cleveland, Ohio

44115 • 216.687.2000

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College of Graduate Studies

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Graduate Catalog 2004-2006

Expenses and Financial Aid (See Addenda - July 01, 2005)

Please see the current [Course Schedule](#) for additional information.

Treasury Services's Information

Fee Information

Please note: Fees are subject to change without notice by action of the Board of Trustees.

For updated [fee information](#) visit the University web site (www.csuohio.edu) or contact the Treasury Services's Office by e-mail at Treasury_Servicess.office@csuohio.edu or by phone at (216) 687-3615.

Students can easily manage their course registration, tuition, and fees through CampusNet, the University's online student-services web site at <https://campusnet.csuohio.edu/index.jsp>. Students who need assistance with their University IDs and PINs, should call the Information Services and Technology Help Desk at (216) 687-5050.

Course registration begins several months prior to each term. Students will be notified via e-mail of their registration appointment times and dates. Tuition bills are available online through CampusNet about three to four weeks prior to the start of each term. Registration Invoices (tuition bills) also will be mailed to all students at that time. **Payment** is due **PRIOR** to the start of the term. This includes making **payment** arrangements through **financial aid**, an assistantship, sponsors, and/or joining Cleveland State's Budget **Payment Plan**. Students who do not make adequate **payment** arrangements prior to the start of the term will be subject to late fees and cancellation of classes. It is very important to make sure tuition is paid, even if it will be completely covered through financial aid.

Miscellaneous Fees

Graduate Admission Application Fee \$30

(\$55 for Physical Therapy and Occupational Therapy Programs)

Transient Student Application Fee \$15

Credit by Examination Fee \$20

Graduation Application Fee \$25

The deadline dates and fee amounts for the following miscellaneous fees can be found at www.csuohio.edu/cashier/fees.html.

Returned Check Fee

Collection Fee

Late Registration Fee

Late Add Fee

Re-Instatement Fee after Cancellation, Prior Term Add, and Prior Term Registration

Late Payment Fee

Miscellaneous fees are not refundable and are subject to change without notice by action of the Board of Trustees.

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Student Financial Responsibility

Students are responsible for meeting their financial obligations to the University. Students with outstanding debts to Cleveland State University may be denied all University services, including registration and transcripts.

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Payment Methods

Budget Payment Plan

The Cleveland State University Budget Payment Plan allows students the flexibility of spreading certain fees over the semester instead of making a single full payment. The first payment of 25 percent of the total fee and \$30 service fee are due by the Payment Due Date indicated on the University Invoice. The remaining balance is broken down to three additional payments. These payments will be 25 percent of the outstanding balance. The student will receive a University Invoice before each payment is due.

For the summer semester, the Budget Payment Plan is broken down to only three installments.

Fees for the Budget Payment Plan per term are:

Service Fee \$30

Late Fee \$25

Complete descriptions and applications are available on the Internet (www.csuohio.edu/bursar/paymnt.html), at the Express Payment Center (next to University Center, Room 460) or by calling (216) 687-3615. This program and the fees listed herein are subject to change.

Cash Payments are accepted at the Cashier's Office, University Center, Room 460. To avoid lines, payments by check can be deposited at the Express Payment Center, outside the University Center, Room 460 lobby.

Check Payments should be made payable to "Cleveland State University" and returned to the Treasury Services's Office by the Payment Due Date along with the remittance portion of the University Invoice. Students must include the Student ID number on checks. Postdated checks will not be accepted. The fee for a dishonored check is \$35 plus Late Fees. A returned check does not cancel a student's registration

Credit Cards. MasterCard, Visa, and Discover are the only credit cards accepted by the University. Credit card payments may be made at the Cleveland State University web site. If paying by mail, the charge form, which appears at the bottom of the University Invoice, must be completed and deposited into the Express Payment depository or mailed to the Treasury Services's Office. Credit card payments may also be faxed to (216) 687-3619. The credit card number and expiration date must be included. The fee for a dishonored charge is \$35 plus Late Fees. A returned charge does not cancel a student's registration.

Fee Authorization Program forms may be obtained from the Cleveland State University web site or from Human Resources Department in the **Keith Building**, Suite 1300. The completed form must be returned by the **Payment Due Date** as full or partial **payment**. Other fees must also be paid by the **Payment Due Date**.

Fee /Tuition Reimbursement—The Tuition Reimbursement Deferred **Payment Plan** is a deferred **payment plan** for students who have a tuition reimbursement benefit from their employer. This plan is available to any student who is in good standing with the University. The completed application, employer verification, and **payment** must be submitted to the **Treasury Services's Office** by the **Payment Due Date** on the University Invoice.

Financial Aid requires that all processing be completed and **eligibility** requirements met before the **Payment DueDate** for funds to transfer into a student's account in order to avoid late fees.

1. If the **financial aid** is more than the amount owed the University, fees will be paid in full and the credit balance will be refunded to the student.
2. If the **financial aid** is less than the amount owed the University, the student must submit **payment** for the balance by the **Payment Due Date**.
3. If a student's **financial aid** is not available by the **Payment Due Date**, he or she must pay fees by another method. After **financial aid** is applied to the account, any credit balance will be refunded to the student by check.

Perkins Loan students are required to sign for their loan advances in University Center, Room 460, before registering. Funds will be credited to the student's account by the **Payment Due Date**. If the loan is less than the required **payment**, the balance must be paid by another method by the **Payment Due Date**.

Staff Development is available to **faculty** and staff. Staff Development covers eight credit hours or the dollar equivalent up to eight undergraduate credit hours for **continuing education** courses. The form may be obtained from the Cleveland State University web site or from the Human Resources Department, **Keith Building**, Suite 1300. Faculty and staff must return the completed form by the **Payment Due Date** as full or partial **payment**. Other fees must be paid by the **Payment Due Date** by another method.

Third Party Sponsors—A letter of authorization (on company letterhead), purchase order, or agreement must be submitted to the **Treasury Services's Office** by the **Payment Due Date**.

The document must include the student's name, social security number, third party's federal tax ID number, and conditions of **payment**, such as maximum credit hours or dollars to be billed. If the document is for more than one term, a copy must be submitted to the **Treasury Services's Office** each term. The student is responsible for any charges not paid by the sponsor by the **Payment Due Date**. Submit **payment** with the bottom portion of the University Invoice. Should the sponsor fail to honor the University's invoice in full, the student will be billed for the amount due and charged Late Fees.

Tuition Grant Recipients and Graduate Assistants must pay any additional fees (e.g., technology fees, lab fees, student health insurance, **applied music fees**) not covered by the Tuition Grant or Graduate Assistantship. **Payment** must be submitted with the bottom portion of the University Invoice by the **Payment Due Date**.

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Refund of Fees

Credit hour fees will be refunded based on the Official Date of **Withdrawal**. The failure to

attend classes due to business or personal reasons does not change the refund schedule. The Official Date of **Withdrawal**, which is the date the course change is presented to the Office of the **University Registrar**, will be the basis for computation of the refund. Canceled courses are dropped by individual departments at 100 percent refund. Refunds for courses that do not fall into the regular session are prorated on the basis of the course length and based on the Official Date of **With-drawal**. After dropping a workshop or intensive course, students must complete the required forms, which are available in the **Treasury Services's** Office, University Center, Room 460.

Students who drop Saturday classes must notify the **Treasury Services's** Office during weekday business hours at (216) 687-3615 to assure the proper refund. Additional information about how to determine refunds may be obtained from the **Treasury Services's** Office.

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Refund Schedule

For refund information, please see the Cleveland State University web site, the current semester **Course Schedule**, or contact the **Treasury Services's** Office by e-mail at bursars.office@csuohio.edu or by phone (216) 687-3615.

University Minimum Refund Policy

The University does not issue refund checks for less than \$3, unless requested by the student. Requests should be made to the **Treasury Services's** Office, University Center, Room 460, by the 10th week of the semester.

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Ohio Board of Regents Residency Regulations

Ohio Residency

Ohio Board of Regents Intent and Authority

(A) Intent and Authority

(1) It is the intent of the Ohio Board of Regents in promulgating this rule to exclude from treatment as residents, as that term is applied here, those persons who are present in the State of Ohio primarily for the purpose of receiving the benefit of a state-supported education.

(2) This rule is adopted pursuant to Chapter 119 of the Revised Code, and under the authority conferred upon the Ohio Board of Regents by section 3333.31 of the Revised Code.

(B) Definitions

For purposes of this rule:

(1) "Resident" shall mean any person who maintains a twelve-month place or places of residence in Ohio, who is qualified as a resident to vote in Ohio and receive state public assistance, and who may be subjected to tax liability under section 5747.02 of the Revised Code, provided such person has not, within the time prescribed by this rule, declared himself or herself to be or allowed himself or herself to remain a resident of any other state or nation for any of these or other purposes. (Students possessing B, F, J, K, M, N, NATO 1-7, Q, and V visas are NOT eligible for Ohio **Residency** for tuition purposes unless the students are spouses or dependents of U.S. citizens or persons with eligible visas who are also eligible for Ohio Board of Regents Residency Rules.)

(2) "Financial support" as used in this rule, shall not include grants, scholarships and awards

from persons or entities that are not related to the recipient.

(3) An "institution of higher education" shall have the same meaning as "state institution of higher education" as that term is defined in Section 3345.011 of the Revised Code, and shall also include private medical and dental colleges, which receive direct subsidy from the State of Ohio.

(4) "Domicile" as used in this rule is a person's permanent place of abode so long as the person has the legal ability, under federal and state law, to reside permanently at that abode. For the purpose of this rule, only one domicile may be maintained at a given time.

(5) "Dependent" shall mean a student who was claimed by at least one parent or guardian as a dependent on that person's Internal Revenue Service tax filing for the previous tax year.

(6) "Residency Officer" means the person or persons at an institution of higher education that has the responsibility for determining residency of students under this rule.

(7) "Community Service Position" shall mean a position volunteering or working for:

(a) VISTA, AmeriCorps, City Year, the Peace Corps, or any similar program as determined by the Ohio Board of Regents

OR

(b) An elected or appointed public official for a period of time not exceeding 24 consecutive months.

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[Ohio Board of Regents Residency Rules](#)

(C) Residency for subsidy and tuition surcharge purposes

The following persons shall be classified as residents of the State of Ohio for subsidy and tuition surcharge purposes:

(1) A student whose spouse, or a dependent student, at least one of whose parents or legal guardian, has been a resident of the State of Ohio for all other legal purposes for twelve consecutive months or more immediately preceding the enrollment of such student in an institution of higher education.

(2) A person who has been a resident of Ohio for the purpose of this rule for at least twelve consecutive months immediately preceding his or her enrollment in an institution of higher education and who is not receiving, and has not directly or indirectly received in the preceding twelve consecutive months, financial support from persons or entities who are not residents of Ohio for all other legal purposes.

(3) A dependent student of a parent or legal guardian, or the spouse of a person who, as of the first of day of a term of enrollment, has accepted full-time, self-sustaining employment and established domicile in the State of Ohio for reasons other than gaining the benefit of favorable tuition rates.

Documentation of full-time employment and domicile shall include both of the following documents:

(a) A sworn statement from the employer or the employer's representative on the letterhead of the employer or employer's representative certifying that the parent, legal guardian or spouse of the student is employed full-time in Ohio.

(b) A copy of the lease under which the parent, legal guardian or spouse is the lessee and occupant of rented residential property in the state; a copy of the closing statement on residential real property located in Ohio of which the parent, legal guardian or spouse is the

owner and occupant; or if the parent, legal guardian, or spouse is not the lessee or owner of the residence in which he or she has established domicile, a letter from the owner of the residence certifying that the parent, legal guardian, or spouse resides at that residence.

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Criteria Which May Be Considered in Determining Residency

(D) Additional criteria which may be considered by residency officers in determining residency may include but are NOT limited to the following:

(1) Criteria evidencing residency:

(a) If a person is subject to tax liability under section 5747.02 of the Revised Code;

(b) If a person qualifies to vote in Ohio;

(c) If a person is eligible to receive Ohio public assistance;

(d) If a person has an Ohio's Driver's License and/or Motor Vehicle Registration.

(2) Criteria evidencing LACK of residency:

(a) If a person is a resident of or intends to be a resident of another state or nation for the purpose of tax liability, voting, receipt of public assistance, or student loan benefits (if the student qualified for that loan program by being a resident of that state or nation);

(b) If a person is a resident or intends to be a resident of another state or nation for any purpose other than tax liability, voting, or receipt of public assistance (see paragraph (D) (2) (a) of this rule).

(3) For the purpose of determining residency for tuition surcharge purposes at Ohio's state-assisted colleges and universities, an individual's immigration status will not preclude an individual from obtaining resident status if that individual has the current legal status to remain permanently in the United States.

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Petitions to the General Rules of Residency

(E) Exceptions to the general rule of residency for subsidy and tuition surcharge purposes:

(1) A person who is living and is gainfully employed on a full-time or part-time and self-sustaining basis in Ohio, and who is pursuing a part-time program of instruction at an institution of higher education, shall be considered a resident of Ohio for these purposes.

(2) A person who enters and currently remains upon active duty status in the United States military service while a resident of Ohio for all other legal purposes, and his or her dependents, shall be considered residents of Ohio for these purposes as long as Ohio remains the state of such person's domicile.

(3) A person on active duty status in the United States military service, who is stationed and resides in Ohio and his or her dependents, shall be considered residents of Ohio for these purposes.

(4) A person who is transferred by his/her employer beyond the territorial limits of the fifty states of the United States and the District of Columbia while a resident of Ohio for all other legal purposes, and his or her dependents, shall be considered residents of Ohio for these purposes as long as Ohio remains the state of such person's domicile and as long as such person has fulfilled his or her tax liability to the state of Ohio for at least the tax year preceding enrollment.

(5) A person who has been employed as a migrant worker in the State of Ohio, and his or her dependents, shall be considered residents for these purposes provided such person has worked in Ohio at least four months during each of the three years preceding the proposed enrollment.

(6) A person who was considered a resident under this rule at the time the person started a community service position as defined under this rule (see definitions), and his or her spouse and dependents, shall be considered residents of Ohio while in service and upon completion of service in the community service position.

(7) A person who returns to the State of Ohio due to marital hardship, takes or has taken legal steps to end a marriage, and re-establishes financial dependence upon a parent or legal guardian (receives greater than 50 percent of his or her support from the parent or legal guardian), and his or her dependents, shall be considered residents of Ohio.

(8) A person who is a member of the Ohio National Guard and who is domiciled in Ohio, and his or her spouse and dependents, shall be considered residents of Ohio while the person is in the Ohio National Guard service.

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Procedures

(F) Procedures

(1) A dependent person, classified as a resident of Ohio for these purposes under the provisions of paragraph (C) (1) of this rule and who is enrolled in an institution of higher education when his or her parents or legal guardian removes their **residency** from the state of Ohio, shall continue to be considered a resident during continuous full-time enrollment and until his or her completion of any one academic degree program.

(2) In considering **residency**, removal of the student or the student's parents or legal guardian from Ohio shall not, during a period of twelve months following such removal, constitute relinquishment of Ohio **residency** status otherwise established under paragraph (C) (1) or (C) (2) of this rule.

(3) For students who qualify for **residency** status under paragraph (C) (3) of this rule, **residency** status is lost immediately if the employed person upon whom the resident student status was based accepts employment and establishes domicile outside Ohio less than twelve months after accepting employment and establishing domicile in Ohio.

(4) Any person once classified as a nonresident, upon the completion of twelve consecutive months of **residency**, must apply to the institution he or she attends for reclassification as a resident of Ohio for these purposes if such person in fact wants to be reclassified as a resident. Should such person present clear and convincing proof that no part of his or her financial support is or in the preceding twelve consecutive months has been provided directly or indirectly by persons or entities who are not residents of Ohio for all other legal purposes, such person shall be reclassified as a resident.

Evidentiary determinations under this rule shall be made by the institution which may require, among other things, the submission of documentation regarding the sources of a student's actual financial support.

(5) Any reclassification of a person who was once classified as a nonresident for these purposes shall have prospective application only from the date of such reclassification.

(6) Any institution of higher education charged with reporting student enrollment to the Ohio Board of Regents for state subsidy purposes and assessing the tuition surcharge shall provide individual students with a fair and adequate opportunity to present proof of his or her Ohio **Residency** for purposes of this rule. Such an institution may require the submission of affidavits and other documentary evidence which it may deem necessary to reach a full and

complete determination under this rule.

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Financial Aid

Graduate Assistantships

Cleveland State University provides three types of [graduate assistantships](#): teaching, research, and administrative. Each type of assistantship is designed both to serve the needs of the University and to assist in the professional development of the student. Graduate [assistantships](#) are regarded as apprenticeships during which, through formal instruction, interaction with faculty, classroom, research, and administrative experience, students become more effective as members of their chosen professional fields. Graduate assistants are regarded by the University as students first and University employees second. Students interested in applying for graduate assistantships should contact their graduate program directors.

In addition to [graduate assistantships](#), limited [financial aid](#) is available in the form of fellowships, student loans, research grants, federal work-study, and non-work-study employment. Students seeking assistance should contact the [Financial Aid Office](#) and the academic department of the program that they plan to enter for additional information.

Note: Students who have applied for, or are receiving, federal student loans or other [financial aid](#) through the University may have their award [eligibility](#) adjusted if they receive a graduate assistantship or a tuition grant.

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Types of Assistantships

[Teaching assistantships](#) are provided to assist departments in carrying out their undergraduate instructional programs. Teaching assistants aid faculty members in assembling classroom materials, leading discussion groups, supervising laboratory sessions, evaluating student performance, and carrying out other related instructional activities. Only assistants holding master's degrees, with exemplary academic records, may be assigned primary responsibility for instruction of lower division (100- to 200-level) undergraduate classes.

International teaching assistants whose native language is other than English may not be assigned direct instructional activities until they have been assessed and certified as proficient in spoken English.

[Research assistantships](#) are provided to assist faculty and staff members in conducting research. Whenever possible, research assistants are assigned to individuals working in a variety of areas in order to extend the research experience and professional development of the graduate student.

[Administrative assistantships](#) are provided to assist departments, divisions, institutes, colleges, and other offices of the University in managing their respective units. Administrative assistants are exposed to a variety of administrative experiences and tasks to prepare them for future professional roles.

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Terms of Assistantships

1. [Assistantships](#) are awarded only to graduate degree-seeking students with superior academic records and who qualify at the time of their enrollment as regular graduate students as defined in this Catalog. Students must have an undergraduate [grade-point](#) average of at least 3.00, a graduate [grade-point](#) average of at least 3.00 (where applicable), and a Cleveland-Marshall

College of Law grade-point average of at least 2.50 (where applicable) to qualify for, and to retain, an assistantship.

2. Graduate assistants receive contracts with specific conditions and duties detailed, including a stipend and tuition support.

3. Each contract is signed by the academic officer authorized to initiate the appointment of the graduate assistant and by the academic officer authorized to expend funds for assistantships.

4. Graduate assistants are provided a stipend and a tuition scholarship by the contracting unit. At the discretion of the unit, assistants who are not residents of the State of Ohio may, or may not, be responsible for the out-of-state portion of their tuition bill.

5. Graduate assistantships are awarded on a full-time, two-thirds-time, or half-time basis that require 20 hours, 15 hours, or 10 hours of University service per week, respectively, during the academic term. Students holding a 20-hour assistantship may not hold any other form of employment, either within the University or off-campus, without receiving prior written approval from the Graduate Dean.

6. The term of appointment for a graduate assistantship is normally for one or more academic term(s), with the employment period adhering to the official University calendar. When assistantships do not follow the academic term schedule, the beginning and ending dates must be stated in the graduate assistantship contract.

7. Graduate assistants are not required to work on University holidays when classes are not offered; nor are graduate assistants required to make up time for regularly scheduled service that falls on a University holiday when classes are not offered.

8. Full-time, two-thirds-time, and half-time graduate assistants must maintain a nine credit-hour minimum registration at, or above, the 500 level during the contract period for the academic term specified. Courses taken on an audit basis do not qualify in meeting the nine credit-hour minimum registration requirement. Petitions to the minimum registration requirement require the written approval of the Graduate Dean. Assistantship contracts are subject to cancellation if students do not meet the minimum registration requirement. Individual graduate degree programs determine whether the minimum registration must be nine or 12 credit hours per academic term. In general, doctoral-level graduate assistants register for 12 credit hours after reaching the dissertation stage in their program of study. Prior approval by the Graduate Dean is required for contracts for more than 16 credit hours per term.

9. All graduate assistants are required to attend the University's Graduate Assistant Orientation Program (GAOP) during the first academic term of employment. GAOP information is available from the College of Graduate Studies.

10. Students may be retained as graduate assistants as long as they are currently registered for the appropriate number of credit hours, have earned less than a total of 173 semester hours of graduate credit, are in good academic standing (cumulative graduate grade-point average of at least 3.00, and Cleveland State University Law School grade-point average of at least 2.50, if applicable), are performing their duties to the satisfaction of the units in which they hold the appointment, and are making acceptable progress toward the completion of their graduate degree programs. The number of academic terms that a student may be retained as a graduate assistant is determined by the unit sponsoring the assistantship; however, master's degree students normally do not receive more than four semesters of assistantship support while doctoral students normally receive a maximum of 12 semesters of assistantship support, including all assistant-ship support received as master's degree students within any Cleveland State University program(s).

11. Minimum stipend levels for graduate assistantships, by degree status of the student, are determined by the Provost at the beginning of the fiscal year.

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Graduate Tuition Grant

In addition to the Graduate Assistantship Program, the Cleveland State University University College of Graduate Studies administers a Graduate Tuition Grant Program, which provides graduate tuition support to qualified students. To be eligible to receive a Graduate Tuition Grant a student must have been admitted to a graduate degree program and have a minimum grade-point average of at least 3.00 in graduate work (if applicable) and a GPA of 2.50 in course work taken in the Cleveland-Marshall College of Law (if applicable).

Graduate Tuition Grant are available to provide tuition support for one to 12 graduate credit hours (500 level or above), as determined by each student's program director. At the discretion of the department, tuition grant students may or may not be responsible for the out-of-state portion of their tuition bills. Graduate Tuition Grant recipients are required to provide service to the department. The maximum number of service hours to be provided to the department by Graduate Tuition Grant recipients cannot exceed 10 per week. Work hours are prorated according to the number of credit hours of tuition support provided. Because graduate tuition carry a service obligation for students, a portion of the Graduate Tuition Grant is subject to withholding of all applicable federal, state, and local taxes.

For additional information, contact the graduate program director or the Cleveland State University College of Graduate Studies at (216) 687-9370.

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Maximum Work Hours

All student employees of the University, including graduate assistants and tuition grant recipients, are limited to a maximum of 20 hours of service per week during the academic term. Graduate assistants and tuition grant recipients working 10 hours per week must, therefore, limit other University employment to 10 hours per week for a total work commitment not to exceed 20 hours per week. Graduate assistants and tuition grant recipients working 15 hours per week must limit their other University employment to five hours per week. Graduate assistants on a full-time (20 hours of service per week) contract may not hold other outside employment without written approval of the Graduate Dean since a Graduate Assistantship represents full financial assistance.

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Cleveland State University Administered Financial Aid Programs

Students interested in applying for University-administered financial aid programs should complete the Free Application for Federal Student Aid (FAFSA), or the Federal Renewal Application, after January 1 of each year. If selected for verification, calendar year tax returns and a Cleveland State University Verification form are required. Forms are available at www.csuohio.edu/fao/download.html.

Graduate students will be considered for Federal Aid programs based on the availability of funds and a minimum enrollment of six or more credit hours per semester. Twelve or more credit hours is considered full-time for financial aid purposes.

Federal Work Study Program

This is a federal, need-based employment program. Selected funds are available for community service positions.

Federal Perkins Loan Program

This is a federal, need-based, five-percent-interest loan program administered by the Financial Aid Office. Interest does not accrue, and no payment is required while the borrower is engaged

in at least half-time study (six or more credit hours). There is a nine-month grace period. A minimum quarterly repayment of \$120 is required for new borrowers on loans made after October 1, 1992.

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Federal Subsidized Stafford Loan Program

Federal loan program administered by local lending institutions. The federal government pays interest on the loan for students while they attend school on at least a half-time basis. Repayment begins six months after leaving school at a minimum of \$50 per month. Students may take a maximum of 10 years to repay. The interest rate is variable and does not exceed 8.25 percent for loan periods beginning July 1, 1994.

Maximum loan eligibility for this program is as follows:

\$8,500 Annual Graduate maximum for Federal Subsidized

\$10,000 Annual Graduate Maximum for Federal Unsubsidized

Federal Unsubsidized Stafford Loan Program

The terms and conditions of loans made under the Federal Subsidized Stafford Loan Program apply to Federal Unsub-sidized Stafford Loans, except the borrower is responsible for the interest that accrues while the student is in school unless the student requests that interest be capitalized.

Students must complete a Free Application for Federal Student Aid and receive their maximum loan eligibility in the Federal Subsidized Stafford Loan Program before being considered for this loan.

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Non-Degree Students

Non-degree graduate students may qualify for the Federal Stafford Loan Program if their course work is required as a prerequisite to qualify for admission into a graduate degree-granting program. Eligibility for these loans continues for one consecutive 12-month period. The maximum eligibility amounts are \$5,500 in the Subsidized Loan Program and \$5,000 in the Unsub-sidized Loan Program. Students are required to register for at least six credit hours in order to be eligible for the loan. A non-degree verification form must be completed each semester to determine eligibility. The Free Application for Federal Student Aid (FAFSA) must be on file with the Financial Aid Office in order to be considered for the Federal Stafford Loan programs. A student who has not been admitted as a Regular Graduate Student before the conclusion of the 12-month period will not be eligible for additional Stafford Loan assistance.

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Notification

The processing time for financial aid applications varies with each student. Students should allow, however, a minimum of six to eight weeks for processing. Award Notifications are mailed directly to the student. All awards are based on full-time enrollment (12 or more credit hours).

Students who receive financial aid, including loans and later receive an assistantship or other resources that exceed their cost of attendance will have their aid adjusted accordingly in order to comply with federal financial aid regulations.

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Student Enrollment Changes That Can Reduce Financial Aid Eligibility

There are three types of enrollment changes after aid has been disbursed that can reduce a student's **financial aid eligibility**. They are:

1. Dropped courses (the course will not appear on the transcript),
2. Official **withdrawal** (W grade) from ALL courses in a term, and
3. Unofficial **withdrawal** from ALL courses within a term; student does NOT RECEIVE ANY earned grades (A, B, C, D, F, I, T, SA, SB, SC, UD and UF). Student has not withdrawn officially.

Note: If a student withdraws (receives a W) from some, but not all, of his or her courses, aid adjustments are not required. However, students must be actively enrolled in at least six hours at the time a Stafford or PLUS loan is disbursed. For example, if a student originally enrolls for six hours, but withdraws (W grade) from one of his or her three-hour courses before the Stafford is posted to the student account, the loan cannot be disbursed. If the loan was disbursed prior to the student's **withdrawal** from the three-hour class, the University is not required to return the funds to the lender.

1. Dropped courses

When a course is dropped, it will not appear on the student's academic transcript. On the transcript, it will appear as if the student was never enrolled for the course. Drops normally occur during the stated "drop period," but can occur retroactively as in the case of some medical **withdrawals**.

Regardless of when the course drop occurs, dropping courses can affect the aid types listed below (and may affect others). If the award reduction/return of funds creates a balance due on the student account, the student will receive a bill from the University.

Federal Stafford and PLUS loans— Students must be enrolled at least half-time (six or more hours) to be eligible for a Stafford or PLUS loan. If the course drop results in a student being enrolled for less than six hours, all Stafford and PLUS loan funds must be returned to the lender.

Perkins Loans, Federal Work Study— University regulations require that students be enrolled at least half-time (six or more hours). If the course drop results in a student being enrolled for less than six hours, all Perkins funds must be returned. All FWS earnings must be transferred to University employment.

2. Official withdrawal from the University

When a student requests and receives a "W" in ALL courses, he or she is considered to have officially withdrawn from the University. Students who withdraw prior to completing 60 percent of the term have not "earned" all of their federal **financial aid** and a Return of Title IV Funds calculation must be performed. The unearned portion (based on the percentage of the term remaining) of the aid is returned to the lender or aid program. For example, if a student completes only 20% of the term, then he or she has failed to earn 80% of the federal **financial aid** that was disbursed, or could have been disbursed, prior to the **withdrawal**. If the return of the funds creates a balance due on the student account, the student receives a bill from the University.

3. Unofficial withdrawal from the University

Students who do not receive ANY "earned" grades (A, B, C, D, F, I, T, SA, SB, SC, UD, and UF) are considered to be unofficial **withdrawals** who stopped attending ALL of their courses

prior to the end of the term. Fifty percent of the aid used to pay direct educational costs (tuition, fees, room and board) must be returned to the lender or aid programs. If the return of the funds creates a balance due on the student account, the student receives a bill from the University.

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[Retroactive official withdrawals](#)

If funds have been returned for a student based on his or her unofficial [withdrawal](#), those funds cannot be reinstated if the student [petitions](#) for, and receives, a retroactive official [withdrawal](#) (all "W" grades).

[Miscellaneous](#)

Students who seek part-time jobs other than those offered through the Federal Work-Study program are advised to contact their academic department or refer to the jobs posted in [Rhodes Tower West](#), [Viking Hall](#), and [University Center](#).

For further information on aid programs, students should consult the Career Services Center, [Rhodes Tower West](#), Room 280.

[Veterans' Administration Educational Allowance](#)

Students eligible for the Veterans' Administration Educational Allowance who do not make satisfactory progress required at the end of the second probationary period will be terminated for Veterans' Administration purposes.

This termination will not affect a student's standing in school as long as the usual academic standards have been met.

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[Satisfactory Academic Progress Standards](#)

Students must achieve satisfactory academic progress (SAP) toward their degree in order to maintain [eligibility](#) for most types of [financial aid](#). To maintain SAP students must meet the following three components: [grade-point](#) average, completion rate requirement, and maximum time frame for degree completion. Additionally, students must be eligible to continue in their program of study in order to receive [financial aid](#).

Satisfactory academic progress will be evaluated at the end of each term for which the student is in attendance. Students who do not meet the [grade-point](#) average and completion rate requirements outlined below are given one term of [financial aid](#) probation. Failure to meet all the requirements at the end of the probationary term will result in loss of federal [financial aid](#), as well as state and institutional need-based [financial aid](#). Students who do not earn their degree within the specified time frame become ineligible as soon as they reach the specified time frame for their programs of study.

[Grade-Point Average Requirements](#)

[Graduate Students](#): All graduate students must:

- Maintain a minimum cumulative [grade-point](#) average of 3.00, and
- Remain eligible to continue in their program of study. Students who are dismissed by the University or by their graduate program are ineligible for federal [financial aid](#) for the program from which they were dismissed.

Completion Rate Requirement

Graduate Students: Students must successfully complete at least two-thirds (67 percent) of their attempted credit hours each term. Successful completion is defined as receiving a grade of A, B, C, or S. Multi-term courses, in which a T grade is assigned pending completion of the final terms, are treated as successfully completed during the initial term(s).

Note: A grade of W received when a student withdraws from a class has a negative impact on the completion rate. Credit hours in which a student receives a grade of W are included in the number of attempted hours, but do not count as successfully completed hours.

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Maximum Time Frame for Degree Completion:

Graduate Students: Students must complete their degrees within the following time frames:

- Six years from the date of entry into the [College of Graduate Studies](#) to complete the master's degree.
- Six years from the date of entry into the doctoral program to complete doctoral studies if the student entered the program with a master's degree from another institution or interrupted his or her studies at Cleveland State upon receipt of the master's degree.
- Ten years from the date of entry into the [College of Graduate Studies](#) to complete a doctorate if the student enrolls consecutively in the master's and doctoral programs without interruption of at least one academic year following receipt of the master's degree.

Impact of selected grades on SAP requirements

The [Financial Aid Office](#) has specific policies defining the effect of incompletes, withdrawals, absence of assigned letter grades, and [transfer credits](#) in the measurement of completion rate and maximum time frame.

Incompletes: Credit hours in which a student receives an I ([incomplete](#)) are included in the number of attempted hours, but do not count as successfully completed hours.

Withdrawals: Credit hours in which a student receives a grade of W are included in the number of attempted hours, but do not count as successfully completed hours.

Absence of an assigned letter grade: Credit hours in which a student receives a grade of **, I, NA, U, W, or X are included in the number of attempted hours, but do not count as successfully completed hours. Multi-term courses, in which a T grade is assigned pending completion of the final term, are treated as successfully completed during the initial term(s).

Transfer credits: [Transfer credits](#) are included in the total number of attempted hours for the measurement of maximum time frame.

Repeated hours: Hours for repeated courses as well as the initial hours for those courses are all included as attempted hours.

Academic reassessment: The financial aid SAP is always based on the grades and completion rate of the student's attempted hours, rather than the adjusted credit total that results from the academic reassessment.

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Probation

At the end of the academic year, students (who are not currently on financial aid probation) who do not meet the **GPA** or completion-rate requirements will be placed on **financial aid** probation for the following term. Their progress will be measured again at the end of their probationary term.

Loss of eligibility

Students become ineligible for federal **financial aid**, as well as for state and institutional need-based **financial aid** when:

- Students fail to meet the **GPA** or completion-rate requirement at the end of their probationary terms; or
- Students have attempted the maximum allowable credit hours for their programs of study. (If a student reaches the maximum time frame during an award year, he or she becomes ineligible to receive additional federal and state need-based **financial aid**, and any aid that has been awarded for future terms will be cancelled.); or
- Students are dismissed by the University or their graduate programs.

Regaining eligibility

- Students who attend school (without federal **financial aid** or state and institutional need-based **financial aid**) and meet the **GPA** and completion-rate requirements regain their **financial aid** eligibility for future terms.
- A student who is ineligible for **financial aid** due to failure to make satisfactory academic progress during the probationary period may submit a petition for reinstatement of **financial aid** eligibility. If the petition is approved, the student's probationary period will be extended for one term and the student will be eligible to receive **financial aid** during the extended probationary period.
- Students who regain **eligibility**, either by meeting the satisfactory academic progress standards or by approval of their **petitions** for reinstatement, may be eligible for Federal Pell Grants, Supplemental Educational Opportunity Grants, Perkins Loans, Federal Work Study, Federal Stafford Loans, and state need-based aid beginning with the term in which they are determined to be eligible.

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Petition for Reinstatement of Financial Aid Eligibility

Students who wish to petition for reinstatement of **financial aid** eligibility may submit a written petition to the Financial Aid Office. In order to submit a petition, a student must:

1. Complete both sides of the Petition for Reinstatement of Financial Aid (available at the web site www.csuohio.edu/fao/download.html). Documentation supporting the student's case should be attached.
2. Explain the mitigating circumstances that contributed to the failure to meet satisfactory academic progress.

The student is encouraged to schedule an appointment to meet with his or her academic advisor to discuss academic progress and identify ways in which he or she can improve academic performance.

Petitioners will receive a written response no later than four weeks after submitting the necessary information.

If the petition is denied, the student will be responsible for all charges incurred as a result of

the loss of federal and state need-based financial assistance.

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- Master of Arts and Master of Science in Mathematics
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Application and Recommendation Forms

FORMS REQUIRING ACROBAT READER: [\(Download Free Acrobat Reader\)](#)

- [Online Application \(Internet Access Required\)](#)
For U.S. Citizens, Permanent Residents of the United States, and International Students applying for graduate degree, CSU graduate certificate, graduate teaching licensure, and graduate non-degree admission.
- [Application Form and Instructions for Graduate Application](#)
- [Recommendation Form for Graduate Degree Applicants](#)

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Mailing Address

Cleveland State University
College of Graduate Studies
2121 Euclid Avenue
Parker Hannifin Hall 218
Cleveland, OH 44115-2214

Campus Location

Parker Hannifin Hall, Room 218
2258 Euclid Avenue

Phone: 216.687.9370

Fax: 216.687.9214

Web Content Contact

Charles Newton
grad@csuohio.edu

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Do you have Questions?

If you are a prospective Cleveland State University Graduate Student and have questions, please complete the following [request information form](#) and a graduate admissions representative will respond to your questions.

If you are a current Cleveland State University Graduate Student

Please Contact the [College of Graduate Studies](#) at 216.687.9370 or Fax: 216.687.9214





College of Graduate Studies

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<ul style="list-style-type: none"> • (ACT) Accounting • (ADM) Administration • (ALD) Adult Learning • (ART) Art • (BIO) Biology • (BLW) Business Law • (CHE) Chemical Engineering (Doctoral) • (CHM) Chemistry • (CIS) Computer and Information Science • (COM) Communication • (CNS) Counseling • (CVE) Civil Engineering (Doctoral) <p>[return to top]</p>	<ul style="list-style-type: none"> • Accounting • Applied Biomedical • Art <ul style="list-style-type: none"> ◦ Art Education ◦ Studio Art • Biology • Business Administration (Doctoral) • Business Law • Chemistry • Communication • Computer and Information Science <p>[return to top]</p>
<ul style="list-style-type: none"> • (DBA) Doctor of Business Administration • (EBA) Executive MBA • (ECE) Early Childhood Education • (ECN) Economics (Doctoral) • (EDA) Counseling, Administration, Supervision, and Adult Learning • (EDB) Education Curriculum and Foundations • (EDC) Elementary and Secondary Education • (EDL) Literacy Development and Instruction • (EDM) Middle Childhood Education • (EDS) Secondary Education • (EDU) Doctoral Education • (EEC) Electrical and Computer Engineering (Doctoral) • (EGT) Education Gifted • (ENG) English • (ENV) Environmental Studies • (ESC) Engineering Science • (ESE) Special Education • (ESL) English as a Second Language • (EST) Specialized Study and Field Experiences • (ETE) Education Technology • (EVE) Environmental Engineering • (EVS) Environmental Science <p>[return to top]</p>	<ul style="list-style-type: none"> • Economics (Doctoral) • Education <ul style="list-style-type: none"> ◦ Adult Learning and Development ◦ Counseling ◦ Curriculum and Foundations ◦ Early Childhood ◦ Educational Administration ◦ Elementary and Secondary ◦ Gifted ◦ Health, Physical Education, Recreation, and Dance ◦ Literacy Development and Instruction ◦ Middle Childhood ◦ Secondary ◦ Special ◦ Sports Management, Physical Education, and Exercise Science ◦ Technology ◦ Urban Education <p>[return to top]</p>

- (FIN) Finance (Doctoral)
- (FRN) French
- (GAD) General Administration
- (GER) German
- (HCA) Health Care Administration
- (HED) Health Education
- (HIS) History
- (HPR) Health, Physical Education, Recreation, and Dance
- (HSC) Health Sciences
- (IME) Industrial and Manufacturing Engineering (Doctoral)
- (IST) Information Systems
- (LAW) Law
- (MBA) Master of Business Administration
- (MCE) Mechanical Engineering (Doctoral)
- (MKT) Marketing (Doctoral)
- (MLA) Modern Languages
- (MLR) Management and Labor Relations (Doctoral)
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- (MME) Engineering Mechanics
- (MTH) Mathematics
- (MUA) Applied Music
- (MUS) Music

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- (NUR) Nursing Program
- (OMS) Operations Management and Business Statistics (Doctoral)
- (PAD) Public Administration
- (PDD) Urban Planning Design and Development
- (PED) Sports Management, Physical Education, and Exercise Science
- (PHL) Philosophy
- (PHY) Physics
- (PSC) Political Science
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- Urban Studies (Doctoral)

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For information on the Master of Public Health and the Joint MSN/MBA programs, see the Health Professions section of this Catalog.

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- Speech Pathology and Audiology

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Master of Accountancy (See Addenda)

Department of Accounting

Ahuja Hall 512

(216) 687-4720

[//www.csuohio.edu/cba/academic/graduate/act.html](http://www.csuohio.edu/cba/academic/graduate/act.html)

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The Faculty

Professors:

Richard A. Epaves, Emeritus
 Jayne Fuglister
 Lal C. Jagetia, Emeritus
 Elise G. Jancura, Emerita
 Lawrence A. Kreiser, Chair
 Bruce McClain
 David Meeting
 Heidi Meier
 Charles Nagy, Emeritus

Associate Professors:

Byron Baird, Emeritus
 Theresa Johnson Holt
 Eric Obersteiner, Emeritus
 Sidney Paul, Emeritus
 Peter Poznanski
 Etmun Rozen
 Abba V. Spero

Assistant Professor:

Scott A. Yetmar

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Accreditation (See Addenda - May 01, 2005)

The graduate programs of the James J. Nance College of Business Administration are accredited by AACSB International. In addition to the business accreditation, the curricula of the Accounting Department have accounting accreditation from the AACSB. The accounting programs at Cleveland State were the first in the State of Ohio to receive this accreditation.

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Introduction

The primary aim of this program is to develop competent accountants, knowledgeable in the areas of professional practice—financial accounting/audit and tax. The program accommodates students on a full-time or part-time basis.

This program appeals to four general classifications of students:

1. Undergraduate accounting majors who wish to broaden their knowledge of accounting and expand their expertise in financial accounting/audit or taxation.
2. Undergraduate computer and information science majors who wish to expand their expertise to the area of accountancy.
3. Undergraduate business administration majors in areas other than accounting and computer and information science who wish to specialize in accountancy.
4. Students with undergraduate preparation in any area and a strong interest in the practice of accountancy.

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Faculty Research and Publications

Accounting faculty members have published numerous books and journal articles. For example, they have written or edited textbooks on computer auditing and control, cost accounting, financial accounting, and federal taxation. Articles written by departmental faculty have appeared in the following journals:

Accounting Review

Journal of Accounting Research

Behavioral Research in Accounting

Journal of Accountancy

The Internal Auditor

Catalyst

Journal of Business Ethics

The International Journal of Accounting

Strategic Finance

Journal of the American Taxation Association

Cornell Hotel and Restaurant Administration Quarterly

Journal of Taxation

Journal of Accounting Education

Journal of Management Information Systems

Information Systems Audit and Control Journal

Tax Adviser

The CPA Journal

Applied Business and Administration Quarterly

The Practical Accountant

Journal of Business, Finance, and Accounting

Corporate Controller

Practical Tax Strategies

Today's CPA

Bank Accounting and Finance

Extensive computer facilities and databases are available to aid the research efforts of faculty members and graduate students.

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Financial Assistance

The College of Business Administration has a limited number of [graduate assistantships](#) available each year. Students may apply for an assistantship by completing an [application form](#) available from the Graduate Business Programs Office. Copies of completed applications are circulated to department chairs, graduate program directors, and other appropriate parties within the College. Interviews with prospective graduate assistants are arranged directly by department chairs and others who hire and supervise graduate assistants.

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Career Information

The Master of Accountancy is designed to prepare students for careers in business, internal audit, government, consulting, and public accounting. The primary goals and objectives of the program are to develop competent accounting professionals who are knowledgeable in the various areas of professional practice and who possess:

- the ability to provide, interpret, and communicate financial and operating information essential to understanding the activities of an enterprise;
- the preparation to assume increasing levels of responsibility and leadership in the organizations they join; and
- the qualifications to enter advanced programs in business and/or accounting.

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Programs of Study

The Master of Accountancy allows the student to pursue one of two programs of study:

1. The Financial Accounting/Audit program is designed to develop competent accountants, who are knowledgeable in financial processes and procedures and are able to provide and interpret sophisticated financial information for the business community.
2. The Tax program prepares individuals for entry into, as well as advancement in, professional tax practice.

The Master of Accountancy provides students with the opportunity to develop basic technical and statistical skills, to obtain a knowledge of the business disciplines, and to pursue advanced course work in accounting or taxation. Graduates of the program are prepared to enter the accounting profession and to pursue satisfying and stimulating lifelong careers. Many graduates join public accounting firms, while others seek a variety of positions in the private and public sectors. Graduates of the program are well received and perform well in their job assignments, according to employers of graduates of the program. A large percentage of students become CPAs, and recently there has been an increased interest in the Certified Management Accountant (CMA), the Certified Fraud Examiner, the Certified Internal Audit or (CIA), the Certificate in Financial Management, and the Certified Information Systems Audit or (CISA) examinations.

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Admission Information

Applicants to the Master of Accountancy program must have:

1. A total of at least 950 points based on the formula: 200 times the overall **grade-point** average plus the Graduate Management Admission Test (**GMAT**) score; or at least 1,000 points based on the formula: 200 times the upper-division **grade-point** average plus the **GMAT** score.
2. Students scoring below the 20th percentile on the verbal section of the **GMAT** are required to take the following **remedial** courses in business communication: **GAD 502** (16th through 19th percentile); or **GAD 501** and **GAD 502** (below the 16th percentile). Students scoring below the 25th percentile on the quantitative section of the **GMAT** are required to take a two-credit course, **OMS 500**. The **GMAT** may be waived for applicants holding a Ph.D. or M.D. degree. Medical doctors must be licensed to practice in the United States in order to take advantage of this waiver. Registration information for the **GMAT** is available in the Office of Graduate Admissions (Rhodes Tower West, Room 204) or the Cleveland State University Testing Center (University Center, Room 253B). For **GMAT** test information, visit the web site at www.gmat.com. A score from the Graduate Record Examination (**GRE**) cannot be substituted for the **GMAT**.
3. An official transcript from each college and university previously attended must be sent to the Office of Graduate Admissions.

The Master's Programs Committee of the College of Business Administration meets periodically to review admission requirements. Please call the Graduate Business Advising Office at (216)687-3730 to obtain additional information.

To facilitate the admission process, it is strongly recommended that applicants use the online application system at www.csuohio.edu/admissions/gradForm.html. The processing time for paper application forms is longer.

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Degree Requirements

The Master of Accountancy is awarded on the basis of successful completion of the 33 credit hours of Professional Preparation (Level III). Preparation for taking Level III courses is through completion or waiver of all Level I and Level II course requirements. Students are not normally allowed to register for Level III courses until all Level I and Level II courses have been either taken or waived. **Petitions** must be approved by the Master of Accountancy Program Director.

Courses in the three levels are as follows:

Level I: Basic Skill Proficiency

(12 credits)

Courses in Level I are designed specially to bring skills up to acceptable levels for completing graduate-level work. These courses may be waived on the basis of prior courses, work experience, or by examination. Familiarity with Microsoft Windows, Microsoft Office, and the Internet is required.

GAD 501 Business English (4-0-4)

GAD 502 Intermediate Business English (3-0-3)

OMS 500 Mathematical Models for Business (2-0-2)

OMS 503 Statistical Methods for Business Decisions (3-0-3)

Level II: Accounting and Basic Business Knowledge (See Addenda - November 24, 2004)

(32 credits)

Courses in Level II provide knowledge of the basic business disciplines to prepare students for the upper-level graduate courses. These courses are waivable on the basis of recent undergraduate business course work.

ACT 501 Financial Accounting (3-0-3)

ACT 600 Managerial Accounting (2-0-2)

ACT 611 Financial Accounting: Resources (3-0-3)

ACT 612 Financial Accounting: Equities (3-0-3)

ECN 503 Economic Concepts (3-0-3)

FIN 501 Financial Management (3-0-3)

GAD 515 Communications for Managers (3-0-3)

MBA 500 Environment of Business (3-0-3)

MLR 501 Management and Organizational Behavior (3-0-3)

MKT 501 Marketing Theory and Practice (3-0-3)

OMS 511 Operations Management (3-0-3)

Level III Courses—Professional Preparation (See Addenda - November 24, 2004)

(33 credits)

Level III course work prepares the student for successful entry into the profession. Students may choose between two programs—Financial Accounting/Audit and Tax

Financial Accounting/Audit Program Requirements

A. Accounting(18 credit hours)

ACT 621 Federal Income Taxation (3-0-3)* or ACT 636 Federal Income Taxation of Corporations and Shareholders (3-0-3)

ACT 622 Attest Function (3-0-3)*

ACT 631 Selected Topics in Accounting (3-0-3)*

ACT 639 Accounting Policy (3-0-3)

Two ACT electives (six credits)

B. Information Systems(15 credit hours)

ACT 553 Information Systems Auditing (3-0-3)*

ACT 688 Accounting Systems (3-0-3)*

Two IST/CIS electives (six credits)

Business elective (three credits)

Tax Program Requirements

A. Taxation(12 credit hours)

ACT 621 Federal Income Taxation (3-0-3)**

ACT 636 Federal Income Taxation of Corporations and Shareholders (3-0-3)

ACT 637 Taxation of Partnerships (3-0-3)

ACT 638 Tax Research and Planning (3-0-3)

B. Taxation, Accounting, and Business Electives(21 credit hours)

Three ACT electives (Tax) (nine credits)

ACT elective (Accounting or Tax) (three credits)

Three accounting or business electives (nine credits)

*With successful completion of an equivalent course, this course will be waived and an additional ACT or IST course at the same level will be required.

**With successful completion of an equivalent course, this course will be waived and an additional tax course at the same level will be required.

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Degree Candidacy

A student becomes a candidate for the Master of Accountancy degree upon:

1. Completion of the preparatory program.
2. Approval of a program of study.

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Courses

For a listing of Accounting courses and descriptions, see the College of Business Course Descriptions section of this Catalog.

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College of Graduate Studies

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Graduate Catalog 2004-2006

College of Business Course Description (See Addenda)

Students enrolled in the 700-level section of cross-listed 600/700-level courses are required to do additional work.

[Accounting](#) (See Addenda)

ACT 501 Financial Accounting (3-0-3). Basic accounting theory and practice. Thorough coverage of accounting measurement of income and financial position, including the analysis of business events and their effect on the financial position and income of a business. Closed to students who have completed the equivalent of ACT 221 or ACT 222. (Not available for elective credit.)

ACT 553 Information Systems Auditing. (3-0-3). Prerequisite: ACT 688 or equivalent. Problems of accuracy and control in computer-oriented applications. Changing audit techniques, especially loss of traditional audit trial opportunities; control problems affected by batch systems and by direct access and real-time systems.

ACT 555 Internal Auditing (3-0-3). Prerequisite: ACT 501. Use of theory and practical application of internal control and internal auditing for management purposes.

ACT 560 International Accounting (3-0-3). Prerequisite: ACT 501. Coverage of the international dimensions of accounting, including topics in financial and managerial accounting, auditing, taxation, and transfer pricing issues. Discussion of comparative accounting systems and the process of harmonizing accounting standards.

ACT 562 Tax II (3-0-3). Prerequisite: ACT 621 or an undergraduate course in tax. Taxation of the income of various business entities and estates and trusts; federal estate and gift taxes; state and local taxes; methodology of researching intricate tax problems.

ACT 584 Governmental and Institutional Accounting (3-0-3). Prerequisite: Introductory courses in accounting or ACT 501. Accounting principles, standards, and procedures applicable to enterprises operated not-for-profit, e.g., governmental units, institutions such as universities and hospitals, charitable organizations, fraternal organizations, religious groups, clubs, and others.

ACT 600 Managerial Accounting (2-0-2). (See Addenda) Prerequisite: ACT 501. Development of analytical skills using management accounting problems. Emphasis on the basics of managerial accounting; using managerial accounting for planning, controlling, and decision-making purposes; and the behavioral implications of using managerial accounting methods in decision making. For M.B.A. students.

ACT 611 Financial Accounting: Resources (3-0-3). Prerequisite: ACT 501. Use of comprehensive analysis of financial accounting theory with emphasis on the complexities of accounting for financial resources. Where appropriate, the relationship with related liabilities and equities is investigated. Analysis is performed within the framework of the standards established by the Financial Accounting Standards Board. Closed to students who have completed ACT 331 and ACT 332.

ACT 612 Financial Accounting: Equities(3-0-3). Prerequisite: ACT 611. Comprehensive analysis of financial accounting theory with emphasis on the complexities of accounting for liabilities and equity. Where appropriate, the relationship with related financial resources is investigated. Analysis is performed within the framework of the standards established by the Financial Accounting Standards Board. Closed to students who have completed ACT 331 and ACT 332.

ACT 613 Legal and Ethical Environment of Accountancy (3-0-3). The relationship of accountancy to its legal environment; accountants' legal liability, contracts, commercial paper, sales, bailments, bankruptcies, corporations, partnerships, and regulatory law.

ACT 621 Federal Income Taxation (3-0-3). Prerequisite: ACT 501. A comprehensive consideration of the basic process for determining the federal income-tax obligation of individuals and corporations. Closed to students who have completed ACT 361 and ACT 462, except by departmental permission.

ACT 622 Attest Function (3-0-3). Prerequisites: ACT 612 and ACT 688. Theory of the auditing function and its relationship to professional standards, ethics, internal control systems, nature of evidence, fieldwork, methodology, and types of opinions. Closed to students who have completed ACT 451. (With the successful completion of an equivalent course, this course will be waived and an additional accounting course at the 600 level will be required.)

ACT 631 Selected Topics in Accounting (3-0-3). Prerequisite: ACT 612. Coverage of advanced topics in financial accounting. Covers consolidated statements, foreign currency transactions, SEC disclosure rules, interim reporting, segment reporting, inflation accounting, and not-for-profit accounting. Closed to students who have completed ACT 332 and ACT 441. (With the successful completion of an equivalent course, this course will be waived and an additional accounting course at the 600 level will be required.)

ACT 632 Auditing Standards and Techniques (3-0-3). Prerequisite: ACT 622 or equivalent. Critical analysis of techniques used in auditing; interrelation of audit standards, procedures, principles, and techniques; trends and developments in the profession of public accounting; report forms; contents, certificates, and comments; auditors' rights and responsibilities; published corporation reports; requirements of the American Institute of Certified Public Accountants, the Securities and Exchange Commission, and other regulatory agencies; and case studies.

ACT 633 Cost Accounting Theory and Analysis (3-0-3). Prerequisite: ACT 600 or equivalent. Covers advanced quantitative techniques in managerial accounting systems, including computer application. Includes diverse topics in cost/managerial accounting combining aspects of theory and practice.

ACT 634 Accounting Concepts and Principles (3-0-3). Prerequisites: ACT 612 and ACT 631. An advanced survey of accounting concepts and principles designed to develop an understanding of recurring issues in accounting theory and their development in a global context.

ACT 636 Federal Income Taxation of Corporations and Shareholders (3-0-3). Prerequisite: ACT 621 or equivalent. A comprehensive analysis of the federal income tax problems of corporations and shareholders, including S corporations.

ACT 637 Taxation of Partnerships (3-0-3). Prerequisite: ACT 621 or equivalent. A comprehensive analysis of the federal income tax problems of partnerships.

ACT 638 Tax Research and Planning (3-0-3). Prerequisites: Two undergraduate courses in taxation or ACT 621. A thorough review of the tax research and planning process; discussion of current developments in federal, state, and local taxation. Tax research project required.

ACT 639 Accounting Policy (3-0-3). Prerequisite: Advanced standing in Master of

Accountancy program or permission of instructor. Integration of knowledge developed in the program, SEC regulations, and accounting research with the objective of formulating policy through rational use of these principles.

ACT 641 Estate and Gift Taxation (3-0-3). Prerequisite: ACT 621. A study of federal estate and gift laws involved in the planning of inter vivos and testamentary transfers of property.

ACT 642 Tax Practice and Procedure (3-0-3). Prerequisite: ACT 621. Examines the administration and enforcement of the Internal Revenue Code with a focus on practitioner strategy.

ACT 643 Corporate Taxation II (3-0-3). Prerequisite: ACT 636. Examination of the income tax laws relating to corporate reorganizations and filing consolidated returns by affiliated corporations, the tax consequences to parties involved, and relevant judicial doctrines.

ACT 644 Estate Planning (3-0-3). Prerequisite: ACT 641. A study of estate tax and federal income taxation of estates and trusts, with emphasis on planning the estate for disposition of property, tax minimization, liquidity requirements, and administrative costs.

ACT 645 Taxation of International Transactions (3-0-3). Prerequisite: ACT 621. A detailed study of more advanced areas of taxation and tax planning for individuals, including investment, insurance, and retirement planning.

ACT 648 State and Local Taxation (3-0-3). Prerequisite: ACT 621. Examines common state and local taxation of individuals and businesses, including taxation of multistate businesses.

ACT 649 Tax Accounting (3-0-3). Prerequisite: ACT 621. Attention to the timing of recognition of income, tax depreciation, installment reporting, imputed interest, and tax credits.

ACT 653 Advanced Information Systems Auditing (3-0-3). Prerequisite: ACT 553. Provides the opportunity for the student to gain an awareness of computer-assisted auditing techniques (CAAT), an understanding of specific CAAT software, and an appreciation for future CAAT development. In addition, the student is exposed to a series of topics of current professional interest.

ACT 688 Accounting Systems (3-0-3). Prerequisite: ACT 611. Business systems as viewed by the profession of accounting; system analysis, flow charting, and system design applied to a range of firms, from those with a minimum of electronic and mechanical devices to firms with the most sophisticated types of electronic data-processing equipment; emphasis on business system design to accumulate and communicate information to officials controlling the activities of the enterprise. (With the successful completion of an equivalent course, this course will be waived and an additional accounting course will be required.)

ACT 690 Professional Accounting Internship (one to four credits). Prerequisite: Permission to register must be obtained from the Accounting Chair early in the semester prior to enrollment in the course. Requires professional accounting work experience in an organizational environment that extends the curriculum and provides meaningful experience related to the student's area of interest. Term report required.

ACT 696 Current Problems in Accounting (one to three credits). Prerequisite: ACT 600 or ACT 612. Selected problems in the field of accounting. With permission of instructor, may be repeated if topics vary.

ACT 698 Independent Study (one to four credits). Prerequisites: Two elective courses in accounting, at least one of which must be at the 600 level; prior approval of a written proposal by ACT faculty advisor and permission of Department Chair. Study of a significant problem or area in accounting, conducted under the supervision of the faculty advisor. Term report required.

[ACT 899 Dissertation \(variable credit\)](#). Prerequisite: Successful completion of comprehensive examinations.

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Computer and Information Science

(also see [Information Systems](#))

The CIS course titles preceded by an asterisk (*) are intended for non-majors or for satisfaction of the preparatory program requirements and are not available for credit toward the Master of Computer and Information Science degree.

[*CIS 500 Introduction to Programming \(4-0-4\)](#). Introduction to the principles of computation, problem-solving methods, and algorithm development using a popular programming language. Development of good programming style and basic skills of designing, coding, debugging, and documenting programs. Use of libraries and conditional compilation. Topics include functions, arrays, strings, structures, recursion, file I/O, pointers, and introduction to linked lists.

[*CIS 505 Analytical Methods in Computer Science \(4-0-4\)](#). Prerequisite: [OMS 500](#). Methods and concepts necessary for use in computer programming, data structures, relational databases, algorithm analysis, and other areas of computer science. Topics include sets, combinatorics, logic, induction, relations, functions, graphs and trees, recurrence equations, and introduction to proof of program correctness.

[*CIS 506 Data Structures and Algorithms \(4-0-4\)](#). Prerequisites: [CIS 500](#) and [OMS 500](#). Continuation of [CIS 500](#). Emphasis on data structures and their use. Topics include stacks, queues, linked lists, trees, and graphs; complexity analysis of sorting, searching, and hashing algorithms.

[*CIS 508 Internet Programming \(4-0-4\)](#). Prerequisite: [CIS 506](#). Introduces Internet and intranet programming languages such as HTML, XML, Perl, JavaScript, and ASP in the context of building Internet and World Wide Web applications. Discusses other technologies including Unix, socket programming, remote procedure calls, and web-based application servers.

[CIS 524 Comparative Programming Languages \(4-0-4\)](#). Prerequisite: [CIS 506](#). A short history of programming languages and styles precedes the study of an important collection of programming paradigms. The major programming paradigms are surveyed, including procedural, functional, object-oriented, graphical-user-based, and logic programming.

[*CIS 530 Database Systems and Processing \(4-0-4\)](#). Co-requisite: [CIS 506](#). Database systems; their application, advantages, and disadvantages; layered architecture and its physical/logical organization. Relational databases, foundations, and applications. Detailed study of query languages, including relational algebra, Structured Query Language (SQL), Query-By-Example (QBE). Other non-relational systems including the network and hierarchical database models, their data definition and manipulation sub-languages. Data abstraction, E-R models, normalization theory.

[*CIS 535 Language Processors \(4-0-4\)](#). Prerequisite: [CIS 506](#). Foundations of PC architecture and assembly language. Topics include machine language, hardware fundamentals, registers, numbering systems, datadefinition, and addressing modes. Fundamentals of systems programming, including the implementation and use of assemblers, macro processors, linkers, loaders, and compilers. Examples of language processors are studied on various computers.

[*CIS 540 C/C++ for Systems Programming \(2-0-2\)](#). Co-requisite: [CIS 506](#). Covers the basics of the C/C++ languages and standard library functions needed for systems programming. Teaches students with a Java background to write C/C++ programs using

standard library functions.

CIS 543 Graphical User Interfaces (3-0-3). Prerequisites: CIS 545, and CIS 559 or CIS 568. Graphical-user interfaces for advanced bit-mapped display systems characterized by close interaction with pointing devices. Consideration of both the underlying application programming interfaces as well as the use of a framework of C++ classes. Use of an interactive environment for design and debugging. A specific industry standard system is explored in detail with extensive programming involvement.

***CIS 545 Architecture and Operating Systems (4-0-4).** Prerequisite: CIS 506. PC architecture, including interrupts, I/O handling, and memory management. Management of computer resources by an operating system, including hardware, processes, main memory, file systems, input/output, synchronization, and deadlocks. Along with the concepts, an in-depth study of a real operating system is presented and its interfaces examined at the command level as well as the system call level. Finally, topics unique to distributed operating systems are examined, including communication, synchronization, and distributed file systems.

CIS 554 Data Communications and Networking (4-0-4). Prerequisite: CIS 545. Data communications: characteristics of physical transmission media, including international standards for data encoding and device interfacing; transmission principles, modems and multiplexors, data link protocols, mechanisms for error detection/correction, and flow control. Computer Networks: broad survey of existing networks; network topology; network layers from the ISO OSI reference model; network programming; analytical tools for network analysis and design.

CIS 559 Object-oriented Programming in C++ (3-0-3). Prerequisite: CIS 506. The methodology of object-oriented design and programming using the C++ language. Previous knowledge of C is required. The C++ language includes built-in data types, pointers, classes, operator overloading, code reusability via simple and multiple inheritance, polymorphism, stream I/O, and the use of class libraries.

CIS 568 Object-oriented Design and Programming (4-0-4). Prerequisite: CIS 506. Builds on basic knowledge of computer programming and Java language. Presents in-depth practical exposure to object-oriented analysis and design. Based on the fundamental O-O concepts of inheritance and polymorphism. Introduces Unified Modeling Language (UML). Examines how fundamental building blocks of encapsulation, inheritance, and polymorphism can be put together to build sensible libraries/packages of classes.

***CIS 569 Java Programming (4-0-4).** Prerequisite: CIS 559. An in-depth look at the Java programming language. Classes and objects in Java, Java applets and applications, graphics, basic and advanced GUI components of Java, exception handling and multithreading in Java, files and streams. Use of Java on the Internet, networking, and Java Beans. Event-driven programming in Java.

CIS 590 Foundations of Computing (3-0-3). Prerequisites: CIS 505 and CIS 506. Sets, relations, regular languages, finite automata, context-free languages, pushdown automata, phrase-structure languages, Turing machines, Church's theory, recursion, computability, decidability, computational complexity.

CIS 600 Computer Architecture (4-0-4). Prerequisite: CIS 545. Logic circuit design concepts, including various CPU implementation methods. Architectural features of minicomputers and microcomputers, including processor organization and control, storage addressing, and input/output structures; emphasis on impact on application and system software; detailed study of popular minicomputers and microprocessors and their use of architectural features.

CIS 601 Graduate Seminar in Computer and Information Science (1-0-1). Prerequisite: Completion of the M.C.I.S. preparatory program. Introduction to current research topics in computer science and information systems. Explores how research is done in these areas. State-of-the-art industrial practices also examined. Students prepare presentations on current research topics in computer science or information systems based on surveys of recent articles.

Must be taken the first semester after completion of the preparatory program.

CIS 606 Analysis of Algorithms (3-0-3). Prerequisites: CIS 505 and CIS 506. Algorithms and their time/space complexities; models of computation; design of efficient algorithms: recursion, divide-and-conquer, dynamic programming; algorithms for sorting, searching, and graph analysis. Algorithms for parallel computing

CIS 611 Relational Database Systems (3-0-3). Prerequisites: CIS 505 and CIS 530. Detailed study of the relational model of data, including its query languages: relational algebra and relational calculus. Expressive power of query languages. Design of relational databases, functional and multivalued dependencies, normalization theory, elimination of update anomalies, lossless joins, and dependency-preserving decompositions. Exposure to practical aspects of relational design and query evaluation.

CIS 612 Advanced Topics in Database Systems (3-0-3). Prerequisites: CIS 505 and CIS 530. Discussion of data models, including relational, functional, ER, enhanced ER, object-oriented, and networks. Query processing and optimization. Transaction handling, recovery, and concurrency control. Enforcing security and integrity constraints. Distributed and multimedia databases. Hands-on experience with some relational/non-relational DBMS systems.

CIS 620 Comparative Operating Systems Interfaces (4-0-4). Prerequisite: CIS 545. Processes and interprocess communication. Network interfaces and socket programming. Event-driven and Windows-programming concepts, including geometry managers, events and bindings, and window managers. Command-level shell programming, program-development tools, and file systems. Distributed operating system considerations.

CIS 630 Enterprise Application Development (4-0-4). Prerequisite: CIS 569. Issues surrounding the development of distributed applications, including their architecture, design, and implementation; use of the Java Enterprise APIs; includes servlets, JavaServer Pages (JSP), Java Database Connectivity (JDBC), RMI, CORBA, JNDI, Enterprise JavaBeans, and XML; design and development of complex, distributed web applications.

CIS 631 Distributed Object Systems (4-0-4). Prerequisite: CIS 630. Surveys the tools, techniques, and design principles behind large-scale web-based systems; covers many of the design, deployment, and maintenance issues that are likely to arise in practice. Both multi-tier and peer-to-peer architectures are discussed. Students gain practical experience in design, implementation, deployment, and testing of simple distributed systems under RM, CORBA, SOAP, and web services.

CIS 632 Mobile Computing (4-0-4). Prerequisite: CIS 630. Improvements in wireless networks, device technology, and device-based services have materialized over the last few years, resulting in an explosion in the usage of mobile technology. This course teaches the latest in wireless technologies, including wireless networks, wireless carriers, operating systems for mobile devices, wireless security, WAP (Wireless Application Protocol), WML (Wireless Markup Language), and microbrowsers. Design and implementation of wireless applications using Sun's J2ME (Java 2 Micro Edition), including applications that utilize user interfaces, graphics, multimedia (the Mobile Media API for J2ME), storage to device's database, and network connections.

CIS 634 Object-oriented Software Engineering (4-0-4). Prerequisite: CIS 568 or permission of instructor. Presents concepts, principles, and methods in software architectures, and object-oriented software engineering. Required project gives students an opportunity to apply the knowledge acquired from this course by undertaking the development of a small-scaled software system. By the end of the course students should: 1) understand the differences between the structured paradigm and the object-oriented paradigm in software development; 2) understand the concepts, principles, and state-of-the-art methods in software architectures and its relationship to other areas of software engineering, specifically requirements, OO analysis and design, and implementation; and 3) be able to design, manage, and implement a computer-based software system using the OO software engineering approach in a group setting.

CIS 635 Software Engineering Metrics, Economics, and Management (4-0-4).

Prerequisite: CIS 568 or permission of instructor. Successful software projects need to deal with people and economic considerations, as well as technical considerations. This course enables the student to understand the fundamental principles underlying software management and economics; to analyze management situations via case studies; to analyze software cost/schedule tradeoff issues via software cost-estimation tools and microeconomic techniques; and to apply the principles and techniques to practical situations. A special focus is on rapid application development (RAD), a critical success factor for many projects, and on emerging agile methods for realizing RAD.

CIS 640 Parallel Computers and Programming (3-0-3). Prerequisite: CIS 600.

Continuation of computer architecture; microprogramming and its use; architecture of device interfaces, including CRT and floppy-disk interfaces, direct-memory-access support chips; object-oriented computer architectures; special machine organizations, including stack, vector, and parallel machines. Software environments and program-development techniques for parallel computers.

CIS 650 Compiler Design (3-0-3). Prerequisites: CIS 535 and CIS 620. Practical overview of the principles involved in the design and construction of translators. Language theory and its relation to push-down automata, parsing methods, finite-state machines and lexical methods, including data representation and run-time environments. In-depth coverage of major parsing and syntax-directed translation ranging from top-down recursive-descent methods, including LL(k) and SLL(k), to bottom-up LR methods, including simple LR, canonical LR, and lookahead LR, with exposure to the yacc parser generator tool. Lexical analysis, including regular expressions, finite-state machines, and the lex scanner generator tool.

CIS 657 Computer Graphics and Imaging (4-0-4). Prerequisites: CIS 506 and CIS 540.

The fundamental principles of traditional computer graphics, including algorithms for 2D and 3D graphics. Also covers the sophisticated imaging capabilities in Java 2D and the powerful functionality of the new JAI APIs. Students learn how to create all types of graphics; how to load, render, and manipulate images, and how to perform image analysis. The APIs can be used to create cross-platform, Internet-enabled imaging software.

CIS 658 Multimedia Computing (4-0-4). Prerequisite: CIS 506. Introduces digital capture, representation, processing, and playback of multimedia data – audio, video, and images. Java is used for programming assignments and Java media APIs are studied and used. Commercial products for multimedia capture, editing, and broadcast also are used.

CIS 662 Performance Analysis of Computer Systems (3-0-3). Prerequisites: CIS 600 and CIS 620. View of computer hardware, software, and applications from a queuing perspective; analysis of single queues and queuing networks for evaluation of system performance; operational analysis.

CIS 665 Artificial Intelligence Languages and Applications (3-0-3). Prerequisites: CIS 505 and CIS 506. Investigation and application of major symbolic AI languages; functional language Lisp; logic programming using Prolog; knowledge-discovery techniques including machine learning, and other symbolic AI techniques.

CIS 666 Topics in Artificial Intelligence (3-0-3). Prerequisites: CIS 505 and CIS 506.

Study of recent AI techniques important for practical applications, including neural networks, genetic algorithms and evolutionary computing, fuzzy systems, and chaotic systems.

CIS 667 Bioinformatics (4-0-4). Prerequisite: CIS 506. An introductory course in biology or chemistry is recommended, but not required. Computational methods for study of biological sequence data in molecular biology. Analysis of genome content and organization. Techniques for searching sequence databases, pairwise and multiple-sequence alignment, phylogenetic methods. Protein structure prediction and modeling, proteomics and the use of web-based bioinformatics tools.

CIS 669 Computer Executive Programs (3-0-3). Prerequisites: CIS 600 and CIS 620.

Further study of operating systems through detailed case studies of a multi-user operating system written in high-level language.

CIS 675 Information Security (3-0-3). Prerequisites: CIS 535, CIS 545, and CIS 554. A comprehensive study of security vulnerabilities in information systems and the basic techniques for developing secure applications and practicing safe computing. Topics including common attacking techniques such as buffer overflow, Trojan, virus, and others. UNIX, Windows, and Java security; conventional encryption; Hash functions and data integrity; public-key encryption (RSA, Elliptic-Curve); digital signature; watermarking for multimedia; security standards and applications; building secure software and systems; legal and ethical issues in computer security.

CIS 676 Computer Networks (3-0-3). Prerequisites: CIS 554, CIS 600, and CIS 620. Protocol software and conceptual layering, reliable delivery over an unreliable channel, addressing and address resolution, internetworking and routing algorithms, congestion and flow-control techniques, transport protocols, name and name binding, network filesystems, the client-server paradigm, analytical tools for network analysis, and performance measurement.

CIS 690 Professional Internship (0-0-1). Prerequisite: Permission of a CIS Department faculty advisor. Work experience in a professional environment. The work performed must extend the academic curriculum and provide a meaningful learning experience in the student's area of interest. Term paper required.

CIS 693 Special Topics in Computer and Information Science (3-0-3). Prerequisite: Varies depending on content. Special topics of current interest in computer and information science. Content varies each offering. May be repeated with change of topic.

CIS 694 Special Topics in Computer and Information Science (4-0-4). Prerequisite: Varies depending on content. Special topics of current interest in computer and information science. Content varies each offering. May be repeated with change of topic.

CIS 698 Independent Study (one to four credits). Prerequisite: Prior approval of written proposal by CIS faculty advisor and permission of Department Chair. Project in any approved area of computer and information science. May be repeated with departmental approval. Term report required.

CIS 699 Master's Thesis Research in Computer and Information Science (3-0-3). Prerequisite: Departmental approval of written proposal. Research in some area of computer and information science; primarily for students who intend to pursue doctoral studies. May be repeated with departmental approval.

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Doctoral Courses (D.B.A.)

DBA 720 Seminar on Business Teaching Methods (2-0-2). Prerequisite: Approval of D. B.A. Director. Exposes students to a variety of teaching-related issues, such as developing effective lecturing techniques and testing procedures; handling student questions and complaints; preparing the course syllabus; using instructional aids and technology; and understanding faculty and student rights and responsibilities. Includes both formal lectures on teaching fundamentals and practical in-class teaching experiences. DBA 720 is a requirement for all teaching and research assistants. Credit for this course does not count toward the minimum of 34 hours of D.B.A. course work. Grades assigned on a Satisfactory/Fail basis.

DBA 802 Applied Multivariate Statistical Analysis (4-0-4). Prerequisite: OMS633/733. Develops applications of multivariate statistical methods such as multiple regression, analysis of variance and covariance, discriminant analysis, and factor analysis. Computer program packages for the methods are used extensively. The emphasis is on the analysis of actual data from areas of interest to the students.

DBA 803 Business Research: Analysis and Applications (4-0-4). Prerequisite: DBA 802.

Develops students' formal research skills and provides an opportunity to integrate skills and knowledge obtained in the other core courses in designing and conducting a research study. In-depth study of current business research methodology and design. Key research studies are critiqued in a variety of business areas. As a course project, students select a research hypothesis, access an appropriate data set, and apply appropriate statistical techniques to test the hypothesis. A comprehensive written report of the research process and the conclusions reached is required.

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Economics

For course titles and descriptions, see the [Master of Arts in Economics](#) section of this Catalog.

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Finance

[FIN 501 Financial Management \(3-0-3\)](#). Prerequisites: [ACT 501](#), [ECN 503](#), and [OMS 503](#). Study of the basic tools and concepts of financial management. The topics include ratio analysis, risk concepts and valuation principles, capital budgeting, cost of capital, leverage, dividend policy, financial instruments, financial planning, working capital management, and short-term and long-term financing. Cannot be used for elective credit.

[FIN 601 Financial Policies \(3-0-3\)](#). Prerequisites: [FIN 501](#) and [OMS 503](#). Survey of financial policies and problems. Covers such topics as working capital management, cost of capital, capital budgeting, capital structure, dividend policy, valuation, mergers and acquisitions, and long-range financial planning. Includes one or more of the following: cases, readings, and term project.

[FIN 603/703 Capital Budgeting Decisions \(4-0-4\)](#). Prerequisite: [FIN 601](#). Intensive study of the theory and practice of capital budgeting under conditions of certainty and uncertainty. Topics include evaluation of alternative capital budgeting proposals, inflation, risk and uncertainty, cost of capital and long-term financial decisions, project abandonment, leasing, mergers, acquisitions, LBOs, plant-location decisions, executive compensation, and agency problems and costs.

[FIN 604/704 Management of Financial Institutions \(4-0-4\)](#). Prerequisite: [FIN 601](#). Focuses on the application of financial management policies and analytical techniques to commercial banks and other financial institutions. Discussion of strategic financial issues, such as the regulatory environment, optimal asset allocation, mergers and acquisitions, and cost of capital. Examination of modern management techniques, such as duration-based asset-liability models, the benefits and risks associated with off-balance sheet activity, and a variety of risk-hedging instruments and techniques commonly employed by financial institutions.

[FIN 605/705 Financial Markets \(4-0-4\)](#). Prerequisite: [FIN 601](#). Analysis and interpretation of current money and capital market trends. Topics include the instruments and primary institutions prevalent in both the domestic and international financial markets, the level and term structure of interest rates, globalization of the financial markets, asset securitization and the growth of mortgage-backed securities, financial innovation, and techniques to hedge interest-rate and foreign-currency risk.

[FIN 606/706 Investment Analysis \(4-0-4\)](#). Prerequisite: [FIN 601](#). An intensive study of investment alternatives. Covers the nature and operation of stock and bond markets; comprehensive treatment of investment as it relates to valuation of stocks and bonds; investment strategies involving stock options and financial futures; an intensive analysis of risk-return tradeoffs and their application to investment analysis; a review of technical analysis and asset-pricing anomalies; and taxes and their application to investment strategies.

[FIN 607/707 Portfolio Theory and Management \(4-0-4\)](#). Prerequisite: [FIN 601](#). The

development and application of modern portfolio theory. Topics include, but are not limited to, portfolio and asset-pricing theory, empirical tests of asset-pricing models, market efficiency, portfolio construction and revision, performance evaluation, international diversification, management of equity portfolios, management of fixed-income portfolios, evaluating the impact of security analysis, and the use of options and futures in portfolio management.

FIN 608/708 Risk Management (4-0-4). Prerequisite: FIN 601. Survey of the basic principles, concepts, and practices underlying the management, protection, and conservation of real property, personal property, and resources of an organization. Risk-management techniques studied include assumption, transfer, insurance, loss prevention, and hedging. Also includes study of health insurance, life insurance, property and liability insurance, annuities, and social insurance.

FIN 610/710 Real Estate Finance (4-0-4). Prerequisite: FIN 601. Study of mortgage markets, institutions, and instruments, governmental involvement and tax environment relating to real estate finance, and techniques for evaluating real estate investment and financing proposals. Emphasis is on current events and recent trends in the real estate field. Application areas include cash management, capital budgeting, security analysis and portfolio theory, and the interaction between investment and financing decisions.

FIN 612/712 Real Estate Investment (4-0-4). Prerequisite: FIN 601. Analysis of factors that determine the investment returns and value of real estate versus other alternatives. Examines decision making from the perspective of institutional, as well as individual, investors, and the estimation of risk and return in an individual property and portfolio context. Review of current research in these areas, the implications of the results, and further directions for study.

FIN 615/715 Derivative Securities (4-0-4). Prerequisite: FIN 606/706 or FIN 607/707. The study of derivative securities, such as futures, options, options on futures, and swaps. Topics include, but are not limited to, characteristics of derivatives markets, pricing models, trading mechanisms, contract specifications, hedging and speculation, market efficiency, corporate risk management using derivatives, and financial engineering.

FIN 621/721 International Financial Management (4-0-4). Prerequisite: FIN 601. An overview of the international financial system and the application of principles of business finance in an international context. Considers foreign exchange markets, balance of payments and exchange-rate policies, financial functions in the multinational firm, including capital budgeting, cost of capital and capital structure, intracompany payments and taxation of multinational firms and export companies, motivations for direct foreign investment, international accounting, and the international banking and financial system.

FIN 690 Professional Finance Internship (one to four credits). Prerequisites: Permission to register must be obtained from the Finance Department Chair early in the semester prior to enrollment in the course. Requires professional finance work in an organizational environment that extends the curriculum and provides meaningful experience related to the student's area of interest. Term report required.

FIN 696 Current Problems in Finance (one to four credits). Prerequisite: FIN 601. Selected problems in the field of finance. With permission of instructor, may be repeated if topics vary. Offered at departmental discretion.

FIN 698 Independent Study (one to four credits). Prerequisites: Two elective FIN courses, at least one of which must be at the 600 level; prior approval of a written proposal by FIN faculty advisor and permission of Department Chair. Study of a significant problem or area in finance, conducted under the supervision of the faculty advisor. Term report required.

FIN 801 Theory Seminar (3-0-3). Prerequisite: Completion of Advanced Analytical and Operational Core. An in-depth treatment of finance theory in perfect markets. Topics include fundamentals of choice under risk, portfolio theory, asset-pricing theory, and option-pricing theory. Required for finance majors in the D.B.A. program.

FIN 802 Seminar in Corporate Finance (3-0-3). Prerequisite: Completion of Advanced Analytical and Operational Core. An extensive reading of the current literature in the field of corporate finance. Concentrates on capital structure and dividend policy, but also investigates selected topics in corporate finance such as mergers and acquisitions. Recent developments in these fields are emphasized, including agency theory, the impact of asymmetric information and signaling, and the role of contingent-claims analysis. Required for finance majors in the D. B.A. program.

FIN 803 Seminar in Investment and Portfolio Models (3-0-3). Prerequisite: Completion of Advanced Analytical and Operational Core. Covers the major areas in investments: portfolio theory, asset pricing, speculative markets, market efficiency, and performance evaluation. Required for finance majors in the D.B.A. program.

FIN 804 Seminar in Financial Institutions and Markets (3-0-3). Prerequisite: Completion of Advanced Analytical and Operational Core. Study of the structure and functions of financial markets. Topics include theories on financial intermediation and the banking firm, asset allocation/liability choice models, loan contracts/credit rationing, depository and non-depository financial institutions, deposit insurance, bank regulation, and financial innovation.

FIN 805 Seminar in International Financial Management (3-0-3). Prerequisite: Completion of Advanced Analytical and Operational Core. Study of the international financial system and the application of principles of business finance in an international context. Topics include the finance function in the multinational firm, foreign exchange markets, cost of capital, and capital expenditure analysis in the multinational firm. International accounting and reporting procedures are reviewed.

FIN 806 Seminar in Real Estate (3-0-3). Prerequisite: Completion of Advanced Analytical and Operational Core. Covers the major areas in real estate: equity ownership (investment), debt financing (mortgage lending), and appraisal. Specific topics include asset pricing, market efficiency, innovation, and data availability. Emphasis on empirical analysis, extensive readings, hands-on data analysis, and applied research. Students are required to design a significant research project during the class.

FIN 807 Applied Research Methods and Design in Finance (3-0-3). Prerequisites: Completion of the Advanced Analytical and Operational Core and two master's level courses in mathematical economics and econometrics. Covers selected topics in stochastic processes and time-series analysis; includes applications of probability theory and statistical techniques in financial research.

FIN 891 Doctoral Research in Finance (variable credit). Prerequisites: Completion of two 800-level finance electives. Up to 12 credits may be considered toward dissertation credit requirements.

FIN 895 Dissertation Research Seminar (3-0-3). The focus is on research in finance involving faculty, outside speakers, and dissertation-stage doctoral students.

FIN 896 Current Problems in Finance (variable credit). Prerequisite: FIN 801. Investigation of selected problems in the field of finance. May be repeated with change of topic.

FIN 899 Dissertation (variable credit). Prerequisite: Successful completion of comprehensive examinations.

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General Administration

GAD 501 Business English (4-0-4). Intensive work on mastering basic English skills needed for graduate study in business. Emphasis on building vocabulary and verbal fluency and on improving grammar, sentence structure, and listening and reading comprehension. Lab required. Must pass the final examination with a grade of "B" or better before registering for

GAD 502. Note: Required for full-time students who score below the 16th percentile on the verbal section of the **GMAT** or **GRE**. Students required to take **GAD 501** must consult their program advisors to determine which other courses may be taken concurrently.

GAD 502 Intermediate Business English (3-0-3). Prerequisite: **GMAT** or **GRE** test score between the 16th and 19th percentile or **GAD 501**. Intensive work on mastering intermediate English communication skills for business. Emphasis on building content-specific vocabulary and more sophisticated grammatical skills as well as on critical reading and analytical writing. Lab required. Must pass the final examination with a grade of “B” or better before registering for **GAD 515**.

GAD 515 Communications for Managers (3-0-3). Introduces fundamental and advanced techniques of effective written and oral communications for a business/professional environment. Topics include oral presentations and writing of common business documents, including letters, memos, and reports. Cannot be used for elective credit.

GAD 696 Current Problems in General Administration (one to four credits).
Prerequisite: Permission of Department Chair.

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Health Care Administration

HCA 500 Tools for Health Care Managers (3-0-3). Quantitative methods needed for the evaluation, planning, and implementation of health services. Statistical procedures, such as regression analysis and severity indices, are covered. Topics include service delivery problems in the health services industry, such as inventory stocking, operations scheduling, quality assurance, and cost performance. Case studies from the health services industry are used to illustrate the methods presented in class. Computer applications also are emphasized.

HCA 510 Administrative Uses of Epidemiology (3-0-3). The study of the distribution and determinants of health, disease, and disability in human populations. Specific topics include principles and methods of epidemiology; the concepts of health and illness and their operational measures; epidemiological techniques used to identify health problems in a community; examination of lifestyle, the medical care system, and the social and physical environment as determinants of health; the multiple responsibilities of public health departments; the application of epidemiological principles to the study of health services use, program evaluation, and quality of care; and population-based approaches to determining health resource requirements.

HCA 515 Medical Care Organization (3-0-3). The analysis of the current arrangements for the organization, financing, and delivery of medical care services. Specific topics include access to care; health care costs and cost containment; the value system of the health care industry; health policy and politics; the supply, demand, and distribution of health care facilities and human resources; competition and regulation; health insurance (both public and private); newer options for the delivery of health services, including the HMO and PPO; and health care services in an international perspective.

HCA 516 Social Environment of Health Care (3-0-3). Prerequisite: **HCA 515**. Topics include an examination of leading social/psychological models of health services utilization; introduction to health survey-research design and methods; sociological aspects of the patient/physician relationship; social control in health care; and health care ethics and ethical decision-making systems as applied to administrative issues.

HCA 520 Behavior of Health Care Organizations (3-0-3). Prerequisite: **HCA 515**. Introduction to organizational behavior in health care institutions and programs including hospitals, long-term-care facilities, HMOs, and voluntary health agencies. Emphasis on the governance structure, medical staff relationships, and the general and departmental operation of the facility; the analysis of significant material from the field of organizational behavior and its application to the health care environment; and the general management and health care-specific roles of the health care administrator.

HCA 525 Information Systems in Health Care (2-0-2). Prerequisite: HCA 515 or equivalent. Examines ways in which an integrated information system can provide data to support the operations, management, and decision-making functions in a health care organization. Consideration of the applications of the computer in the hospital and other health care institutions. Collection, storage, processing, and presentation of information for internal and external use. Projects include use of major microcomputers spreadsheets, graphics, and database packages.

HCA 555 Analysis of Health Care Markets (3-0-3). Prerequisites: HCA 500 and HCA 515, or permission of instructor. Emphasizes the application of microeconomic models to health service issues and problems. Special emphasis is placed on current policy issues, such as consumer education and the cost of information, and to approaches that address problems or inadequacies in the health services delivery system. Additional emphasis is placed on market structure, industry configuration, and the consequences for quality, cost, and service delivery. Prior course work in microeconomic (price) theory is not required.

HCA 601 Health Care Financial Management (3-0-3). Prerequisites: FIN 501 and permission of instructor. Covers working capital management, cost of capital, capital budgeting, mergers and acquisitions, reimbursement methodologies, risk management, managed care contracting, and long-range financial planning for the health services industry.

HCA 615 Quality of Care (3-0-3). Prerequisites: HCA 500 and HCA 515, or permission of instructor. Teaches specific methods useful in improving quality. Class participants learn to select, apply, and interpret quality tools and methods. Basic tools covered are assessment of organization culture, cause-and-effect diagrams, two-stage sampling, control charts for mortality, control charts for patient health status, and severity-adjusted control charts. The basic behavioral techniques discussed are nominal group technique, integrative group techniques, subjective data, and influences on a physician's practice patterns.

HCA 625 Health Care Informatics for Managers (3-0-3). Prerequisites: Completion of the HCA core and permission of instructor. Health Care Informatics can be defined as the management and transformation of various health data components into information and knowledge that is used by health care managers to improve the process of health care. Develops an understanding of the concepts relevant to Health Care Informatics and the present status of information technology in health care organizations. The main focus is the use of computer-based applications to support clinical and administrative managers in health care today.

HCA 640 Health Care Law (3-0-3). Prerequisite: HCA 515. Introduction to health care law. Considers the roles and rights of the major forces in the health care industry: patients, hospital administration, governing boards, health care practitioners, and state and federal governments. Topics include issues of government regulation, corporate organization and financing, medical staff privileges, death and dying, consent to treatment, legal aspects of nursing services, hospital liability, informed consent, collection and disclosure of patient information, legal considerations in financial management and health planning, labor law, and other special, complex issues of health care law.

HCA 645 Decision Analysis (3-0-3). Prerequisites: HCA 500 and HCA 515. Introduces students to methods of analyzing decisions and expert opinions, including probability and utility models. Emphasizes behavioral methods of consulting decision makers and groups of experts. Students learn how to organize, conduct, and report on meetings of groups of experts to produce consensus decision models. A hands-on workshop that introduces tools and applies them to realistic tasks. Because students learn by doing, most classroom time is devoted to practice runs instead of didactic lectures. Most examples used in lectures come from analyses of decisions made by managers in the service industry.

HCA 650 Long-term Care (3-0-3). Prerequisite: HCA 515. The unique needs of long-term-care facilities provide a new challenge for health administrators. Covers the history of long-term-care facilities, economic and financial aspects of care, different models of service delivery, and alternative care systems. The current federal programs in the U.S. and other Western countries are studied.

HCA 660 Integrative Business Strategy for Health Care Administrators (4-0-4).

Prerequisites: Completion of all M.P.A./HCA courses (may be taken concurrently with HCA 601) and permission of the instructor. Presents the integrative and cross-functional nature of strategy and decision making in the health services industry. Principles, concepts, and theories from strategic planning, marketing, finance, human resources management, accounting, and operations management are applied to administrative decisions and the formulation of strategic business plans for the health services industry.

HCA 661 Managed Care Arrangements.(3-0-3). Prerequisites: HCA 500 or equivalent, and HCA 515, or permission of instructor. Provides class participants with the ability to operationalize workable strategies consistent with a managed care environment. Emphasis is placed on developing an understanding of managed care as a concept and then acquiring the requisite tools, such as capitation and contract negotiation needed for implementation, maintenance, and evaluation of services in a managed care environment in both the public and the private sectors.

HCA 680 Current Issues in Health Care Seminar (3-0-3). Exploration of current or future problems, issues, and developments in the health care field; conducted in a seminar/class setting.

HCA 685 Health Care Internship (three credits). Supervised internship designed to provide work experience in the health care field and administrator-in-training experience for graduate students preparing for careers in nursing home administration; 220 to 520 clock hours of experience may be arranged with the permission of the executive-in-residence and designated internship preceptor. This course is only for M.P.A. students and those M.B.A. students who wish to pursue a career in nursing home administration.

HCA 686 Health Care Internship (one credit). Continuation of HCA 685. May be taken a maximum of two semesters.

HCA 690 Administrative Internship (five credits). Prerequisite: Permission of the HCAP Director and Executive-in-Residence. Administrative internship for M.B.A./HCA. students only. Normally taken as the last course in the curriculum after completion of all basic, core, and concentration course work. Includes credit for professional site visits, the shadowing experience, and the professional development seminar.

HCA 691 Administrative Internship/Research Project (one credit). Continuation of HCA 690. May be taken a maximum of two semesters.

HCA 695 Research Seminar (three credits). Prerequisite: Permission to register must be obtained from the HCAP Director early in the semester prior to enrollment in the course. Study of a significant problem in health care administration, with topic selected from candidate's area of interest; a written report, suitable for publication in a professional journal, is required.

HCA 696 Research Seminar (one credit). Continuation of HCA 695. May be taken a maximum of two semesters.

HCA 698 Independent Study in Health Care Administration (one to four credits). Prerequisite: Permission of instructor. Supervised study of a health services industry issue or problem. Offered every semester. May only be taken for a letter grade.

HCA 699 Independent Study in Health Care Administration (one to four credits). Prerequisite: Permission of instructor. Supervised study of a health services industry issue or problem. Offered every semester. May only be taken on an S/F basis.

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Information Systems (See Addenda - July 29, 2005)

Information Systems (IST) courses may not be taken for credit toward the Master of Computer and Information Science degree.

IST 600 Fundamentals of Systems Development (4-0-4). Introduction to computer programming for business and information systems students. No previous experience and knowledge of programming is required. Visual Basic is used to teach programming concepts and practices. Topics include variables and their types, control structures, flow control, controls for graphical user interfaces, event-driven programming, file and database processing using MS Access, and the application development cycle.

IST 601 IT for Competitive Advantage. (3-0-3). Provides an understanding and appreciation for the role of information technology and how this technology is leading changes in an organization. Discusses the competitive role of IT and how it affects the strategy and operation of modern business organizations nationally and internationally. Enables students to lead technology-enabled organizational change involving collaboration technologies.

IST 602 Advanced Programming of Business Systems (4-0-4). Prerequisite: IST 600 or equivalent. Presents a large set of algorithms important to a variety of programming situations commonly needed to implement advanced business systems. Different types of data structures are presented in an attempt to find the model that best suits a given problem. Introduces the concepts of static and dynamic data types and includes in-depth discussion of Visual Basic class modules. Efficiency issues are discussed. Students are exposed to advanced database programming techniques using Data Object Model in Visual Basic.

IST 603 Systems Analysis Methods (4-0-4). Prerequisite: IST 600 or equivalent. Introduces the student to the techniques of developing an information system. Students study the system life cycle, system-analysis methodologies, data-analysis techniques, system design, joint application design, rapid application design, and an overview of object-oriented systems. Students also are expected to use a CASE tool to develop a system specification.

IST 604 Design and Implementation of DBMS (4-0-4). Prerequisite: IST 602. Design and implementation of databases. Data modeling and modeling tools. Models for databases: relational, hierarchical, network, object-oriented. Integrity, concurrency, normalization, and SQL. Data ware-houses and mining. GUI interfaces to databases. System implementation using database and graphical tools, testing, conversion, and post-implementation reviews.

IST 606 Management of Business Networks (3-2-4) Prerequisite: IST 602 or equivalent. Introduces the managerial and technical aspects of business networks, including the hardware and software mechanisms that allow access from one computer to files and services provided on other computers. An overview of Local Area Networks (LAN) and Wide Area Networks (WAN) is provided, as are those of software protocols, routers, bridges, and firewalls. On the practical side, the student learns about the network services provided by the operating system (Windows/NT), network analyzers, and the management of security and reliability. The student also learns to install, configure, and test network hardware/software, and uses such facilities in practical applications including e-mail, remote file access, client/server hookups, and dial-up networking.

IST 608 Business Database Systems (3-0-3). Prerequisites: Use of Microsoft Windows and Microsoft Office; use of the Internet. Database concepts; database modeling using the entity relationship model; the relational database model; database processing in a PC environment. A detailed study of a desktop database package, including data-organization capabilities, data-maintenance capabilities, query facilities, form and report capabilities, and programming capabilities. SQL and QBE.

IST 609 Business Systems Analysis and Design (3-0-3). Prerequisites: Use of Microsoft Windows and Microsoft Office; use of the Internet. Overview of the systems-development life cycle; cost/benefit analysis; information-requirements analysis, including data-flow diagrams; systems-proposal report; role of the systems analyst; system design, including user-interface design, file design, and input/output design; project management for managers interacting/participating in data-processing projects.

IST 610 Object-oriented Programming for Information Systems (4-0-4). Prerequisite: IST 602 or equivalent. The concept of object-oriented methodologies and programming are presented through Java and the C++ programming languages. Language syntax, error handling, object creation/destruction, and memory-allocation strategies are explored. Java GUI components, event handling, and web-based programming are introduced.

IST 615 Decision Support and Expert Systems (3-0-3). Prerequisite: IST 608. Study of areas in which computers can be used as tools in management decision making and evaluation of alternatives. Functional components of a Decision Support System (DSS). Decision models and end-user modeling. User-DSS interfaces. Planning and developing a DSS. Concepts of knowledge-based systems and expert systems. Components of expert systems. Knowledge acquisition. Expert-systems development with a commercial shell. Manipulation of quantified uncertainty factors. Derivation of knowledge from data. Significance of groupware and document-management systems to decision making.

IST 641 Electronic Commerce (3-0-3). Prerequisites: IST 600 and IST 601. Provides an understanding of evolving Internet technologies and explores the business implications of these developments. Focus is on the fit between technology and strategy. Provides tools, skills, and an understanding of technology, business concepts, and issues that surround the emergence of electronic commerce on the Internet. In addition to acquiring basic skills for navigating the Internet and creating a personal electronic presence on the World Wide Web, the student develops an understanding of the current practices and opportunities in electronic publishing, electronic shopping, electronic distribution, and electronic collaboration.

IST 642 Web Site Design and Development (3-0-3). Prerequisite: IST 604. Covers web publishing and web-based application development, with emphasis on accessing server databases. Web site design concepts and tools are introduced, including HTML, JavaScript, Cascading Style Sheets, VBScript, XML, and Active Server Pages (ASP). Prepares students with skills for designing, programming, and publishing web sites, as well as developing applications on the web.

IST 690 Professional Internship (0-0-1). Prerequisite: Permission of a CIS Department faculty advisor. Work experience in a professional environment. The work performed must enhance the academic experience, extend the academic curriculum, and provide a meaningful learning experience in the student's area of interest. Term paper required.

IST 693 Special Topics in Information Systems (variable credit). Prerequisite: Varies with course content. Special topics of current interest in information systems. Content varies with each offering.

IST 698 Independent Study (one to four credits). Prerequisite: Prior approval of written proposal by CIS faculty advisor and permission of Department Chair. Project in any approved area of information systems. May be repeated with departmental approval. Term report required.

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M.B.A. Courses

MBA 500 Environment of Business (3-0-3). Explores and analyzes the ethical, legal, and managerial implications of significant environmental forces impacting business. Topics include corporate social responsibility, workplace and employment issues, multinational business operations, U.S. and international legal/regulatory issues, ecology issues, and models of ethical analysis for management decisions.

MBA 600 Team Dynamics (1-0-1). Prerequisites: Completion of Level I and Level II or permission of M.B.A. program advisor. A hands-on, exercise-oriented workshop, which explores issues in team building, group performance, team leadership, interpersonal interactions, and related topics.

MBA 602/702 International Business. (3-0-3). Explores the impact of global

environmental forces on management strategies for entering or operating in international markets. Surveys theories and concepts in international marketing, human resources, operations, and strategic planning. Considers managerial implications of global trends in politics, trade, culture, regulatory practices, and the role of international institutions.

MBA 603 Management of Innovation, Technology, and Quality (3-0-3). Integrates technology and quality into the strategic management and operations of the firm. Discussion of methods for formulating technology, strategy, choosing core technologies, organizing R&D, managing research projects, and bringing to market new products that meet quality specifications and cost targets. Students learn the techniques of total quality management, how they can be introduced, and how they can be used to improve products, processes, and services of the firm.

MBA 660 Integrative Business Strategy. (4-0-4). (See Addenda - January 01, 2005)
Prerequisites: Completion of Level I, Level II, and group A of Level III or permission of M.B. A. program advisor. Explores the integrative and cross-functional nature of corporate strategy and decision making. Applies principles, concepts, and theories from business and marketing strategy, corporate finance, human resources management, managerial accounting, and operations management to management decisions and the formulation of strategic business plans.

MBA 693 Special Topics Seminar (3-0-3). Topic varies from term to term. Special seminars are offered for lock-step programs. May be repeated with change of topic, with permission of instructor.

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Management and Labor Relations

MLR 501 Management and Organizational Behavior (3-0-3). Prerequisite: Non-degree students must obtain permission of Department Chair. Focuses on the dynamic interactions of people working in organizations; applies various managerial concepts, models, theories, and tools for identifying, diagnosing, and solving organizational problems; topics include motivation, leadership, job design, decision making, and group and team dynamics.

MLR 504 Organizational Theory and Design (3-0-3). Prerequisite: MLR 501 or permission of Department Chair. Nature and importance of organizational structure and design; functions and dysfunctions of traditional designs; how and why organizational designs change; effects of the environment, technology, information and control systems, power structures, and political behavior on organizational performance.

MLR 511 Labor History (3-0-3). Prerequisite: MLR 601 or permission of Department Chair. Examination of the organized labor movement in the United States and its influence on political and legal institutions; analysis of legislation relating to labor, management, and the public; laws and regulations concerning wages, hours, collective bargaining, labor contracts, and arbitration.

MLR 521 Comparative Labor Systems (3-0-3). Prerequisite: MLR 601 or permission of Department Chair. American and foreign labor movements; trade unionism and industrial relations systems in different areas of the world, showing their roles in economic, social, and political developments; comparison of structure and functions of labor movements at various stages of economic development.

MLR 522 Labor Law (3-0-3). Prerequisite: MLR 601 or permission of Department Chair. The law of industrial relations with emphasis on the Labor-Management Relations Act, including unfair practices and representation cases.

MLR 523 Labor Relations in Public Employment (3-0-3). Prerequisite: MLR 601 or permission of Department Chair. Collective bargaining by federal, state, and local employees; differences between public and private employment; union security, impasse procedures, and implications of collective bargaining for public management; impact of collective bargaining

on wages and other conditions of employment in the public sector.

MLR 531 Employment Practices Law (3-0-3). Prerequisite: MLR 601 or permission of Department Chair. Analyzes employment practices law and its impact on employment decision making; equal employment opportunity and discrimination; occupational safety and health; pension and benefit regulations and laws that pertain to the employment relationship; emphasis on the impact of regulations on organization personnel and human resource policy.

MLR 543 Entrepreneurship (3-0-3). Prerequisite: None for business students; permission of Department Chair for non-business students. Exploration of the business-formation process, the management and operation of new/smaller enterprises both within and apart from existing ventures. Students are required to develop a written business-venture plan and may act as advisors to existing smaller enterprises.

MLR 547 Cross-functional Management (4-0-4). Prerequisite: MLR 501 or permission of Department Chair. Analysis of issues involved in managing different functional departments; examination of the types of interactions and conflicts that typically occur between departments; methods of dealing with interdepartmental problems considered along with current management techniques for improving strategic and operational performance.

MLR 555 Labor-Management Cooperative Practices (3-0-3) Prerequisite: MLR 601 or permission of Department Chair. Examines employee involvement, primarily in the organized sector, including the factors influencing initiation, continuation, and demise of labor-management cooperative practices. Covers processes of discrete cooperative practices including quality circles, gain sharing, labor-management committees, and interest-based bargaining as well as their benefits, risks, and interaction with organizational structure and philosophy.

MLR 577 Managerial Skill Development (3-0-3). Prerequisite: MLR 501 or permission of Department Chair. Analysis of aspects of managing in which specific behavioral skills can be developed; focus on individual managers and skill development in such areas as goal setting, time management, conducting meetings, communication processes, delegation, training, and appraisal interviews.

MLR 587 International Management (3-0-3). Prerequisite: MLR 501 or permission of Department Chair. Strategic, managerial, and human resource issues in international business management; cultural differences and managerial practices in different countries; planning and control of small businesses and global enterprises; evaluating the performance of overseas subsidiaries; coordinating operations in different countries; overseas decisions; career concerns with overseas assignments.

MLR 601/701 Human Resources Management and Labor Relations (3-0-3). Prerequisites: MLR 501 and ECN 503 or equivalents, or permission of Department Chair. A review of basic processes and significant issues in managing human resources in organizations; topics include recruitment, employee selection, training, compensation and benefits, legal issues, the historical framework for organized labor, union behavior, and collective bargaining.

MLR 602/702 Advanced Wage and Employment Theory (3-0-3). Prerequisites: MLR 601 and ECN 503 or equivalents, or permission of Department Chair. Supply and demand for labor, search process, wage differentials, vacancies, and unemployment; union growth, models of the bargaining process, and the impact of unions on labor markets.

MLR 604/704 Interpersonal Relations and Group Dynamics (3-0-3). Prerequisite: MLR 501 or permission of Department Chair. Current topics affecting the management of individuals and groups; designed to stimulate new insights and behaviors to improve interpersonal effectiveness; exploration of issues such as network building, leadership, impact of positive expectations, agenda setting, power and influence, mentoring, team building, innovation, and group process.

MLR 605/705 Organizational Development (3-0-3). Prerequisite: MLR 501 or permission

of Department Chair. Issues involving organizational change and methods for helping organizations adapt to rapidly changing environments; strategies and methods of organizational change; consultative methods and the role of the change agent; the nature of organizations in the future; methods of needs assessment; and indicators of organizational effectiveness.

MLR 606/706 Research and Development Management (3-0-3). Prerequisite: MLR 501 or permission of Department Chair. Problems in research and development administration, emphasizing planning, organizing, directing, and controlling the research function; responsibilities of research administrators; coordination of outside research services with the rest of the organization; supervising research personnel; development of organizational designs conducive to R&D effectiveness.

MLR 607/707 Total Quality Management/Continuous Quality Improvement (4-0-4). Prerequisite: MLR 501 or permission of Department Chair. Overview of managerial considerations in implementing an enterprise-wide quality improvement program; includes discussion of senior management leadership, objectives, strategy, program design, implementation structure, customer-satisfaction measurement, process improvement, training, lower-level involvement, supporting management programs, and the assessment of financial results.

MLR 609/709 Individual Differences: Their Assessment and Managerial Implications (3-0-3). Prerequisite: MLR 501 or permission of Department Chair. Analysis of individual differences and their influences on effective management; emphasis on the presentation of various assessment measures, their evaluation, and application of results toward the understanding of individual behavior; implications for effective self-management, career advancement, motivation, leadership, and decision making are discussed.

MLR 611/711 Team Problem-solving Process (2-0-2). Prerequisite: MLR 501 or permission of Department Chair. Analysis of problem-solving processes in small, cross-functional teams; emphasis on developing behavioral skills in problem analysis and solution selection; team-facilitation skills, including listening and feedback, conflict management, and conducting meetings; building coalitions with external groups and action plans necessary for successful project implementation.

MLR 621/721 Multinational Management (3-0-3). Prerequisite: MLR 501 or permission of Department Chair. Advanced study of multinational corporations in diverse political, economic, and cultural environments; examination of concepts and theories relating to multinational business strategy and operations; broad coverage of issues affecting top management decision making, including business-government relations, headquarters-subsidiary relationships, and cross-functional coordination of operations across borders.

MLR 640/740 Performance Appraisal, Compensation, and Benefits (3-0-3). Prerequisite: MLR 601 or permission of Department Chair. Detailed study of performance appraisal and compensation systems; includes job analysis, job evaluation, wage surveys, pay structure design, individual and group incentive systems, appraisal methods, and salary and benefits administration; also includes economic, legal, and union influences and role of reward systems as a source of work motivation and perceptions of fairness.

MLR 641/741 Employment Planning, Personnel Selection, and Training (3-0-3). Prerequisite: MLR 601 or permission of Department Chair. Processes, concepts, and techniques relevant to the planning, recruitment, selection, and training functions of human resource management; evaluation of personnel techniques; focus on organizational and governmental constraints and influences.

MLR 645/745 Information Systems in Human Resource Management (4-0-4). Prerequisite: MLR 601 or permission of Department Chair. Comprehensive analysis of the use of information systems in human resource management; involves extensive study of the design, selection, and implementation of HRIS software and hardware including mainframe, client-server, and microcomputer technology; emphasis on the use of computer applications to perform such functions as human resource planning, selection, appraisal, compensation, and

benefits administration; hands-on experience with advanced HRIS software is a major element of course instruction.

MLR 649/749 Small Business and the Law (3-0-3). Prerequisite: Permission of Department Chair. Offered in conjunction with the [Cleveland-Marshall College of Law](#); focuses on matters of concern to entrepreneurs and their businesses and the interface of professionals who serve entrepreneurs and their businesses; topics include family business, ethics, boards of directors, understanding the legal implications of selected topics, and the roles of clients and professionals.

MLR 651/751 Collective Bargaining (3-0-3). Prerequisite: **MLR 601** or permission of Department Chair. Structure of organized labor; types, methods, and aims of unions; trade and labor contracts; arbitration and mediation methods and services; federal and state regulation of collective bargaining.

MLR 686/786 Current Problems in Management and Labor Relations (3-0-3). Prerequisites: **MLR 601** and permission of Department Chair. Seminar dealing with selected problems in the field of management or labor relations. May be repeated with change of topic.

MLR 690 Professional Internship (one to three credits). Prerequisites: Two MLR courses, at least one of which must be at the 600 level; permission of instructor and Department Chair. Provides students with an opportunity to gain practical experience in human resources, labor relations, and/or management. Must be arranged in advance of the semester at the initiative of the student or the faculty member. Students must work a minimum of 14 hours per week during the semester under the supervision of a professional manager. A written report in a format agreed to in advance is required. The course is graded on a Satisfactory/Fail basis.

MLR 696/796 Alternative Dispute Resolution (3-0-3). Prerequisite: **MLR 601** or permission of Department Chair. Survey of the various types of dispute-resolution processes available as alternatives to litigation; detailed study of the primary dispute-resolution processes—negotiation, mediation, and arbitration—as well as some of their hybrid variants; description and analysis of several noteworthy applications, the context for which ranges from the personal to the global; consideration of the impediments to use of so-called alternative dispute-resolution processes, such as the alternatives to court adjudication, and suggestions on how those impediments might be overcome.

MLR 698 Independent Study (one to four credits). Prerequisites: Two MLR courses, at least one of which must be at the 600 level, and permission of instructor and Department Chair. Study of a significant problem or area in management and labor relations, conducted under the supervision of the faculty advisor. Term report required.

MLR 800 Research Design and Measurement (3-0-3). Prerequisite: Completion of the Advanced Analytical and Operational Core. Provides an in-depth discussion of research design and measurement issues. Includes principles and logic of experimental and non-experimental design, measurement theory (validity, reliability, and multiple indicators), data theory and scaling methods (uni-dimensional and summated scales), and comparison, similarity, and preference data.

MLR 801 Theory Seminar (3-0-3). Prerequisite: Completion of the Advanced Analytical and Operational Core. Prevailing theories and research trends within the areas of management strategy, international management, organizational behavior, organizational design, and human resource management are examined with a focus on the most recent and relevant developments as they apply to current problems encountered by organizations. Required for MLR majors and minors in the D.B.A. program.

MLR 802 Current Topic Professional Seminar (3-0-3). Prerequisite: **MLR 801**. Topics vary according to instructor, but deal with current issues such as quality of work life, organizational values and cultures, productivity, organizational equity and justice, social responsibility, and salient labor/management relations issues; emphasis on the application of problem-solving techniques and tools as they relate to the selected subject areas.

MLR 803 Seminar in Organizational Behavior (3-0-3). Prerequisite: **MLR 801**. Concepts,

theories, methods of inquiry, and empirical generalizations from the behavioral sciences to the understanding and control of behavioral processes in organizations; topics include theory construction and testing, perception and attitude formation, leadership, motivation, job design, job satisfaction, group dynamics, conflict resolution, managing organizational change, organizational culture, and organizations as social systems.

MLR 804 Seminar in Strategic Management (3-0-3). Prerequisite: MLR 801. Research in strategic management; major theoretical models and empirical research projects are critically examined; emphasis on the potential for practical applications to the strategic management of complex organizations.

MLR 805 Seminar in Labor Relations (3-0-3). Prerequisite: MLR 801. Provides an understanding of the theoretical and empirical work bearing on current issues in the field; students investigate such topics as union organizing, grievance procedures, bargaining theory, and bargaining outcomes.

MLR 806 Seminar in Human Resource Management (3-0-3). Prerequisite: MLR 801. Research in human resource management, including theoretical models and empirical research, is critically examined; topics include gender and race effects, recruitment and selection, socialization and training, career issues, and the changing nature of the employment relationship, compensation systems, international HR issues, and performance appraisal; focus is on understanding and critically analyzing empirical research in HRM in order to evaluate the potential application of HRM practices to complex organizations.

MLR 807 Seminar in Organization Development (3-0-3). Prerequisites: MLR 801 and MLR 803. OD methods used in solving managerial and organizational problems, such as team building, team-skills training, survey-feedback training, behavior modification, job enrichment, and contemporary management systems; particular focus on the procedures to be used, ways of countering resistance to change, and methods of measuring and evaluating interventions.

MLR 891 Doctoral Research in Management and Labor Relations (variable credit). Prerequisites: Completion of two 800-level management and labor relations electives. Up to 12 credits may be considered toward dissertation credit requirements.

MLR 895 Dissertation Research Seminar (3-0-3). Focus on research in management and labor relations involving faculty, outside speakers, and dissertation-stage doctoral students.

MLR 896 Current Problems in Management and Labor Relations (variable credit). Prerequisites: MLR 800 and MLR 801. Investigation of selected problems in management and labor relations. May be repeated with change of topic.

MLR 899 Dissertation (variable credit). Prerequisite: Successful completion of comprehensive examinations.

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Marketing

MKT 501 Marketing Theory and Practice (3-0-3). Examines theoretical and practical considerations in strategic market planning. Explores managerial, ethical, societal, and global dimensions of marketing decision making. Focuses on segmenting markets and making product, pricing, promotion, and distribution decisions.

MKT 511 Retail Management (4-0-4). Prerequisite: MKT 601 or permission of Department Chair. Provides retail management and merchandising framework for all types of businesses. Includes store location, layout, and design; merchandise offerings, assortments, pricing, and control; internal operations—staffing, supervision, promotions, customer services, store operations, and expense control; opportunities for small retailers; and legal and ethical considerations.

MKT 550 Professional Selling and Sales Management (4-0-4). Prerequisite: **MKT 601** or permission of Department Chair. Covers tasks and responsibilities of professional selling and the challenges of managing both the individual and team sales function. Stresses analytical and interpersonal skills, account management, proposal development, planning, organizing, directing, motivating, and controlling a sales organization. Examines legal and ethical issues.

MKT 552 Business-to-Business Marketing (4-0-4). Prerequisite: **MKT 601** or permission of Department Chair. Explores concepts, analytic tools, management practices, and advances in marketing goods and services to industrial, commercial, institutional, and other business markets in domestic and global environments. Includes lectures, case analyses, discussions, oral presentations, written reports, and implementation of a field project.

MKT 554 Internet Marketing (4-0-4). Prerequisite: **MKT 601** or permission of Department Chair. Provides an introduction to Internet technology and the marketing opportunities this technology presents. A multi-dimensional approach is used to combine practical application with marketing principles.

MKT 556 Data Mining Applications in Marketing (4-0-4). Prerequisite: **MKT 601** or permission of Department Chair. Explores the basic concepts and theories of data mining for large databases. Investigates the use of computer software in data mining to examine marketing problems in the business-to-consumer and business-to-business markets. Applies practical problem solving using lift, improvement, modeling, and scoring of customers. Examines the various underlying theoretical models, data, and outcomes. Requires laboratory use of computer software applications.

MKT 601 Marketing Management (3-0-3). Prerequisite: **MKT 501** or equivalent. Explores advanced theories, concepts, and techniques for formulating strategic marketing plans for business and non-business organizations in U.S. and global environments. Topics include environmental analysis, market-opportunity analysis, segmentation and positioning, marketing-mix decisions, and formulating action plans.

MKT 602/702 Marketing Research (4-0-4). Prerequisite: **MKT 601** or permission of Department Chair. Covers quantitative and qualitative research methods for analyzing marketing efforts and opportunities. Emphasizes primary techniques such as setting objectives, designing projects, collecting, processing, and analyzing data, reporting results to management, and integrating results into decision making. Uses computers and the latest statistical software.

MKT 603/703 Buyer Behavior (4-0-4). Prerequisite: **MKT 601** or permission of Department Chair. Examines social and psychological influences on individual, household, and organizational buyer behavior. Investigates models of buyer behavior and applies them to the marketing decision-making processes. Includes readings, lectures, discussions, and team projects.

MKT 604/704 Strategic and Tactical Marketing (4-0-4). Prerequisite: **MKT 601** or permission of Department Chair. Provides an in-depth understanding of marketing planning, focusing on the tools necessary for analysis and decision making in a planning context. Emphasizes marketing decision-support systems in the planning process.

MKT 605 Services Marketing (4-0-4). Prerequisite: **MKT 601** or permission of Department Chair. Explores the marketing of services in consumer, business, nonprofit, and global settings. Investigates the nature of services and the theories, concepts, tactics, and strategies for solving marketing problems, improving service quality, and building customer satisfaction.

MKT 606/706 Advertising and Promotion Management (4-0-4). Prerequisite: **MKT 601** or permission of Department Chair. Examines the key managerial topics involved in the design, implementation, and evaluation of the marketing communications program. Focuses on objective setting, strategy formulation, and promotional research and evaluation.

MKT 607/707 Product Management (4-0-4). Prerequisite: **MKT 601** or permission of

Department Chair. Provides a managerial introduction to special problems encountered in the evaluation, introduction, and management of consumer and industrial products. Focuses on market analysis, new product development, and product planning.

MKT 608/708 Global Marketing (4-0-4). Prerequisite: **MKT 601** or permission of Department Chair. Emphasizes the marketing mix—product, promotion, distribution, and pricing—within the international context, particularly strategic marketing management. Uses cases, readings, films, and textbook. Learning materials are selected based on their pragmatic value to managers. Includes lectures, discussions, and individual/group presentations.

MKT 640 Field Experience Abroad (4-0-4). Prerequisites: **MKT 501** or equivalent, and permission of Department Chair. Specially arranged field experience abroad, providing intensive business exposure to the target country. Provides students with hands-on research skills, travel, and contact with many sectors of the business community in the target country.

MKT 690 Professional Internship (two to four credits). Prerequisite: Permission of Department Chair, based on student's written proposal approved by Marketing faculty coordinator chosen by the student. Forms should be obtained prior to start of semester from Marketing Department Office. Student must work (under the supervision of a marketing professional) a minimum number of hours during the semester based on the number of credits desired: 225 (two credits), 375 (three credits), or 525 (four credits). Requires professional marketing work in an organizational environment that extends the curriculum and provides meaningful experience related the student's area of interest. At the end of the semester, the student must submit a term report to the sponsoring organization and the faculty coordinator.

MKT 696 Current Problems in Marketing (one to four credits). Prerequisites: **MKT 601** and permission of Department Chair. Selected problems in the field of marketing.

MKT 698 Independent Study (one to four credits). Prerequisites: Two elective **MKT** courses, at least one of which must be at the 600 level, prior approval of a written proposal by Marketing faculty advisor, and permission of Department Chair. Study of a significant problem or area in marketing, conducted under the supervision of the faculty advisor. Term report required.

MKT 800 Research Design and Measurement (3-0-3). Prerequisite: Completion of the Advanced Analytical and Operational Core. Provides an in-depth discussion of research design and measurement issues. Includes principles and logic of experimental and nonexperimental design, measurement theory (validity, reliability, and multiple indicators), data theory and scaling methods (uni-dimensional and summated scales), and comparison, similarity, and preference data.

MKT 801 Marketing Theory (3-0-3). Investigates the development and evolution of marketing thought. Provides a historical perspective in marketing-theory development by reviewing and assessing selected scholarly works.

MKT 802 Global Business Strategy: Theory and Practice (3-0-3). Prerequisite: **MKT 801**. Reviews international business theories and applications, such as absolute and comparative advantage, product life cycle, internalization, market imperfections, and eclectic approaches. Explores issues such as technology transfer, economic development, market integration, and privatization. Includes presentations, research papers, and/or trial dissertation proposal.

MKT 803 Strategic Marketing and Tactical Decisions (3-0-3). Prerequisite: **MKT 801**. Explores theoretical concepts of marketing strategies, their development and implementation, and their success and failure in application. Major tactical areas—such as market entry, positioning, product quality, price, promotion, distribution, and evaluation of market performance—are examined. Investigates issues, methods, models, and findings in the literature.

MKT 804 Multivariate Techniques in Marketing (3-0-3). Prerequisite: **MKT 800**. Emphasizes multivariate techniques—their assumptions, applications, and interpretation of

output. Includes multiple classification analysis, canonical correlation analysis, multivariate analysis of variance, discriminant analysis, factor analysis, cluster analysis, MDS, conjoint analysis, logit and probit models, and other analysis techniques. Uses computer packages to analyze data.

MKT 805 Theory and Research in Buyer Behavior (3-0-3). Prerequisite: MKT 801. Introduces current theoretical and methodological issues in consumer behavior. Emphasizes critical evaluation of the relevant literature and explores avenues for theory development and research.

MKT 891 Doctoral Research in Marketing (variable credit). Prerequisite: Completion of two 800-level marketing electives. Up to 12 credits may be considered toward dissertation credit requirements.

MKT 895 Dissertation Research Seminar (3-0-3). Focuses on research in marketing involving faculty, outside speakers, and dissertation-stage doctoral students. Students also must be enrolled in MKT 899 (Dissertation).

MKT 896 Current Problems in Marketing (variable credit). Prerequisites: MKT 800, MKT 801, and MKT 802. Investigation of selected problems in the field of marketing. May be repeated with change of topic.

MKT 899 Dissertation (variable credit). Prerequisite: Successful completion of comprehensive examinations.

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Operations Management and Business Statistics (OMS) (See Addenda)

OMS 500 Mathematical Models for Business (2-0-2). Prerequisite: Graduate standing. Covers basic algebraic functions, systems of linear equations, and matrix operations to solve systems of linear equations applied to business problems.

OMS 503 Statistical Methods for Business Decisions (3-0-3). Prerequisite: OMS 500. Includes probability distributions, sampling theory, statistical inference, hypothesis testing, chi-square applications, analysis of variance, regression, and correlation, and the role these techniques play in business decision making. Computer applications and results are discussed and interpreted.

OMS 511 Operations Management (3-0-3). Prerequisite: OMS 503. Presents a basic review of production-system design and performance requirements. Topics include operations strategy, total quality management, statistical process control, capacity management, supply chain management, layout decisions, master production scheduling, resource planning, MRP/ERP, lean production system (JIT), project management, and scheduling.

OMS 513 Production Planning and Control (3-0-3). Prerequisite: OMS 511 or equivalent. Problems of planning, scheduling, and controlling of activities related to the production of goods and/or services are examined. Topics include manufacturing planning and control, short-term forecasting systems, demand management and order servicing, master production scheduling (MPS), production planning, capacity planning, integrated MPC systems, implementation of MPC systems, and integrated supply chain management.

OMS 515 Case Studies in Operations Management (4-0-4). Prerequisite: OMS 511 or equivalent. Examines classic and current issues in operations management. Provides advanced fundamental and strategic methodologies for operations decision making. Topics include supply chain management, e-commerce, just-in-time, enterprise resource planning, service operations management, customer service, purchasing, quality control, human resource management, and strategy. Includes readings, lectures, guest speakers, and plant tours.

OMS 517 Just-In-Time Manufacturing (3-0-3). (See Addenda - July 15, 2005) Prerequisite: OMS 511. Presents the just-in-time philosophy in manufacturing. In-depth

exploration of how to synchronize the production process and eliminate unnecessary inventory and non-value-added activities by controlling the process through the use of modern quality methods, such as supplier relationships and preventative maintenance. Students develop a strong understanding of the financial and non-financial incentives used to justify JIT/TQA activities. A solid implementation program also is examined.

OMS 519 Manufacturing Systems and Technologies (3-0-3). Prerequisite: OMS 511 or equivalent. Development and implementation of manufacturing strategy and the interface/integration of this strategy with other functional areas of the organization. Topics include international comparisons, productivity, strategy formulation and development, order-winners and qualifiers, competitive priorities, process choices, capacity planning, vertical vs. virtual integration, sourcing and supply chain strategy, product profiling, manufacturing infrastructure development, and focused manufacturing.

OMS 525 International Operations Management (3-0-3). (See Addenda - January 01, 2005)

OMS 531 Sampling and Experimental Design (4-0-4). Prerequisite: OMS 503 or equivalent. Presents the principal application of sample surveys, survey design, criteria of a good sample design, and characteristics of simple random sampling, stratified random sampling, and cluster sampling. Case studies are used where appropriate to illustrate applications of survey sampling. Research design, data analysis, and the fundamentals of experimental design are examined. Topics include completely randomized design, randomized complete blocks, latin square, factorial, and analysis of variance in regression models. Application of SAS software to actual data.

OMS 545 Quality Control and Management (4-0-4). Prerequisite: OMS 511 or equivalent. Covers the core principles of the management of quality in the production of goods and services. Statistical quality-control techniques are used in the implementation of these principles. Topics include TQM, continuous improvement, control charts, sampling plans, process capability, and ISO 9000. Computer software is used where applicable.

OMS 548 Queuing and Simulation (4-0-4). Prerequisite: OMS 511 or equivalent. Covers the application of discrete-event simulation to operations research problems. Topics include an introduction to a general-purpose simulation language, the study of queuing models, random number generation, and the analysis of simulation data using statistical techniques.

OMS 601/701 Business Decision Methods (3-0-3). Prerequisite: OMS 503 or equivalent. Introduction to widely used management science techniques. Topics include linear programming, transportation problems, network flows, and decision analysis. Introduces computer packages for these techniques. A variety of case studies involving operations research and production management are analyzed.

OMS 611/711 Forecasting (3-0-3). Prerequisite: OMS 503 or equivalent. Intended for students with no previous course work in forecasting. Includes predictions of sales and inventory; examination of criteria for selection of forecasting models, including stage-in-life-cycle of the product; study of smoothing and decomposition methods, leading indicators, multiple regression, and introduction to ARIMA modeling through the use of computer packages.

OMS 621/721 Service Operations Management (3-0-3). Prerequisite: OMS 511 or equivalent. Unique managerial problems associated with the design, control, planning, and evaluation of service systems. Tactical and strategic problems faced by service managers and how decisions are actually made in the real world.

OMS 622/722 Project Management (3-0-3). Prerequisite: OMS 511. Discusses the complexities involved in project management, the use of networks in large-scale projects, and the development of networks. Presents network computations for time, CPM/ PERT, time-cost tradeoff, project scheduling, and other networks such as GERT. Includes the use of computer software.

OMS 623/723 Materials and Supply Chain Management (4-0-4). Prerequisite: OMS

511. Discusses some fundamental and strategic issues in materials management and supply chain management. Presents decision rules and guidelines for various qualitative or quantitative materials-management problems. Topics include purchasing, inventory systems with deterministic and probabilistic demand, multi-item inventory systems, materials requirement planning, JIT, distribution inventory systems, coordinating supply chain design, supply chain management strategies, and customer value management. Cases from business and current issues are discussed.

OMS 624/724 Global Operations Management (3-0-3). Prerequisite: OMS 511 or equivalent. Introduction to operations management for companies operating in the international setting. Topics include global operations strategy, supply chain management across multiple national boundaries, global operations projects, and performance issues.

OMS 625/725 Global Operations Management Field Study (0-4-2). Students participate in a hands-on field study in operations of international firms (manufacturing and service) located in foreign countries. Data is collected through interviews with managers and executives of these firms, government officials of the host countries, and published materials, both printed and on the Internet. A term paper is required after returning to Cleveland. The instructor arranges the visit to companies and countries.

OMS 633/733 Multivariate Statistical Methods (3-0-3). Prerequisite: OMS 503 or equivalent. Presents applications of multivariate statistical methods, such as multiple regression, analysis of covariance, discriminant analysis, multivariate analysis of variance, and factor analysis. Computer packages for the methods also are introduced and used extensively.

OMS 640 ISO 9000 and Quality Audit (3-2-4). Prerequisite: OMS 511 or equivalent. Introduction to the international quality standard ISO 9000 and its application to the automotive industry (QS 9000). Techniques of conducting a quality audit are covered. Students form teams to complete live audits (first or second party audit) with local companies. Information systems.

OMS 645 Statistical Quality Control and Improvement (3-0-3). Prerequisite: OMS 503 or equivalent. A development of the statistical tools for the implementation of statistical quality control and improvement programs. Includes the development of control charts and the fundamentals of experimental design. These techniques are applied in a variety of manufacturing and service situations.

OMS 690 Professional Internship (one to four). Prerequisite: Permission to register must be obtained from the Department Chair early in the semester prior to enrollment in the course. Requires professional OMS work in an organizational environment that extends the curriculum and provides meaningful experience related to the student's area of interest. Term report required.

OMS 696 Current Problems (one to four credits). Prerequisite: OMS 511. Selected problems in the field of operations management. With the permission of the instructor, may be repeated with change of topic.

OMS 698 Independent Study (one to four credits). Prerequisites: Two elective OMS courses, at least one of which must be at the 600 level; prior approval of a written proposal by OMS faculty advisor; and permission of Department Chair. Study of a significant problem or area in operations management or business statistics, conducted under the supervision of the faculty advisor. Term Report required.

OMS 801 Theory of Optimization in Production and Operations (3-0-3). Prerequisites: OMS 601/701 or equivalent and completion of Advanced Analytical and Operational Core. Development of advanced optimization models for linear and non-linear systems. Topics include unconstrained optimization, dynamic programming, integer programming, and heuristic algorithms. Required for OMS majors in the D.B.A. program.

OMS 802 Current Topic Professional Seminar (3-0-3). Prerequisite: Minimum of one 600-level OMS course. A seminar course in which recent publications play a major role. The topic chosen in any term depends on the interests of the students and the instructor. The topic

relates to the application of quantitative methods to any one of the following or related areas: control, logistics, project management, distribution systems, process selection and facility design, multiple-criteria decision making, maintenance management, or reliability. Required for OMS majors in the D.B.A. program.

OMS 804 Production Planning and Inventory Control (3-0-3). Prerequisite: OMS 511 or equivalent. Analysis of various decision areas in an integrated production planning and inventory system. Topics include advanced methodologies related to forecasting, inventory control, material requirements planning, operations scheduling, project scheduling, line balancing, and production control.

OMS 805 Quality Control (3-0-3). Prerequisites: OMS 511 and OMS 545, or equivalents. A study of advanced statistical techniques relevant to the total-quality-control aspect in industrial organizations. Emphasis on methodology, such as control charts, inspection systems, acceptance sampling plans, and recent areas of quality-control development. Journal articles are used to cover areas of new methodology.

OMS 814 Flexible Manufacturing Systems (3-0-3). Prerequisite: OMS 511. Provides the tools for research in Flexible Manufacturing Systems (FMSs) and Advanced Manufacturing Technology (AMT). Topics include recent developments and international comparisons of FMSs, long-range strategic and economic decisions, intermediate-range FMS planning problems, short-range operation scheduling, real-time control and planning, and implementation of advanced manufacturing technology. Papers selected from major academic journals are discussed extensively to identify future research opportunities. Each student is expected to write a literature review paper under the instructor's guidance.

OMS 819 Operations Strategy (3-0-3). Prerequisite: OMS 511 or permission of instructor. Focuses on the emerging literature and research in operations strategy. Includes the conceptual basis of operations strategy by reviewing the works of authors such as W. Skinner, Hayes, Wheelwright, T. Hill, and C.A. Voss. A focus on current research appearing in journals and conference proceedings. Students develop a familiarity with the literature base and research paradigms in operations strategy. In addition, students develop broader understanding of the research issues in POM in general and establish a POM research agenda.

OMS 822 Project Management and Scheduling (3-0-3). Prerequisites: OMS 511 and OMS 622/722, or permission of instructor. In-depth analysis of scheduling problems in project management. Survey of the three fundamental scheduling classes: Resource Constrained Project Scheduling Problems (RCPS), Time/Cost Tradeoff Project Scheduling Problems (TCTP), and Payment Scheduling Problems (PSP). Investigation of newly introduced problems integrating two or more of the problem classes mentioned above. Survey of the three classes of problems and an introduction to the mathematical formulation of each with the help of several fundamental papers published in the early 1970s.

OMS 891 Doctoral Research in Production/Operations Management (variable credit). Prerequisite: Completion of two 800-level production/operations management electives. Up to 12 credits may be considered toward dissertation credit requirements.

OMS 895 Dissertation Research Seminar (3-0-3). Research in production/operations management involving faculty, outside speakers, and dissertation-stage doctoral students.

OMS 896 Current Problems in Production/Operations Management (variable credit). Prerequisites: OMS 801 and OMS 802. Investigation of selected problems in production/operations management. May be repeated with change in topic.

OMS 899 Dissertation (variable credit). Prerequisite: Successful completion of comprehensive examinations.

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Cleveland State University

2121 Euclid Avenue, Cleveland, Ohio 44115

www.csuohio.edu 216.687.2000

Contact Webmanager

Cleveland State University

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2121 Euclid Avenue, Cleveland, Ohio

44115 • 216.687.2000

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College of Graduate Studies

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Graduate Catalog 2004-2006

Master of Arts in

Economics

Department of Economics

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The Faculty

Professors:

Diran Bodenhorn, Emeritus
 Karl B. Bonutti, Emeritus
 Leonard W. Martin, Emeritus
 Vijay K. Mathur, Chair
 Clinton L. Warne, Emeritus

Associate Professors:

Edward B. Bell
 John F. Burke, Jr., Emeritus
 Myong-Hun Chang
 Jon D. Harford
 Harvey S. Rosen, Emeritus
 Sheldon H. Stein
 Douglas O. Stewart
 Allan J. Taub

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Introduction

The primary objective of the graduate program in economics is to develop economists who can meet the demand of the private sector, the not-for-profit sector, and government for competent personnel who are well trained in the tools of economic analysis and measurement. The program stresses a strong foundation in standard economic theory, econometric methods, and their application to current problems faced by businesses, the not-for-profit sector, and government agencies. Although the Master of Arts in Economics is designed as a terminal degree program, students who complete the program are well prepared for further graduate training in economics. The program is aimed at students with an undergraduate degree in economics or business, as well as students with undergraduate training in other academic fields.

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Faculty Research and Publications

Faculty members conduct research and publish articles on a wide range of economic issues, including pollution-control policies, location of firms, regional economic development,

industry studies, health economics, lifetime earnings, and public finance.

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Financial Assistance

Graduate [assistantships](#) are available to a limited number of qualified graduate students. Assistants receive a stipend and tuition support. Contact the Department of Economics for graduate assistant application information. Other employment opportunities may be available on campus. For information on the graduate assistantship policy, see the section on Expenses and [Financial Aid: Graduate Assistantships](#) in the front of this Catalog.

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Admission Information

To be admitted as a Regular graduate student, the applicant must have a bachelor's degree with at least a 2.75 [grade-point](#) average and have successfully completed courses in intermediate microeconomics, intermediate macroeconomics, calculus, and statistics. Students who do not meet these requirements are encouraged to take the requisite courses and/or consider the options described in the section on Non-Degree Admission in this Catalog.

International applicants must provide official [TOEFL](#) and [GRE](#) (general) test scores received directly from ETS.

To facilitate the admission process, it is strongly recommended that applicants use the online application system at www.csuohio.edu/admissions/gradForm.html. The processing time for paper application forms is longer.

Students are advised to begin the program in the fall semester.

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Degree Requirements

The M.A. in Economics program requires the completion of 33 credit hours, including seven required courses plus two approved elective courses as follows:

Required

ECN 610 Mathematical Economics for Economists (two credits)

ECN 622 Statistical Methods for Economists (three credits)

ECN 625 Econometrics (four credits)

ECN 633 Advanced Microeconomics (four credits)

ECN 635 Competition and Strategy (four credits)

ECN 643 Advanced Macroeconomics (four credits)

ECN 654 Financial Economics (four credits)

Electives

Select two of the following approved courses for a total of eight credits:

ECN 541 Business Fluctuations and Forecasting

[ECN 550 Economics of Law](#)

[ECN 574 Environmental and Natural Resource Economics](#)

[ECN 582 International Economics](#)

[ECN 694 Special Topics in Economics](#)

[ECN 695 Seminar in Economics](#)

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Courses (See Addenda - March 15, 2005)

[ECN 501 Macroeconomic Analysis \(3-0-3\)](#). Concentration on macroeconomics, the money and banking system, and national income and employment analysis. For M.B.A. students only; candidates for the M.A. in Economics may not include this course as part of their required 33 hours.

[ECN 502 Microeconomic Analysis \(3-0-3\)](#). Emphasis on microeconomics; theory of consumer behavior and of the firm, and the pricing process in markets. For M.B.A. students only; candidates for the M.A. in Economics may not include this course as part of their required 33 hours.

[ECN 503 Economic Concepts \(3-0-3\)](#). A survey of microeconomic and macroeconomic concepts. Topics include supply and demand; comparative advantage; marginal and sunk costs; market structure; profits; aggregate fluctuations; money; and fiscal and monetary policy. For M.B.A. students only. Candidates for the M.A. in Economics may not include this course as part of their required 33 hours, nor to fulfill program prerequisites.

[ECN 511 American Economic History \(3-0-3\)](#). Prerequisites: Intermediate microeconomic and macroeconomic theory. Examination of the economic theories underlying the development of the American economy. Offered on sufficient demand.

[ECN 515 History of Economic Analysis \(3-0-3\)](#). Prerequisites: Intermediate microeconomic and macroeconomic theory. Development of economic theories and their relationship to each other, from ancient to modern schools of thought. Offered on sufficient demand.

[ECN 516 Comparative Economic Systems \(3-0-3\)](#). Prerequisites: Intermediate microeconomic and macroeconomic theory. Analysis of selected economic systems with an emphasis on economic planning. Offered on sufficient demand.

[ECN 541 Business Fluctuations and Forecasting \(4-0-4\)](#). Prerequisite: Intermediate macroeconomics or equivalent. Nature and causes of business fluctuations, business cycle theories; methods of forecasting GDP, inflation, and unemployment; micro-foundations of macroeconomic forecasting equations dealing with consumption functions, investment function, demand for money, Okun's law, Phillip's curve, price equation.

[ECN 550 Economics of Law \(4-0-4\)](#). Prerequisite: Intermediate microeconomics or equivalent. The concepts of public and private goods, externalities, and benefits versus cost are used to analyze the effects and efficiency of property, contract, tort, and criminal law. In addition, the trade-offs are examined in such areas as plea-bargaining, trial versus settlement of civil cases, and various arrangements for payment of legal costs.

[ECN 561 Public Expenditures \(3-0-3\)](#). Prerequisite: Intermediate microeconomics. Introduction to public-sector economics, including welfare economics and the role of the public sector in a mixed economy; public expenditure theory; and economic analysis of various federal government expenditure programs. Offered on sufficient demand.

ECN 562 Taxation (3-0-3). Prerequisite: Intermediate microeconomics. Economic theory of taxation; economic analysis of federal taxation, including the personal income, corporate, and social security taxes; and analysis of such state and local taxes as property and sales. Offered on sufficient demand.

ECN 570 Urban and Regional Economics (3-0-3). Prerequisite: Intermediate micro-economic theory. Location theory of the firm and industry, industrial locational patterns, land-use patterns, measurement of economic activity, and regional trade; regional hierarchies and systems of cities; techniques of regional analysis; base theory, local multipliers, input-output analysis, gravity, potential, and spatial interaction models. Offered on sufficient demand.

ECN 572 Urban Manpower Problems (3-0-3). Prerequisite: Intermediate micro-economic theory. Intensive analysis of labor markets; wages and income determination and distribution; structural versus demand unemployment; productivity and the supply of labor; technology and changes in demand for labor; unemployment and urban poverty; job security, wage and hour regulation; training and manpower policies. Offered on sufficient demand.

ECN 574 Environmental and Natural Resource Economics (4-0-4). Prerequisite: Intermediate microeconomic theory. Analysis of the causes of environmental problems using the concepts of public goods and externalities. Examination of the impact and efficiency of regulatory approaches in controlling pollution and congestion. Externality and sustainability issues involving the rate of exploitation of natural resources are explored. Both positive and normative economic reasoning are applied to the related issues of population size, economic-ecological interactions, and future prospects for humanity.

ECN 582 International Economics (4-0-4). Prerequisites: Intermediate microeconomic and macroeconomic theory. The determinants of comparative advantage and the pattern of international trade; the gains from trade, and the effects of trade restrictions; trade, growth, and development; the balance of payments; the economics of exchange rates; macroeconomics in an open economy. Cross-listed with [ECN 782](#). Candidates for the M.A. in Economics should register for [ECN 582](#).

ECN 585 Economics of Development and Growth (3-0-3). Prerequisites: Intermediate microeconomic and macroeconomic theory. A theoretical approach to development problems of the less-developed nations; comparison of various growth theories; the role of capital, infrastructure, international assistance, and the surplus labor economy. Offered on sufficient demand.

ECN 610 Mathematical Economics for Economists (2-0-2). Prerequisite: MTH 181 or equivalent. Provides a technical foundation for other graduate courses. An examination of calculus of one and several variables, including partial and total differentiation, and first- and second-order derivatives, with applications to economic analysis and optimization. Elements of matrix algebra are studied along with various applications.

ECN 622 Statistical Methods for Economists (3-0-3). Prerequisite: OMS 201 or equivalent. Econometric methods and their applications; regression analysis and its extensions.

ECN 625 Econometrics (4-0-4). Prerequisites: [ECN 610](#) and [ECN 622](#) or equivalents. Classical least squares assumptions for simple and multiple regression; estimation; associated statistics, e.g., R^2 , hypothesis testing, and confidence intervals; scaling; prediction; dummy variables; heteroscedasticity; autoregressive disturbances; multicollinearity; certain types of specification error; lagged relationships; simultaneous equilibrium models; limited dependent variable models; time series topics. Cross-listed with [ECN 725](#). Candidates for the M.A. in Economics should register for [ECN 625](#).

ECN 633 Advanced Microeconomics (4-0-4). Prerequisites or co-requisite: [ECN 610](#) or equivalent and intermediate microeconomics. Consumer theory; choice and demand under certainty and uncertainty; intertemporal choice; production, input demand and cost, supply; and perfectly competitive markets and applications. Cross-listed with [ECN 733](#). Candidates for the M.A. in Economics should register for [ECN 633](#).

ECN 635 Competition and Strategy (4-0-4). Prerequisites or co-requisite: **ECN 610** or equivalent and intermediate microeconomics. Organization of firms and markets in perfectly competitive industries. Internal organizational strategies (scale and scope, make-or-buy, centralization versus decentralization), external competitive strategies (pricing, product choice, advertising, entry and exit, R&D), and their mutual interdependence are analyzed. Cross-listed with **ECN 735**. Candi-dates for the M.A. in Economics should register for **ECN 635**.

ECN 643 Advanced Macroeconomics (4-0-4). Prerequisites: **ECN 610** or equivalent and intermediate macroeconomics. An analytical examination of the forces that determine the level of national income, employment, prices, and economic growth under the classical, Keynesian, and post-Keynesian assumptions; Ricardian equivalence, time inconsistency issue, growth models, macroeconomic policy. Cross-listed with **ECN 743**. Candidates for the M.A. in Economics should register for **ECN 643**.

ECN 654 Financial Economics (4-0-4). Prerequisite: **ECN 633**. Monetary systems; financial markets; financial intermediation; risk; term structure of interest rates; models of stock and bond prices; capital asset pricing model; financial derivatives; the efficient markets hypothesis; central banking; monetary theory. Cross-listed with **ECN 754**. Can-didates for the M.A. in Economics should register for **ECN 654**.

ECN 656 Monetary Theory and Policy (3-0-3). Prerequisite: **ECN 654**. Monetary theories, supply and demand for money, and the instruments of monetary control, including the influence of monetary policy on money and capital markets; examination of proposed alternate monetary policies. Offered on sufficient demand.

ECN 694 Special Topics in Economics (credit as arranged, maximum of four). Prerequisite: Permission of instructor. Course title and content may change from term to term. May be repeated with change of topic.

ECN 695 Seminar in Economics (credit as arranged, maximum of four). Prerequisite: Permission of instructor. Discussion course in a particular area of economics with one instructor and a small group of students. May be repeated with change of topic.

DBA Courses

Courses offered as part of the Doctor of Business Administration program are:

ECN 725 Econometrics (4-0-4). Prerequisites: **ECN 610** and **ECN 622**, or permission of instructor. Classical least squares assumptions for simple and multiple regression; estimation; associated statistics, e.g., R^2 , hypothesis testing, and confidence intervals; scaling; prediction; dummy variables; heteroscedasticity; autoregressive disturbances; multicollinearity; certain types of specification error; lagged relationships; simultaneous equilibrium models; limited dependent variable models; time series topics. Cross-listed with **ECN 625**.

ECN 733 Advanced Microeconomics (4-0-4). Prerequisites or co-requisite: **ECN 610** and intermediate microeconomics. Consumer theory; choice and demand under certainty and uncertainty, intertemporal choice; production, input demand and cost, supply; and perfectly competitive markets and applications. Cross-listed with **ECN 633**.

ECN 735 Competition and Strategy (4-0-4). Prerequisites or co-requisite: **ECN 610** and intermediate microeconomics. Organization of firms and markets in perfectly competitive industries. Internal organizational strategies (scale and scope, make-or-buy, centralization versus decentralization), external competitive strategies (pricing, product choice, advertising, entry and exit, R&D), and their mutual interdependence are analyzed. Cross-listed with **ECN 635**.

ECN 743 Advanced Macroeconomics (4-0-4). Prerequisites: **ECN 610** and intermediate microeconomics. An analytical examination of the forces that determine the level of national

income, employment, prices, and economic growth under the classical, Keynesian, and post-Keynesian assumptions; Ricardian equivalence, time inconsistency issue, growth models, macroeconomic policy. Cross-listed with [ECN 643](#).

[ECN 754 Financial Economics \(4-0-4\)](#). Prerequisite: [ECN 733](#). Monetary systems; financial markets; financial intermediation; risk; term structure of interest rates; models of stock and bond prices; capital asset pricing model; financial derivatives; the efficient markets hypothesis; central banking; monetary theory. Cross-listed with [ECN 654](#).

[ECN 782 Advanced International Economics \(4-0-4\)](#). Prerequisites: [ECN 610](#) or equivalent and intermediate microeconomics. The determinants of comparative advantage and the pattern of international trade; the gains from trade and the effects of trade restrictions; trade, growth, and development; the balance of payments; the economics of exchange rates; macro-economics in an open economy. Cross-listed with [ECN 582](#).

[ECN 794 Special Topics in Economics \(credit as arranged, maximum of four\)](#). Prerequisite: Permission of instructor. Course title and content may change from term to term. May be repeated with change of topic.

[ECN 795 Seminar in Economics \(credit as arranged, maximum of four\)](#). Prerequisite: Permission of instructor. The seminar focuses on a particular area of economics, and requires class presentations by students and out-of-class writing assignments, as well as other assignments chosen by the instructor. May be repeated with change of topic.

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Cleveland State University

2121 Euclid Avenue, Cleveland, Ohio 44115

www.csuohio.edu 216.687.2000

Contact Webmanager

Cleveland State University

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2121 Euclid Avenue, Cleveland, Ohio
44115 • 216.687.2000

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College of Graduate Studies

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Addenda

Graduate Catalog 2004-2006

Cleveland State University (See Addenda)

The University

Cleveland State University is a state-assisted, metropolitan university whose mission is to recruit and instruct a diverse student population, provide strong arts and sciences programs, support excellence in education, reaffirm its commitment to basic and applied research, and provide a supportive and nurturing educational environment for members of the community.

Cleveland State has over 16,000 students enrolled in more than 70 undergraduate programs, 38 master's-level programs, two law degree programs, three specialist degrees (two in education and one in school psychology), six doctoral programs, and joint law-business, law-public administration, and law-environmental studies programs. The University also offers over a dozen graduate certificate programs. Approximately one third of Cleveland State's students are enrolled in graduate or professional programs.

The University's eight colleges are the College of Liberal Arts and Social Sciences, the College of Science, the James J. Nance College of Business Administration, the College of Education and Human Services, the Fenn College of Engineering, the Maxine Goodman Levin College of Urban Affairs, the Cleveland-Marshall College of Law, and the College of Graduate Studies. Descriptions of the University's baccalaureate programs are contained in the Cleveland State University Bulletin: Undergraduate Catalog. Programs in the College of Law are described in the Cleveland-Marshall College of Law Catalog.

Other important academic divisions of the University are Continuing Education, which offers a variety of special, non-credit learning opportunities, and the Division of University Studies, which provides comprehensive academic and student support services, including orientation programs, academic advising, tutoring, assistance to students with disabilities, the English as a Second Language program, mentoring services, and career development and planning.

Another program of interest is Project 60. This program, administered through the University Studies Advising Center, offers senior citizens the opportunity to take undergraduate and graduate courses on a tuition-free, non-credit, and space-available basis regardless of their academic backgrounds. Project 60 allows elders to sample undergraduate and graduate courses without being admitted formally to a degree program.

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University Mission Statement

Our mission is to encourage the development of human and humane knowledge in the arts, sciences, humanities, and professions through scholarship, creative activity, and research while providing an accessible and contemporary education to all individuals. We are here to serve and engage the public and prepare our students to lead productive, responsible, and satisfying lives in the region and global society.

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University Vision Statement

We will be recognized as a student-focused center of scholarly excellence that provides an accessible and exceptional education to all. We will be a place of opportunity for those who seek truth, strive toward excellence, and seek a better life for themselves and for their fellow citizens. As a leader in innovative collaboration—both internally and externally—with business, industry, government, educational institutions, and the community, the University will be a critical force in the region’s economic development. We will be at the forefront of moral, ethical, social, artistic, and economic leadership for the future and embrace the vitality that comes with risk. We will be the strongest public university in the region and be known for our scholarship in service to students and to our community.

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History

Established as a state-assisted university in 1964, Cleveland State was created out of the buildings, faculty, staff, and curriculum of the former Fenn College, a private institution of 2,500 students that was founded in 1929.

Cleveland State University’s historical roots go back to the 19th century. During the 1880s, the Cleveland YMCA began to offer day and evening courses to students who did not otherwise have access to higher education. The YMCA program was reorganized in 1906 as the Association Institute, and this in turn was established as Fenn College in 1929. A significant contribution of Fenn College was its pioneering work in developing internships for students in engineering and business. These internships, as joint ventures between the college and local businesses and industries, provided students with professional contacts and experience as well as an affordable education. The historic Fenn Tower still stands as a reminder of these early years, when the University already had a strong commitment to equal access to higher education.

The Cleveland-Marshall College of Law traces its origins to 1897 when the Cleveland Law School was founded. It was the first evening law school in the state and one of the first to admit women and minorities. Another evening law school, John Marshall School of Law, was founded in 1916. In 1946, the two schools merged to become the Cleveland-Marshall School of Law. Cleveland-Marshall became part of Cleveland State University in 1969.

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Evening and Weekend Classes

Most graduate degree programs are available in the evening. During a typical term, more than 5,500 undergraduate and graduate students attend the hundreds of classes offered during the late afternoon and evening hours. Many classes meet once a week or on Saturdays, providing other scheduling alternatives.

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Location

Strategically located in downtown Cleveland, the University sits in the midst of major businesses and institutions that provide students with internships and other career opportunities. Nearby neighbors include The Plain Dealer (Ohio’s largest newspaper), Playhouse Square Center (home of the Cleveland Ballet, the Cleveland Opera, the Great Lakes Theater Festival, and touring Broadway productions), Tower City Center, Jacobs Field, Gund Arena, and the North Coast Harbor, which is the home of the Rock and Roll Hall of Fame and Museum, the Great Lakes Science Center, and Cleveland Browns Stadium.

Within easy reach of the University are the Cleveland Clinic, Severance Hall (home of the Cleveland Orchestra), the Cleveland Museum of Art, the Cleveland Museum of Natural

History, the Cleveland Play House (the oldest repertory theater company in the country to have a continuous existence), Karamu House (America's oldest African American community theater company), and the Western Reserve Historical Society.

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Extended Campuses

Expanding its horizons, Cleveland State University has established extended campus sites in both Westlake and Solon to better serve Northeastern Ohio.

The West Center is located in the Fencorp Building at 26202 Detroit Road.

The East Center is located in the Centre Point Building at 34055 Solon Road.

These new facilities house six to 10 classrooms each, state-of-the-art computer labs, student lounges, and various administrative offices. These one-stop academic hubs are conveniently located at major highways, serving eastern and western suburbs. For information, call (216) 875-9600.

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Accreditation



In addition, individual Cleveland State degree programs hold the following professional accreditations:

Business Administration: B.B.A. and M.B.A. programs of the James J. Nance College of Business Administration are accredited by AACSB International, the Association to Advance Collegiate Schools of Business. In a separate accrediting process, the graduate and undergraduate programs in accounting are accredited by the AACSB. The Health Care Administration program is accredited by the Accrediting Commission on Education for Health Services Administration (ACEHSA).

Chemistry: The Chemistry Department's undergraduate curriculum is approved by the American Chemical Society. Its clinical chemistry Ph.D. program is accredited by the Commission on Accreditation in Clinical Chemistry (ComACC).

Education: The College of Education is accredited by the Ohio Department of Education and the National Council for Accreditation of Teacher Education (NCATE). The Community Agency Counseling and School Counseling programs are accredited by the Council for Accreditation of Counseling and Related Educational Programs (CACREP).

Engineering: The bachelor's degree programs in Chemical, Civil, Electrical, Industrial, and Mechanical Engineering are accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology. The Bachelor of Science in Electronic Engineering Technology program is accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology. Graduate programs in engineering are reviewed through regular self-study and by other state/OBOR agencies.

Law: The College of Law is accredited by the American Bar Association and is a member of the Association of American Law Schools.

Music: The graduate and undergraduate Music Department curricula are accredited by the National Association of Schools of Music.

Nursing: (See Addenda - January 06, 2005) The Nursing Department curriculum is fully accredited by the National League for Nursing Accreditation Commission (NLN-AC). The graduate program in nursing is accredited by CCNE, the Commission on Collegiate Nursing Education.

Occupational Therapy: The curriculum in Occupational Therapy is accredited by the Accreditation Council for Occupational Therapy Education.

Physical Therapy: The curriculum in Physical Therapy is accredited by the Commission on Accreditation in Physical Therapy Education.

Public Administration: The Master of Public Administration curriculum is accredited by the National Association of Schools of Public Affairs and Administration (NASPAA).

Social Work: The Department of Social Work curriculum is fully accredited at the undergraduate and graduate levels by the Council of Social Work Education (CSWE).

Speech and Hearing: The academic and clinical program in Speech-Language Pathology is accredited by the American Speech-Language and Hearing Association (ASHA). The graduate academic program is accredited by the ASHA Council on Academic Accreditation (CAA), and the clinical program is accredited by the Professional Services Board (PSB).

Urban Planning, Design, and Development: The Master of Urban Planning, Design, and Development curriculum is accredited by the Planning Accreditation Board.

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Student Assessment Policy

Cleveland State University has an abiding commitment to the assessment of students' academic achievement (student outcomes) to provide excellent teaching in its undergraduate and graduate programs. Assessment occurs within colleges, departments, and programs, and all units adhere to the same institutional principles. Clear statements of learning outcomes developed by the faculty provide the basis of the evaluation, and more than one assessment technique is generally utilized. Faculty use the information gained from assessment activities in program improvement. Students play a significant role in the assessment process at Cleveland State University. Assessment data typically are gathered at three points in students' academic careers—at the start, midpoint, and conclusion of their studies. Faculty and students benefit from participating in assessment activities, and collectively these efforts keep the University mindful of, and responsive to, the needs of the community.

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Affirmative Action Policy

Cleveland State University is committed to the principles of equal employment and educational opportunity for all individuals and to the development and implementation of results-oriented procedures and programs to enhance access and opportunity for minorities and women, persons with disabilities, and Vietnam-era veterans. The Board of Trustees has charged everyone associated with the University to support and implement these procedures and programs and to participate in achieving their maximum success.

The Affirmative Action Office is responsible for the administration of the University's equal opportunity and affirmative action policies and procedures. Through formal and

informal procedures, the Affirmative Action Office is primarily responsible for the investigation and resolution of all complaints of unlawful discrimination including complaints of sexual, racial, and any other types of unlawful harassment. The Affirmative Action Office seeks to achieve a fair and prompt resolution of discrimination complaints and takes appropriate action when necessary. The Affirmative Action Office works cooperatively with departments and units to provide training and information on unlawful discrimination and affirmative action issues to increase awareness of these issues throughout the University community and promote the full participation, well-being, and equitable treatment of all students, faculty, and staff, regardless of age, race, color, religion, national origin, ancestry, sex, sexual orientation, disability, disabled Veteran, Vietnam Veteran or other protected Veteran status.

The Affirmative Action Office is located in the Keith Building, Room 1401; telephone (216) 687-2223.

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Sexual Harassment Policy

It is the policy of the University that no member of the University community shall engage in sexual harassment. Sexual harassment is a form of sex discrimination that is both reprehensible and unlawful. It is contrary to the most fundamental ethical canons of the academic community. The University will not tolerate sexual harassment because it creates an unacceptable or injurious working or educational environment.

Unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature constitute sexual harassment when: 1) submission to such conduct is made either explicitly or implicitly a term or condition of instruction, employment, or participation in any University activity; 2) submission to or rejection of such conduct by an individual is used as a basis for evaluation in making a decision affecting instruction, employment, or other University activity; 3) such conduct has the purpose or effect of unreasonably interfering with an individual's academic or work performance or creates an intimidating, hostile, or offensive University environment.

Copies of the University policy, including complaint procedures, may be obtained from the Affirmative Action Office, the Office of Minority Affairs and Community Relations, the Department of Student Life, and the Department of Human Resources Development and Labor Relations. The Director of Affirmative Action has primary responsibility for the investigation and resolution of sexual harassment complaints.

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College of Graduate Studies

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Graduate Catalog 2004-2006

Master of Arts in History

Department of History

Rhodes Tower 1915
 (216) 687-3920
www.csuohio.edu/history/
www.csuohio.edu/art/p/his_grad.html

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The Faculty

Professors:

David Adams
 Donald Ramos
 William I. Shorrock

Associate Professors:

Gregory Conerly
 David J. Goldberg
 Thomas L. Hartshorne, Emeritus
 Thomas Humphrey
 Elizabeth Lehfeltd
 Lee Makela
 Joyce M. Mastboom, Chair
 Deborah Pearl
 Mark T. Tebeau
 Robert Wheeler

Assistant Professors:

Mary Wren Bivins
 Robert Shelton
 Karen Sotiropoulos
 J. Mark Souther
 Laura Wertheimer
 Regennia Williams

Additional Program Faculty:

Ron Haybron
 José Sola

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Introduction

The Master of Arts in History program offers advanced training in American and European history. The program is particularly well suited for pre-doctoral students, for secondary school teachers seeking additional enrichment, and for those interested in pursuing careers in public history. Close student and faculty contact is encouraged through a combination of lecture-discussion courses and research and reading seminars that are designed to broaden and deepen the students' historical knowledge and provide training in history as a scholarly discipline. The department has developed new courses in the fields of Early Modern European History, American and European Social History, African American History, Atlantic History, and

Public History. Advanced M.A. candidates are eligible for internships in archival management at The Cleveland Press collection of Cleveland State. Other internship opportunities also are frequently available.

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Admission Information

In addition to College of Graduate Studies requirements for admission, applicants to the History program must have:

1. An undergraduate major in history with a **grade-point** average of 3.00 or better, or sufficient undergraduate history courses with grades of B or better to serve as an indicator of probable success in the graduate history program. If possible, the applicant should secure letters of recommendation from professors from whom the applicant has taken advanced undergraduate history courses.
2. Results of the Subject Test of the Graduate Record Examination (**GRE**) are desired from all applicants. **GRE** test results are required, however, for applicants who do not meet the College of Graduate Studies requirement of at least a 2.75 undergraduate **GPA** for admission.

Under special circumstances, an applicant may remediate undergraduate deficiencies by enrolling as a non-degree student. Non-degree students must achieve a graduate **GPA** of 3.00 or better for 12 credit hours in approved courses to qualify for admission.

To facilitate the admission process, it is strongly recommended that applicants use the online application system at www.csuohio.edu/admissions/gradForm.html. The processing time for paper **application forms** is longer.

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Financial Assistance

The Department of History offers a number of graduate **assistantships** and internships to complement full-time study. **Assistantships** and internships require 20 hours of service per week to the department. Graduate assistant responsibilities include tutoring students, assisting professors in the preparation of lectures and discussions, and working on departmental programs. Additional financial assistance is available through various internship programs.

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Career Information

The History M.A. program is intended to prepare students for entry into doctoral programs in history and art history. Graduates of the program also are prepared for secondary-level teaching in history and social studies, as well as careers in public history (i.e., the practice of history in a non-academic setting), archival management, and historical preservation.

In addition, the master's program in history develops a variety of skills that are basic to success in many careers in business and other professions. Recent graduates have demonstrated skills in conceptualization, research, analysis, and oral and written communication in careers in banking, the media, insurance, journalism, law, marketing and advertising, publishing, and government service.

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Faculty Research and Publications

All members of the **graduate faculty** participate in the activities of local and national historical associations and are active in research and publication in their fields of specialization. In

recent years, faculty members have made important scholarly contributions in the form of books and articles on diverse topics, such as medieval maritime history, Brazilian family structure, a biography of President Garfield, European exploration in colonial Africa, social protest in Tudor and Stuart England, African American community life, French diplomacy in the 1930s, U.S. gender history, Russian revolutionary and workers' movements, American labor and immigration history, American popular culture, the emergence of capitalism in the Netherlands, and the Japanese reaction to U.S. immigration laws. The M.A. program is designed to encourage students to interact closely with faculty in their areas of interest. Through research and reading seminars, independent study, and/or the writing of a master's thesis, students are encouraged to develop independent research and writing skills.

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Degree Requirements

Students may pursue either of two plans for the Master of Arts degree in History. Plan A requires the writing of a thesis while Plan B requires additional courses in lieu of a thesis. The prospective student selects one of the programs in consultation with the Graduate Program Director.

For both plans, students are required to complete a total of 32 credit hours in approved courses with at least a 3.00 *grade-point* average. Depending on their undergraduate preparation in history, students, with approval, may take up to eight credit hours in courses outside of the History Department. For the policy on transferring credit from another institution, see the section on Transfer Credit in this Catalog.

Upon admission, each student must consult with the Director of Graduate History Studies in order to establish a general plan of study. HIS 697 Independent Study in History can be taken only with the approval of the Graduate Program Director.

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Special Requirements for Plan A

1. A minimum of 24 credit hours in 600-level courses, which must include:

a. HIS 601 Introduction to Graduate Study in History

and

HIS 695 Research Seminar in American, European, or Social History.

b. A minimum of two reading seminars (eight credits).

c. Thesis (up to eight credits).

2. The remaining eight credit hours may be taken at the 500 level.

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Special Requirements for Plan B (See Addenda - March 15, 2005)

1. A minimum of 16 credit hours in 600-level courses, which must include:

a. HIS 601 Introduction to Graduate Study in History

and

HIS 695 Research Seminar in American, European, or Social History.

b. A minimum of two reading seminars (eight credits).

2. The remaining 16 credit hours may be taken at the 500 level, including Art History courses.

Art History Specialization

Art Faculty

Professors:

Thomas E. Donaldson
Masumi Hayashi
Walter C. Leedy, Jr.
Kenneth Nevadomi
Howie Smith, Chair

Associate Professors:

Kathy Curnow
George A. Mauersberger
Richard D. Schneider

Assistant Professors:

David A. Gall
Irina A. Koukhanova
Qian Li
Jennifer Visocky-O'Grady

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Introduction

The History Department and the Art Department offer an interdisciplinary program that leads to a Master of Arts degree in History with a specialization in art history. The program provides a comprehensive approach to the integral study of history and art and allows advanced training that broadens and deepens the student's knowledge about the relationship between art and history.

The program is broad in scope rather than highly specialized. Depth in a specialized area is achieved through independent study, thesis, and related courses in history or approved electives. The program is designed to accommodate both full-time students and those students who are currently working but are free for classes after 4 p.m. Due to the interdisciplinary nature of the program and the number of credits required, it is expected that the student will normally take two years (or longer if part-time) to complete the degree.

Although the Art Department is responsible for admission decisions for the art history specialization, the History and Art departments jointly supervise thesis advising and approve applications for graduation.

For non-degree students, graduate courses in art education and studio art also are available.

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Faculty Research and Publications

All members of the [graduate faculty](#) participate in the activities of local, national, and international art and historical associations and are active in research and publication. In recent years, faculty members have made important scholarly contributions in the form of books, articles, and catalogs on such diverse topics as African ivories, African perspectives on 15th- and 16th-century art, Buddhist sculpture, Cleveland architecture and the city's struggle for self-identity, Gothic fan-vaulting, Hindu temple art, Jaina manuscript painting, Hindu and Buddhist iconography, Indian mandalas, Tantric art and erotic rituals, navigation and maritime goddesses and serpent deities of Orissa, and a historic perspective on Cleveland's landmark Terminal Tower.

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Career Information

The Art History program prepares students for entry into doctoral programs in art history, for secondary-level teaching in art history and cultural studies, archival management, historical preservation, art gallery and art museum curatorial employment, art consulting, and slide-library work.

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Admission Information

In addition to [College of Graduate Studies](#) requirements for admission, applicants who wish to pursue the art history specialization must have:

1. At least a 3.00 [grade-point](#) average in history/art history courses.
2. An undergraduate major in history/art history or a sufficient number of undergraduate courses in history/art history to indicate probable success in a graduate program. Under special circumstances, an applicant may make up undergraduate deficiencies by enrolling as a non-degree graduate student. For some students, additional courses or study may be required if not completed as an undergraduate.
3. Completed the equivalent of five undergraduate quarters or four semesters of a foreign language, preferably German or French; however, a language of immediate pertinence to the applicant's chosen field of study will be considered. An examination in reading and translation in the language must be taken during the first 12 hours of graduate study.

Results of the Subject Test of the Graduate Record Examination are desired from all applicants. Results of both the General and Subject test of the GRE are required of applicants who do not meet the minimum [grade-point](#) average set for admission to the College of Graduate Studies.

To facilitate the admission process, it is strongly recommended that applicants use the online application system at www.csuohio.edu/admissions/gradForm.html. The processing time for paper application forms is longer.

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Financial Assistance

A number of [assistantships](#) are awarded on a competitive basis to qualified students. [Assistantships](#) provide tuition support and a stipend in exchange for 10 hours of service per week in the research and instructional programs of the faculty. Interested students should apply to the Graduate Advisor in advance of the academic year.

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Research Program

Graduate study enables participation in the research of the [graduate faculty](#), which is sponsored by local, national, and international agencies and is widely published in leading professional journals and books.

Graduate student research is often presented at regional and national conferences.

Graduate students have access to the Ingalls Library of The Cleveland Museum of Art, one of the foremost collections in the nation, and to the considerable collections of the Cleveland Public Library. Excellent interlibrary loan, OCLC facilities, and general computer-research services on campus assure rapid acquisition of additional material. Computer applications to the history of art are encouraged and well supported by the College of Arts and Sciences.

Special exhibits and shows in the Cleveland State University Art Gallery afford graduate students experience in curating and publishing exhibition catalogs.

Additional practical experience and funding is facilitated by internships at the Museum of Art, the Western Reserve Historical Society, and local art galleries.

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Degree Requirements

Upon admission to the program, the student must immediately contact the Graduate Advisor in the Art Department to develop a general plan of study, which is recorded on a program planning form. This form provides the basis for subsequent consultations.

Students may pursue either of two plans for the art history specialization. Plan A requires the writing of a thesis and is intended primarily for the student who plans to study for a Ph.D. in Art History. Plan B is intended primarily for the student seeking only an M.A. degree and requires additional course work in lieu of the thesis. Plan B is designed for breadth and flexibility rather than specialized concentration. Prospective students select a program in consultation with the Graduate Advisor. Students in plans A and B must complete their approved courses with at least a 3.00 [grade-point](#) average, and all students must earn a minimum of 20 hours of credit at the 600 level.

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Plan A (36 hours)

1. 16 hours in 500- to 600-level art history including at least one art seminar ([ART 695](#)) and a maximum of four hours of independent study ([ART 697](#)).
2. 12 hours in 500- to 600-level history courses, including [HIS 601](#) and one reading seminar.
3. Eight hours of thesis ([ART 699](#)).

Students anticipating further study are encouraged to begin acquiring a second foreign language in order to meet the Ph.D. program requirements at other universities.

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Plan B (40 hours)

1. 24 hours in 500- to 600-level art history, including two art seminars ([ART 695](#)) and a maximum of four hours of independent study ([ART 697](#)).
2. 16 hours in 500- to 600-level history courses, including [HIS 601](#), [HIS 695](#), and one reading seminar.

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Exit Requirements

Each candidate, whether pursuing Plan A or B, must prepare a 20-minute presentation as an exit requirement. Candidates also are expected to attend and participate in their colleagues' presentations. These slide lectures should demonstrate an original approach to a well-defined topic developed from one of the student's seminar papers. They afford the candidate the opportunity to refine and distill research, following the guidelines of professional art historical society meetings.

For Plan A candidates, the thesis committee must consist of two faculty advisors from the Art

Department, one from the History Department, and one member external to the degree program. The guidelines for the thesis are decided on by agreement between the student and the committee. The committee notifies the Graduate Advisor when the thesis has been completed successfully.

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History: Specialization in Social Studies

The History Department offers an interdisciplinary program that leads to a Master of Arts degree in History with a specialization in Social Studies. The program is aimed at providing social studies teachers with new perspectives and deeper knowledge of the content areas encompassed under Social Studies (History, Anthropology, Economics, Political Science, Sociology) in order to help teachers be more effective in the classroom.

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Admissions Information

Admission requirements are the same as those for the M.A. in History program.

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Degree Requirements

Students are required to complete a total of 35 credit hours in approved courses with at least a 3.00 grade-point average.

Upon admission, each student must consult with the History Graduate Program Director in order to establish a general plan of study. HIS 697 Independent Study in History can be taken only with the approval of the Graduate Program Director.

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Requirements

1. A minimum of 24 credits in History, which must include:
 - a. HIS 660 Social Studies in Context I (four credits), and
HIS 661 Social Studies in Context II (four credits), and
HIS 570 World History (four credits)
 - b. any 600-level reading seminar (four credits)
 - c. any two 500- or 600-level courses (eight credits)
2. Three credits in Economics (ECN 503 Economic Concepts)
3. Four credits in Political Science.

One of the following:

PSC 517 Political Parties and Elections

PSC 519 Public Opinion

PSC 521 Political Violence

PSC 527 Politics of Peaceful World Change

PSC 530 U.S. National Security Policy

PSC 531 U.S. Foreign Policy

PSC 534 U.S.-Latin American Security Issues

PSC 540 Foundations of Political Thought

PSC 541 Modern Political Thought

PSC 594 Special Topics in Political Science (with permission from the Chair of the Political Science Department).

4. Four credits in Sociology.

Any 600-level seminar (excluding SOC 640, SOC 650, and SOC 651) or any 500-level course

(excluding SOC 555 and independent study courses).

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History Courses (See Addenda)

HIS 500 Local History Seminar (4-0-4). Explores the social, economic, political, and cultural history of Cleveland and northeastern Ohio from 1800 to the present. It uses primary materials to generate student research projects on a variety of selected topics. Specific topics vary from term to term.

HIS 501 American Cultural History, 1865 to the Present (4-0-4). Study of the social and cultural history of the United States, emphasizing the ways in which beliefs, values, and world views of the American people are related to prevailing social conditions.

HIS 502 History of American Political Parties (4-0-4). Survey of the development of the American party system from 1800 to the present. Examines distinctions between party and faction, Federalist party, Jacksonian Democrats, Whigs and Republicans, third parties, party organization at local and national levels, voting behavior, and election strategies.

HIS 503 Recent U.S. Social History (4-0-4). Traces social change in the United States from the Civil War to the present with special emphasis on changing social class formation, family, neighborhood, community, race, ethnicity, gender, and work. Traces major structural changes in society, politics, and economy in relation to social transformations and the impact of technological change, urbanization, and bureaucracy, as well as the field's historiography.

HIS 504 U.S. Urban History (4-0-4). Analysis of American urban development. Focuses on spatial development of American cities and changing internal structure and institutions of cities from the colonial period through the mercantile, industrial, and post-industrial city. Traces the city's impact on migrants and others and their responses. Also considers urban historiography.

HIS 505 Social Thought of African Americans (4-0-4). Historical inquiry into the major social, cultural, and intellectual developments among African Americans, including such movements as antebellum abolitionism, African immigration, cultural and political accommodation, and Pan-Africanism and Negritude as expressed in the writings of major authors.

HIS 506 History of Ohio (4-0-4). The early development of Ohio as a territory and a state. Topics include transportation problems and economic development, economic and social consequences of industrialization and urbanization, and ethnic composition.

HIS 507 History of Cleveland (4-0-4). Origins and early development of Cleveland and the Western Reserve, and the emergence of Cleveland as a major industrial city. Emphasis on social, economic, technological, cultural, and political development, with special attention given to the role of ethnic and minority groups.

HIS 508 20th-Century American Labor History (4-0-4). General survey of American labor history with particular emphasis on the impact that industrialization had on work itself. Topics include the varying strategies adopted by management to control labor, the history of labor unions, and the special role played by African Americans, women, and immigrants within the workforce.

HIS 509 American Immigrant History (4-0-4). A survey of immigration to America from the 1830s to the present. Focuses on the religious, work, political, and cultural life of various immigrant groups, as well as the process of adaptation and Americanization. The rise of anti-immigrant movements and efforts to restrict immigration are also emphasized.

HIS 510 Indians in American History(4-0-4). A study of Native American-White contact since the colonial period, emphasizing differences in cultural outlook, dispossession from Indian lands, changing political status of Native Americans, and the nature of missionary and governmental assimilation efforts. Attention is given to the dynamics of cultural conflict and Indian response to assimilation policies.

HIS 511 Introduction to Public History (4-0-4). An introduction to the applied uses of history in such areas as museums, archives, labor, historical societies, community, corporate, and oral history. Considers ethical and professional issues, grant writing, evaluation of popular and professional history presentations, and careers in public history. Involves an on-site practicum in public history.

HIS 512 17th-Century America (4-0-4). Examination of the conquest, colonization, and settlement of the North American continent, and an investigation of the people who lived in the region from early contacts between European colonists and Native Americans through control of the region from European rivals.

HIS 513 18th-Century America (4-0-4). Study of American Enlightenment, causes of the American Revolution, aspects of the War for Independence, the Confederation, the Constitution of 1787, the Revolutionary Settlement, and the rise of Jacksonian Democracy.

HIS 514 Introduction to American Studies (4-0-4). Scope, theory, and methods of American Studies. American culture seen as a comparative phenomenon. Analysis of the interactions of social, artistic, and political behaviors in the United States. Historical period and thematic focus may vary.

HIS 516 History of the American West (4-0-4). Examines the significance of the Trans-Mississippi West in United States history from various interpretive perspectives. Topics include: 19th-century exploration and settlement; impact of environment on evolution of western economies; race and ethnic relations; gender roles; the cowboy legacy; frontier violence; the West as myth and symbol; federal land and wilderness policies; the urban West; tourism and National Parks.

HIS 517 Civil War and Reconstruction, 1848 to 1877 (4-0-4). Examines the causes, course, and consequences of the American Civil War and Reconstruction. Particular emphasis is given to slavery and sectional differences leading to the conflict; military and political events; the impact of the Civil War and Reconstruction on American society; the emancipation experiences of African Americans; and the struggle to redefine freedom, nationalism, and citizenship during Reconstruction.

HIS 518 History of the Family in America (4-0-4). Survey of family life and family structure from the 17th century to the present, including roles of women and children, sexual attitudes, and ethnic and minority contributions. Research project consists of either a term paper or a reconstruction of the student's family history.

HIS 519 U.S. Tourism, Memory and Identity (4-0-4). Considers the role of tourism in American society and culture from the early 19th to the early 21st century. It emphasizes how historical memory shapes tourist attractions and how tourism shapes local, regional, national, racial, and ethnic identity.

HIS 520 U.S. Foreign Policy since 1900 (4-0-4). U.S. foreign policy from the Spanish-American-Cuban-Filipino War through the Vietnam War. Emphasis on U.S. relations with European and East Asian nations, though all parts of the world are covered. Considerable attention also is paid to the “realist” and “idealist” interpretations of U.S. foreign policy. All students are given an opportunity to conduct an independent research project.

HIS 521 United States, 1901 to 1939 (4-0-4). Study of the rise and fall of the progressive spirit in the United States; the impact of World War I on the world and on the American people; economic, social, political, and literary survey of the jazz era; and the economic consolidation and social fragmentation of the 1920s and the Great Depression.

HIS 523 Recent American History (4-0-4). Study of the interactions among the major social, political, economic, and cultural events in the United States since 1939. Major topics include World War II, the origins and impact of the Cold War, Vietnam, the civil rights movement, and other movements for social change in the 1960s.

HIS 524 Black Is/Black Ain't: Defining Black America (4-0-4). Explores the ways in which Americans of African descent have been defined historically by themselves and by Whites. The social and political consequences of adopting these definitions are also examined. Topics include representations in law and popular/elite culture, racial thought and the rise/fall of slavery/Jim Crow, and self-definitions grounded in, among others, political and class differences.

HIS 525 Black America Since 1945 (4-0-4). Covers the civil rights movement, sit-ins, the development of Black nationalism, the urban condition, and changes in Black political, social, and economic life during the last 45 years.

HIS 526 African American History through Sacred Music (4-0-4). Traces the history of African American sacred music from its African roots, through the 19th-century spiritual to the 20th-century hymns, gospels, and contemporary Christian compositions. This musical heritage is analyzed within the larger context of African American social and cultural history, with an emphasis on understanding African American church culture as a buffer against racial and other forms of discrimination.

HIS 527 American Sexual Politics and Communities (4-0-4). Explores attempts by various groups to (re)define, regulate, and/or form communities around sexuality. The course's central theme differs each year. Topics include gay/lesbian/bisexual histories and sexuality in the U.S.

HIS 528 History of Business (4-0-4). Surveys the evolution of American business and the growth of capitalism in the U.S., focusing on several themes including the evolution of the firm, business-government relations, management-labor relations, business and society interactions, and general developments in economic thought.

HIS 529 Black Resistance in the Age of Jim Crow (4-0-4). African Americans challenged White supremacy long before the emergence of the modern movement for civil rights. This course studies the politics of Black resistance during the era of legal segregation—from *Plessy v. Ferguson* (1896) to *Brown v. Board of Education* (1954). Topics include anti-lynching, the impact of rural-to-urban and southern-to-northern migration, unionization, Garveyism, communism, the roots of Black power, and the ways in which African Americans confronted the rise of a racist commercial culture.

HIS 530 History of Greece (4-0-4). A study of the development of civilization in ancient Greece from prehistoric beginnings until the death of Alexander the Great. Special emphasis is given to the rise of democracy and its expression in Athens during the Age of Pericles. The nature, extent, and interpretation of ancient evidence for historical research receives careful attention.

HIS 531 Rise of Rome (4-0-4). A study of the development of civilization in ancient Italy from prehistoric beginnings until the establishment of the Roman Empire by Augustus. Special emphasis is given to the foundation legends of the city, the civil disorder of the final century of the Republic, and the period of transition from Republic to Empire. The nature, extent, and interpretation of ancient evidence for historical research receives careful attention.

HIS 536 Tudor and Stuart England (4-0-4). The legacy of late-medieval feudal and social disorder, the emergence of a sovereign state, the Reformation, the religious and constitutional settlements, the Wars of the Three Kingdoms, the Restoration, and the Glorious Revolution are studied in the context of social and economic change.

HIS 537 Britain, 1688 to 1832 (4-0-4). The Glorious Revolution, the military-fiscal state, the conquest of empire, the Industrial Revolution, and the age of democratic revolutions are studied in the context of political, social, and economic change.

HIS 539 Great Britain: Empire to Welfare State (4-0-4). History of the British people since 1867, including problems created by total war, dissolution of the empire, the coming of political democracy, the establishment of the Welfare State, industrial decline, and the search for international order.

HIS 540 The Roman Empire (4-0-4). The rise and decline of the Roman Empire from the age of Augustus to the end of the fifth century, including the development of Roman government, culture, and society. Examines the growth of Christianity and the interaction of the later Empire with the “barbarian” nations, and their effects on the transformation of the western Empire into the late antique world and the early Middle Ages.

HIS 541 Early Middle Ages (4-0-4). Political, social, economic, and intellectual life of Europe from the Fall of Rome to A.D. 1000. Emphasis on Germanic invasion, the rise of Christianity, feudalism, and manorialism.

HIS 542 Late Middle Ages (4-0-4). European society and culture from A.D. 1000 to 1450. Particular attention is given to patterns of thought, the founding of universities, and the rise of cities and feudal monarchies.

HIS 543 Social History of the Black Death (4-0-4). Examination of the changes created by the introduction and spread of the bubonic plague in large populations. Begins with an examination of how diseases are socially, culturally, and historically constructed, then charts the impact of the plague in the first three centuries of its spread and analyzes the social history of the period and how responses to the disease intersected with other European-wide developments.

HIS 544 The Renaissance (4-0-4). Examination of the period in its historical settings. Emphasis on Petrarch, Machiavelli, Galileo, and Erasmus through a study of their works. Special concentration on Italy.

HIS 545 Church, State, and Society in Reformation Europe (4-0-4). Examines lay piety and institutions of the Catholic Church during the late Middle Ages, and the rise of Protestant doctrines and faiths in 16th- and 17th-century Europe. Analyzes impacts among various social groups, cultural manifestations of religious upheaval, religious and political ambitions, and current movements of Christian humanism and Catholic and Counter-Reformations. Covers the period from the late 15th century through 1648.

HIS 546 17th- and 18th-Century Europe (4-0-4). Examination of absolutism and the European state system, the social and economic system of preindustrial Europe, and the rise and decline of the principal powers, including Spain, the Low Countries, France, and Prussia.

HIS 549 France and the French Revolution (4-0-4). Introduction to the history of France in the 18th century and the Revolution of 1789. Examines social classes, the economy, intellectual changes, and various interpretations of the French Revolution and the debates surrounding them. Also surveys the Revolutionary and Napoleonic eras and their impact on Europe.

HIS 550 Golden Age Spain (4-0-4). Examines the history of Spain from the late-medieval period through the 17th century from social, cultural, political, economic, and religious perspectives. Addresses key developments in the Iberian Peninsula, including encounters with the Americas, the rise of absolutism, and the Catholic and Counter-Reformations. Evaluates implications of historical interpretations of both Spain's "Golden Age" and its reputed "decline."

HIS 551 Social and Economic History of 19th-Century Europe (4-0-4). A study of economic change and social upheaval precipitated by the French Revolution and the industrialization and urbanization of Europe. Emphasis on social class structure, urban life and problems, workers' and middle class responses to industrialization, and imperialism.

HIS 552 Political History of 19th-Century Europe (4-0-4). Survey of the political and diplomatic problems of post-Napoleonic Europe; the Revolutions of 1848; Napoleon III and the Second Empire; problems of national unification in Germany, Italy, and Austria-Hungary; the Third French Republic; Russia's attempt to modernize; the Turkish Empire and Balkan nationalism; and the coming of World War I.

HIS 553 20th-Century Europe, 1914 to the Present (4-0-4). Lecture and group discussion approach to some of the major cultural, social, political, and economic developments in Europe since 1914; social and cultural impact of two world wars; and totalitarianism and the decline of empire. Emphasis is placed on the Cold War and events since 1945.

HIS 554 European Women's History, 1300 to 1700 (4-0-4). Analysis of a variety of life experiences of European women from 1300 to 1700. Considers methodological issues that shaped recent practice of women's history, and examines the variety of women's roles in late medieval and early modern society, including religion, economy, culture, and politics.

HIS 555 War and Society, 1500 to 1815 (4-0-4). The impact of the military revolution and standing armies on the changing nature of land and naval warfare, studied in the context of the emergence of sovereign dynastic and national states, European expansion overseas, the breakdown of traditional societies, and the emergence of mass societies in the age of democratic revolutions.

HIS 556 History of European Fascism (4-0-4). Examines social, cultural, economic, and racial aspects of radical Right Wing politics which made the fascist movements such pervasive phenomena in Europe between the two world wars. The bulk of the course is devoted to the Nazi and Fascist movements in Germany and Italy and to the development of racial ideology culminating in the Holocaust.

HIS 557 WWI: The Western Front (4-0-4). Focuses on the social history of the Western Front during World War I (especially Belgium, France, and Britain). It aims to go beyond statistics and battle reports and allow students to become immersed in the war experience of the combatants and non-combatants by reading history, novels, poetry, viewing films and images, listening to music, and through class discussion.

HIS 558 Science and Society (4-0-4). Review of the evolution of scientific thought and method. Examines relationships between these developments and other aspects of the developing Western world view, particularly religious and philosophical components, to help students achieve science literacy.

HIS 559 Technology and Society (4-0-4). Review of the role of technology in the cultural evolution of humans and in contemporary society. Develop insight into the role tools played in the evolution of hominids. Students gain an appreciation of the distinction between science and technology.

HIS 560 History of Russia to 1900 (4-0-4). Survey of political, social, economic, and cultural developments in Russia from the ninth century through the 19th century. Topics include the growth of the Russian autocratic state, evolution of the institution of serfdom, the position of the nobility, the emancipation of the serfs, formation of the intelligentsia, and the beginnings of the revolutionary movement.

HIS 561 History of Modern Russia (4-0-4). History of modern Russia and the Soviet Union, including the development of capitalism and industrialization, the revolutions of 1905 and 1917, the formation and evolution of the Soviet Union, Stalinism, the collapse of the Soviet Union, and recent developments.

HIS 562 Modern Eastern Europe (4-0-4). Social, political, and economic history of the peoples of Eastern Europe, excluding the former Soviet Union, from the late 18th century to the present. Topics include nationalism, modernization, cultural diversity, significance in world history, Communism, and Eastern Europe after 1989.

HIS 563 Russian Literature and Society (4-0-4) Provides the opportunity to read some major works of Russian literature, with exploration of their social context. Focuses on the interaction between Russian history, society, and culture. Major themes include Russian society as depicted in literature (from the 1860s to the 1950s); the function of literature in Russian society; the authors, their roles, and experiences; and Russia and Russian literature before and after the revolution of 1917.

HIS 565 Comparative Slavery (4-0-4). Examines the slave system which developed in the U.S. within the context of the Americas with particular attention to Brazil. Uses a comparative approach to enrich understanding of self and society. Topics include slave trade; the nature of the slave community and family life; the relationship of slavery to race, religion, and human and physical geography; and escape and other forms of rebellion.

HIS 566 Colonial Latin America (4-0-4). Examination of Latin American societies from pre-Columbian civilization to the wars for independence in the 19th century. Topics include the development of plural societies, economic organization, and culture.

HIS 567 Latin America since 1825 (4-0-4). Development of Latin American republics with emphasis on the 20th century. Topics include political and cultural nationalism, polarized societies, dependent economic systems, mechanisms of change, and relations with the United States.

HIS 569 Comparative Emancipation (4-0-4). Examines the process of emancipation in the Western Hemisphere and the experiences of former slaves during the transition to free labor. Focus is on the struggle of ex-slaves and ex-slaveholders to define freedom and on the changing ideas about race, racism, and class. The United States emphasis within the broader hemispheric context compares such topics as self-emancipation, labor policies, and politics in the years after slavery.

HIS 570 World History (4-0-4). A general introduction to the study of global history focusing on the evolution of factors, such as immigration, disease, nationalism, religion, and economic and political systems, which have served to connect societies. The geographic and/or thematic focus varies from term to term. Primarily aimed at students interested in social studies teaching.

HIS 571 History of Japan (4-0-4). A survey of political, economic, social, cultural, religious, and intellectual life in Japan from the third century to the present day. Emphasis on the origin and development of traditional Japanese civilization before the impact of the modern West and the subsequent Japanese quest for international acceptance.

HIS 572 Early Modern Japan (4-0-4). A consideration of historical change during the Tokugawa Period (1600-1868) in Japanese history, an era considered both "late traditional" and "early modern." Examines the processes of urbanization and the growth of a monetary economy, changes in social organization, major cultural innovations, intellectual movements, and the emergence of a sense of national identity.

HIS 573 Contemporary Japan in Historical Perspective (4-0-4). Assesses aspects of contemporary Japanese civilization and culture from the perspective of historical influences on the philosophies, institutions, and values of modern society and culture.

HIS 574 Revolutionary Movements in Modern China (4-0-4). Chronologically arranged consideration of topics in the political, economic, social, cultural, religious, and intellectual

life of China since the late 19th century; designed to provide an understanding of contemporary China in historical perspective.

HIS 575 Pre-Colonial Africa to 1880 (4-0-4). Survey of sub-Saharan African civilizations and the origins of the African Diaspora. Geographic coverage includes the Nile Valley, eastern Africa and the Horn of Africa, southern and West Africa, and the central African rain forest. Includes historical analysis of Nubia, Ethiopia, the Swahili, Zimbabwe, Ghana, Mali, Songhay, Ashanti, Benin, and the Kongo. The Atlantic slave trade is positioned within historical traditions of African and global history.

HIS 576 Modern Africa since 1880 (4-0-4). Survey of sub-Saharan African civilizations from the demise of the Atlantic slave trade through the periods of European conquest and colonial rule, the nationalist struggle for independence, and post-colonial African states. Includes African perspectives on colonialism and neocolonialism, including social, economic, political, and cultural initiatives toward independence, modernity, and an emerging role in global affairs.

HIS 577 History of Islamic Civilizations (4-0-4). A survey of the main themes of the development of religious, cultural, social, and political patterns in central Islamic areas from the 600s to the present. Particular emphasis on the development and spread of Islam, interactions with the West, and problems of modernization.

HIS 582 Origins and Consequences of Total War (4-0-4). Examination of the diplomatic history of the period from 1870 to 1945 within the larger framework of European international relations surrounding the First and Second World Wars. Special consideration is devoted to the role of domestic pressures in the formulation of foreign policy and the historical debates about the origins of both world wars.

HIS 590 Introduction to Social Studies (4-0-4). Introduces students to content issues in teaching social studies by exploring the theme of “migrations,” culminating in discussion of the “Great Migration” of African Americans to Cleveland. The course does not examine issues of pedagogy, but of content.

HIS 593 Special Topics in History (4-0-4). Analysis of crucial problems in history. Topic varies with instructor. May be taken for credit more than once, but no single topic may be repeated. Topics appear in the [Course Schedule](#).

HIS 595 Everyday Life in Early America, 1607 to 1865 (4-0-4). An exploration of how Americans lived and thought from the earliest settlements through the Civil War. Emphasis varies from year to year, but considers such topics as religion, reform movements, transportation, education, architecture, western expansion, foods, fads, and fashions.

HIS 601 Introduction to Graduate Study in History (4-0-4). Advanced study of history as a discipline and profession. Topics include philosophies of history, problems of historical study, and the techniques of historical research and writing. It is recommended that this course be completed prior to enrollment in a research seminar. Core course. Offered every fall semester.

HIS 611 Seminar in American Colonial History (4-0-4). Problems and interpretations in 17th- and 18th-century American history. Readings in secondary literature and an introduction to reference aids and sources in the field. Not offered every year.

HIS 613 Seminar in United States History, 1800 to 1877 (4-0-4). Advanced study of selected historical problems and interpretations. Introduction to reference aids and sources. Emphasis on the Jacksonian period or the Civil War. Not offered every year.

HIS 615 Seminar in United States History, 1897 to the Present (4-0-4). Advanced study of selected historical problems and interpretations. Introduction to reference aids and sources. Emphasis varies depending on instructor. Not offered every year.

HIS 621 Seminar in Black History (4-0-4). Examination of selected problems in African American history. Introduction to sources, reference aids, and major library holdings on

African Americans in the United States. Not offered every year.

HIS 640 Issues in the History of Atlantic Societies (4-0-4). Advanced study in the history of Atlantic societies with analytical discussion of major interpretations and problems. Readings in secondary literature and introduction to reference aids and sources. Topic varies with instructor. Not offered every year.

HIS 644 Seminar in Medieval European History (4-0-4). Selected readings in the history of medieval Europe, with analytical discussion of major interpretations and problems. Introduction to the secondary literature and major sources. Topic varies from term to term. Not offered every year.

HIS 645 Seminar in Early Modern European History (4-0-4). Critical examination and discussion of problems and interpretations of British or European social, economic, and cultural history from the 16th century through the 18th century. Topic varies with instructor. Not offered every year.

HIS 647 Seminar in 19th- and 20th-Century European History (4-0-4). Selected topics and problems of the period. Introduction to reference aids and printed sources. Topic varies with instructor. Not offered every year.

HIS 660 Social Studies in Context I (4-0-4). Specially tailored for teachers or students interested in teaching. It serves as an introduction to the intellectual framework that undergirds the social studies by focusing on the relationship of the specific disciplinary bases of this interdisciplinary approach. The focus is on specific content areas such as migration or the city within a multidisciplinary context. These themes are approached from a historical perspective with anthropology, economics, geography, political science, and sociology woven in as appropriate. Students are expected to develop a research project tailored to their interests and needs as teachers.

HIS 661 Social Studies in Context II (4-0-4). Prerequisite: HIS 660. The primary objective is to explore the relationship of the social studies disciplines as a theoretical issue; in terms of specific content-based case studies; and as applied in specific research projects. At the heart of this course is the completion of the research project developed in HIS 660 demonstrating mastery of two or more social studies approaches and an awareness of two or more disciplines. Also explores the use of the Internet as a research tool and particularly as a means of disseminating the results of student research.

HIS 693 Seminar in Special Topics (variable credit). Advanced study of selected historical problems and interpretations. Topic varies with instructor. Topics appear in the [Course Schedule](#).

HIS 695 Research Seminar in American, European, or Social History (4-0-4). Directed research on selected areas of American and European history. Emphasis varies depending on instructor. Core course. Offered every spring.

HIS 697 Independent Study in History (one to four credits). Prerequisites: Permission of instructor and Program Director. Individual readings and research on topics that are not a part of current course offerings.

HIS 699 Thesis (one to four credits). May be repeated for a total of 10 credits.

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Studio Art Courses

ART 505 Museum Studies (2-6-4). Prerequisite: Special permission of the instructor. A practical guide for the planning and design of exhibitions as an introduction to the field of Museum Studies.

[ART 511 Drawing: Advanced Studio \(2-6-4\)](#). Prerequisite: Special permission of the instructor. Advanced investigation into experimental approaches to drawing. May be repeated for up to 12 credits.

[ART 521 Painting: Advanced Studio \(2-6-4\)](#). Prerequisite: Special permission of the instructor. Advanced investigation into more experimental approaches to painting. May be repeated for up to 12 credits.

[ART 526 Sculpture: Advanced Studio \(2-6-4\)](#). Prerequisite: Special permission of the instructor. Development of individual approaches to three-dimensional form. May be repeated for up to 12 credits. Materials fee.

[ART 531 Printmaking: Advanced Studio \(2-6-4\)](#). Prerequisite: Special permission of the instructor. Advanced individualized studio projects utilizing printmaking processes. May be repeated for up to 12 credits. Materials fee.

[ART 532 Photography: Advanced Studio \(2-6-4\)](#). Prerequisite: Special permission of the instructor. Advanced study of photographic techniques and concepts with emphasis on the development of personal style. May be repeated for up to 12 credits. Materials fee.

[ART 544 Computer Graphics I: Advanced Studio \(2-6-4\)](#). Prerequisite: Special permission of the instructor. Advanced study of raster-based imagery (Photoshop) or graphic and text imagery for publication (Quark Xpress or PageMaker). May be repeated for up to 12 credits. Materials fee.

[ART 545 Computer Graphics II: Advanced Studio \(2-6-4\)](#). Prerequisite: Special permission of the instructor. Advanced study of vector-based imagery (Illustrator) or multimedia production. May be repeated for up to 12 credits. Materials fee.

[ART 546 Ceramics: Advanced Studio \(2-6-4\)](#). Prerequisite: Special permission of the instructor. Continuation of individual development of personal style. May be repeated for up to 12 credits. Materials fee.

[ART 693 Special Topic in Studio Art \(0-2-1, 1-3-2, 1-5-3, or 2-6-4\)](#). Prerequisite: Special permission of the instructor. Intensive study of a subject or topic to be announced in advance. May be repeated for credit. May have materials fee.

[ART 696 Independent Studies in Advanced Studio Art and Design \(0-2-1, 1-3-2, 1-5-3, or 2-6-4\)](#). Prerequisites: Written permission of instructor and art advisor. Studio projects in advanced work. Sections are: (1) computer graphics, (2) ceramics, (3) drawing, (4) painting, (5) photography, (6) printmaking, (7) sculpture, (8) other—four credits, or (9) other—two credits.

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Art History Courses

[ART 556 Gothic Art \(4-0-4\)](#). The history of the art and crafts of Western Europe in the later Middle Ages.

[ART 563 The Early Renaissance in Italy \(4-0-4\)](#). The history of art and architecture in Italy from the rise of the city-state to the voyages of Christopher Columbus, from Giotto to Leonardo da Vinci.

[ART 564 The High Renaissance and Mannerism in Italy \(4-0-4\)](#). The history of art and architecture in Italy during the time of Leonardo da Vinci, Michelangelo, Raphael, and their followers.

[ART 565 The Renaissance in Northern Europe \(4-0-4\)](#). The history of the arts in the court of the dukes of Flanders and of the kings of France, from Pucelle to Bruegel.

ART 570 American Visual Culture (4-0-4). American visual culture from the late 19th century through the 20th century. Focuses on the interrelationship between traditional art media and visual forms of American popular and mass culture, considered within their appropriate social and political contexts.

ART 571 Art in the 19th Century (4-0-4). A survey of art and culture focusing on romanticism and landscape painting; the deterioration of the distinction between “high” and “low” art forms; the transformation of the modern metropolis; and women, the “Orient,” and the “primitive” within art and society.

ART 572 Art in the 20th Century (4-0-4). The survey of art focusing on several nations and themes, including the concept of the avant-garde; the place of the gendered body; the development of abstraction; censorship from fascism to the present; the role of photography and mechanization; and postmodernism.

ART 573 On the Edge: Art since 1968 (4-0-4). International **directions** in visual culture since 1968 with emphasis on the development of new media such as performance, conceptualism, video, film, and installation. Exhibition and the increasing importance of race, class, gender, and sexual identity within global culture are discussed.

ART 574 American Architecture (4-0-4). A historical analysis of the built environment from the 17th century to the present. Various styles and types of buildings are related to time and place, defining and identifying central characteristics, social function, cultural expression, technology, and changes in architectural practice.

ART 575 Cities and Planning (4-0-4). Humankind’s communal environment since ancient times; social, symbolic, functional, and biotechnical domains as generators of architecture and urban planning; value systems in environmental change; policies, plans, and design proposals as the record of the humanized environment.

ART 576 Architectural History: Great Monuments of Western Architecture in the Urban Context (4-0-4). An inquiry into the forms and meaning of architecture from antiquity to the present.

ART 583 Indian Art (4-0-4). The history of Indian art from the Neolithic period through the late medieval period.

ART 584 Buddhist Sculpture (4-0-4). An in-depth study of Buddhist sculpture in India and its spread to Tibet, China, and Japan with special emphasis on iconography and stylistic development.

ART 585 The Hindu Temple (4-0-4). A historical study of the development of the Hindu temple beginning with simple flat-roofed structures and culminating with later multi-structured temple complexes. Architectural form and iconographical program are equally stressed, as are Indo-Aryan and Dravidian styles.

ART 586 Regional Art in Africa (4-0-4). Examines the historical arts of a selected region of Africa from the archaeological past to contemporary movements. May be repeated for credit when the treated region changes. Discussed regions include Western Sudan, the Guinea Coast, Central, South, and East Africa.

ART 588 African American Art (4-0-4). The history of African American art and architecture in the diaspora from colonial times to the present.

ART 590 Art History Internship (one to eight credits). Approved internship with an external museum or other appropriate program. Grading is on an S/F basis.

ART 594 Special Topics in Art History (two or four credits). Intensive study of a relatively narrow subject or topic to be announced in advance. May be repeated for up to 12 credits.

ART 675 Cleveland: Form and Development of an Urban Environment (4-0-4). Workshop examining aspects of visual communication relative to the city.

[ART 695 Art Seminar \(4-0-4\)](#). Prerequisite: Permission of instructor. Close examination of a topic through research and discussion, with emphasis on the social context of art. Topic is selected jointly by instructor and students. May be repeated for credit. Normally offered every semester.

[ART 697 Independent Reading and Research: Art History \(one to four credits\)](#).

Prerequisites: Written permission of instructor and Graduate Advisor. Study of a topic of special interest to the particular student. Subject and plan of study to be decided jointly by student and instructor. May be repeated for credit.

[ART 699 Thesis \(one to four credits\)](#). Directed research under supervision, culminating in the writing of a thesis.

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Art Education Courses

[ART 541 Valuing Processes in the Visual Arts \(4-0-4\)](#). An exploration of art criticism and aesthetics as part of a comprehensive art education program with practical applications in pre-K-12 settings.

[ART 593 Special Topics in Art Education \(4-0-4 or 2-6-4\)](#). Intensive study of a relatively narrow subject or topic to be announced in advance. May be repeated for credit.

[ART 596 Independent Reading and Research: Art Education \(two or four credit hours\)](#). Prerequisite: Written permission of instructor. Study of an art education topic of special interest to the particular student. Subject and plan of study to be designed jointly by student and instructor. May be repeated for credit.

[ART 641 Art in Social and Vocational Contexts \(4-0-4\)](#). An introduction to philosophical and historical issues in art education with an emphasis on alternative venues for teaching art to varied populations.

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Political Science Courses (See Addenda)

[PSC 517 Political Parties and Elections \(4-0-4\)](#). Importance of political parties and elections in American political history and development of the party system; role of public opinion, parties, and interest groups in democratic politics; effects of culture, political socialization, campaign politics, and issues on voting behavior; politics of social movements, the formation of political coalitions, and partisan realignment; party activity at state and local levels.

[PSC 519 Public Opinion \(4-0-4\)](#). Role of public opinion in democratic theory; methods and problems of polling and survey research; nature, formation, distribution, and learning of political attitudes; issues of democratic stability; group opinions, voting behavior, and elite behavior, and their impact on the policy-making process, public polity, and the quality of American democracy.

[PSC 521 Political Violence \(4-0-4\)](#). Background conditions leading to political violence and revolution. Ideology, class, ethnicity; the state's response to civil violence; strategies to prevent or engender violence; the destruction and reconstruction of consensus in a political system; the effectiveness of violence as a method of political influence; and the basis of political order also are explored.

[PSC 527 Politics of Peaceful World Change \(4-0-4\)](#). Possibilities for peaceful and equitable solutions to conflicts created by inequalities in economic development, global

resource scarcity, the population explosion, and threats of ecological disaster; mechanisms for resolving these conflicts, including alternatives to the present international system; international law and organization. Emphasizes skills such as policy analysis, oral advocacy, nonviolent communications, negotiation, and arbitration.

PSC 530 U.S. National Security Policy (4-0-4). An examination of issues affecting U.S. national security and the processes through which policy is made. Includes an examination of U.S. strategy, civil-military relations, regional strategic appraisals, the roles of the Department of Defense and the intelligence community, the revolution in military affairs, peacekeeping, and the challenges posed by failed states, rogue states, and non-national adversaries, such as insurgents, narcotraffickers, and terrorists.

PSC 531 U.S. Foreign Policy (4-0-4). Major issues of American involvement in world politics; analysis of contemporary events and current international tensions; the politics of rivalry and alliance; the evolution of defense strategy; military interventions; diplomatic negotiations; the role of ideology, trade, and aid; U.S. foreign-policy decision making; theories of bureaucracy; interagency and interbranch relations; and role perceptions.

PSC 534 U.S.-Latin American Security Issues (4-0-4). An examination of U.S.-Latin American relations, focusing on security matters. Covers the historical legacy of U.S. intervention, narcotrafficking, insurgency, democratization, civil-military relations, human rights, political instability, and U.S. aid. Includes case studies of several countries experiencing major security problems.

PSC 540 Foundations of Political Thought (4-0-4). An examination of Plato, Aristotle, and other Greek-Roman political thought; main currents of medieval political theory, including Augustine.

PSC 541 Modern Political Thought (4-0-4). Political thought from the Renaissance to the present, focusing on liberalism and its critics, from Rousseau to postmodernism. Emphasis on figures such as Machiavelli, Locke, Rousseau, Marx, Foucault, and feminism as well as other theorists.

PSC 592 Special Topics in Political Science (2-0-2). Important political issues of contemporary significance with implications for future change. May include foreign or domestic issues. Topics to be announced in advance. May be repeated with departmental permission.

PSC 594 Special Topics in Political Science (4-0-4). Important political issues with contemporary significance and potential consequences for future change. May include foreign or domestic issues. Topics to announced in advance. May be repeated with departmental permission.

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Master of Occupational Therapy

Department of Health Sciences

Health Sciences 101
 (216) 687-3567
www.csuohio.edu/healthsci/ot.html

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The Faculty

Professors:

Bette Bonder
 Steve Slane, Interim Chair, Health Sciences Department

Associate Professors:

John Bazyk
 Susan Bazyk
 Beth Ekelman
 Glenn Goodman, Director, Occupational Therapy Program

Assistant Professor:

James A. Landis

Adjunct Assistant Professor:

Susan Wayne, Fieldwork Coordinator

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Introduction

Occupational therapy, which began in 1917, is a health field that focuses on individuals' ability to do their everyday occupations in self-care, work, and leisure (such as dressing, homemaking, working, and recreating). Its goal is to help people achieve their own unique, desired lifestyles. It requires getting to know individuals personally, understanding their goals, and identifying creative ways to allow them to reach their desired levels of independence and productivity. This work is highly personal and creative. In addition to working directly with clients, occupational therapists often consult with others important to the client about adapting the client's lifestyle or environment. Occupational therapists also design programs for themselves or others to implement, they speak on behalf of clients and their families, and they participate in research.

The Occupational Therapy Program is accredited by the [Accreditation Council for Occupational Therapy Education](#), 4720 Montgomery Lane, Bethesda, MD 20824-1220; (301) 652-2682. Students must complete a minimum of 79 credits including 24 weeks (940 hours) of full-time fieldwork in order to be eligible to sit for the national certification examination and to apply for state licensure. The fieldwork must be completed within 24 months after completion of the credits of academic course work. The certifying body for occupational therapists is the National Board for Certification in Occupational Therapy (NBCOT). Note: A felony conviction may affect a graduate's ability to sit for the NBCOT certification examination or to

attain state licensure.

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Faculty Research

The Occupational Therapy Program faculty have an outstanding record of research and publications. Areas of expertise within the core faculty include outcome studies, assistive technology, gerontology, quality of life, legal issues in occupational therapy, occupational therapy education, psychopathology and function, international health care issues, work-related injuries, feeding interventions, parent-professional collaboration, fine motor function and emergent literacy, and development of occupational therapy assessments.

The program has collaborative arrangements with many health care and service organizations that enhance research and learning opportunities. Some of these include Benjamin Rose, The Cleveland Clinic Foundation, Cleveland Public Schools, the Cuyahoga County Board of Mental Retardation and Developmental Disabilities, the Hispanic Senior Center, the City Mission, Metro Health Medical Center, St. Vincent Charity Hospital, and University Hospitals of Cleveland.

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Financial Assistance

A limited number of [graduate assistantships](#) (minimum of nine credit hours {per semester}) are available to full-time students. [Assistantships](#) may cover tuition and a stipend. Assistants may be involved in departmental projects, or work with individual faculty on specific research and teaching endeavors. Contact the Health Sciences Department at (216) 687-3567 or via e-mail at healthsci@csuohio.edu for more details.

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Admission Information [\(See Addenda - March 15, 2005\)](#)

Admission to the program is limited to 30 students. A rolling admissions process begins August 1 until March 15. Candidates who meet all admission requirements are accepted on a first-come, first-served basis.

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Admission Criteria

Students must have:

1. A bachelor's degree from an accredited institution.
2. An overall [grade-point](#) average of 3.00 or a score at the 50th percentile or above in each area of the [GRE](#).
3. A minimum [GPA](#) of 2.80 in the most recent 48 semester credit hours of course work, and a minimum [GPA](#) of 2.80 in natural science courses, with at least two of the science prereq-uisites taken prior to application.

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Procedures for Application [\(See Addenda - March 15, 2005\)](#)

Students must meet all [College of Graduate Studies](#) admission requirements and submit to the

Graduate Admissions Office an Application for Graduate Admission, the \$55 application fee, and all admission materials (official transcripts, test scores submitted by the testing agency directly to the University, letters of recommendation, department application packet, etc.).

In addition, applicants for the M.O.T. program must:

1. Submit a completed M.O.T. program application (available from the Health Sciences Department) with a \$55 non-refundable application fee to the Graduate Admissions Office.
2. Complete the Graduate Record Exam (GRE) if the overall undergraduate grade-point average is less than 3.00.
3. Demonstrate English-language proficiency if English is not the applicant's native language. A TOEFL score of 550 or above or a Michigan Language Test score of at least 85 is required.
4. Complete all prerequisite courses with a grade of C or better by the end of spring semester of the year of application.

Students who are enrolled in the Pre-therapy Track of the B.S.H.S. degree at Cleveland State University may apply for provisional acceptance into the Master of Occupational Therapy program at any time. The student must complete an intent-to-enroll form that identifies the anticipated year of enrollment into the M.O.T. program. The form also lists the application procedures and academic standards that must be maintained to be eligible for admission into the M.O.T. program. Students must meet with a department advisor to initiate this process.

To facilitate the admission process, it is strongly recommended that applicants use the online application system at www.csuohio.edu/admissions/gradForm.html. The processing time for paper application forms is longer.

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Required Prerequisites

1. Pathology (HSC 381 if taken at Cleveland State) Introduction to medical diagnosis and treatment covering basic concepts and nomenclature of pathology, major diseases of body systems, epidemiology, biopsychosocial concepts, pharmacology, infectious disease, cellular injury, tissue repair, neoplasia, genetic disorders, musculoskeletal disorders, nervous system disorders, and psychiatric disorders.
2. Physiology with lab (HSC 422 or BIO 422/423 if taken at Cleveland State) Must be a 300-level or above course. Human or vertebrate physiology is recommended.
3. Human Anatomy with lab (HSC 475 if taken at Cleveland State) Must be a 300-level or above course. Human cadaver dissection or prosection is recommended.
4. Neurosciences with lab (HSC 476 if taken at Cleveland State) Study of structure and function of human central and peripheral nervous systems including vascular components and special senses.
5. Lifespan (PSY 223 if taken at Cleveland State) Examination of human development from infancy to old age preferred.
6. Abnormal Psychology (PSY 345 if taken at Cleveland State) Survey of major psychological disorders and their classification, etiology, and management.
7. Social Science Statistics (PSY 311 if taken at Cleveland State) Content should include measures of central tendency, correlations, t-tests, analysis of variance, nonparametric statistics, application of descriptive and inferential statistics to analysis and interpretation of data in the social sciences, and hypothesis testing.

8. Medical Terminology (HSC 203 if taken at Cleveland State) Evidence of completion of medical terminology course or self-study.

Although not mandatory, it is strongly recommended that applicants volunteer and/or work under the direct supervision of an occupational therapist in at least two areas of practice.

Requests for applications and advising appointments (also recommended) can be made with the Health Sciences Department by calling (216) 687-3567.

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Program of Study (See Addenda - March 15, 2005)

The Master of Occupational Therapy curriculum consists of 79 to 81 credits, including 51 credits in the core area, 22 credits of fieldwork, and six to eight credits of electives. A capstone research project is required as part of the core curriculum. The two-year program begins summer semester. A part-time option is available for students who wish to complete the program in three or four years.

Students are required to meet with an advisor and select two elective courses as part of the required M.O.T. academic course work. These courses are meant to enhance the students' skills in practice administration and/or teaching.

The courses are offered in the following sequence:

Summer Year I

HSC 506 Medical Conditions and Occupational Function

HSC 516 Occupational Therapy Foundations

HSC 589 Occupational Therapy Research I

Fall Year I

HSC 517 Occupational Therapy Theory and Process

HSC 518 Occupational Development

HSC 527 Neuromusculoskeletal Evaluation and Intervention

HSC 528 Psychosocial Evaluation and Intervention

Spring Year I

HSC 529 Sensory and Cognitive Evaluation and Intervention

HSC 535 Occupation and Participation I

HSC 536 Occupation and Participation II

Summer Year II

HSC 537 Occupation and Participation III

HSC 558 Occupational Therapy Practicum I

HSC 560 Interdisciplinary Team Development, or elective

HSC 569 Occupational Environments

Fall Year II

HSC 559 Occupational Therapy Practicum II

HSC 579 Occupational Therapy Administration and Management

HSC 591 Occupational Therapy Research II

Spring Year II

HSC 595 Level II Fieldwork I

HSC 596 Level II Fieldwork II

Courses

Note: All courses in the M.O.T. program are open only to students who are in the M.O.T. program. Part-time students or non-degree students must receive permission of the instructor to be admitted into any course in the M.O.T. program.

HSC 506 Medical Conditions and Occupational Function (3-0-3). Discusses the etiology, incidence and prevalence, signs and symptoms, types, associated disorders, course, and prognosis, diagnosis, and management of a sample of major medical conditions. Their impact on occupational function is explored. The client-centered nature of occupational therapy is emphasized. The phenomenological perspective of occupational function is explored.

HSC 516 Occupational Therapy Foundations (4-0-4). An introductory course on the history, philosophy, core concepts, language, reasoning, basic tools, and practice arenas of occupational therapy. Articulates the nature of humans as occupational beings and the central role of occupation in the person's life. Emphasizes activity analysis as a core tool of occupational therapy. Standards of practice and the roles of the occupational therapist in a variety of service-delivery models are reviewed. Defines and describes evidence-based practice. Clinical reasoning is introduced and applied through case examples.

HSC 517 Occupational Therapy Theory and Process (3-1-4). Reviews current occupational therapy models of practice and applies them to the occupational therapy process. Evaluation, intervention planning, intervention, transition services, discontinuation of services, activity analysis, and documentation in occupational therapy are addressed. A service-learning component is included.

HSC 518 Occupational Development (4-0-4). Development across the lifespan, from conception to very old age, is explored. Content focuses on the development of occupation (activities of daily living, play/leisure, and work) and body structure and function (sensorimotor, cognitive, and psychosocial) throughout a person's life.

HSC 527 Neuromusculoskeletal Evaluation and Intervention (3-2-4). Examines the neuromusculoskeletal body structures and functions of a person at the knowledge, comprehension, and application levels. Introduces, applies, and analyzes theoretical frames of reference used by occupational therapists to address the evaluation and intervention of the neuromusculoskeletal areas of function. Lays the foundation for use of this information at higher levels of all three learning domains and in a more integrated way in later courses. Emphasis on documenting efficacy of intervention.

HSC 528 Psychosocial Evaluation and Intervention (2-2-3). Examines the psychosocial body structures and functions of a person, including group process, at the knowledge, comprehension, and application levels. Introduces, applies, and analyzes theoretical frames of reference used by occupational therapists to address evaluation and intervention of the psychosocial areas of function. Lays a foundation for use of this information at higher levels of all three learning domains and in a more integrated way in later courses.

HSC 529 Sensory and Cognitive Evaluation and Intervention (2-2-3). Examines the sensory and cognitive integration body structures and functions of a person at the knowledge,

comprehension, and application levels. Introduces, applies, and analyzes theoretical frames of reference used by occupational therapists to address evaluation and intervention of the sensory and cognitive integration areas of function. Lays a foundation for use of these functions at higher levels of all three learning domains and in a more integrated way in later courses. Documentation of efficacy of occupational therapy intervention is emphasized

HSC 535 Occupation and Participation I (2-4-4). Provides a preliminary (pre-entry-level) working knowledge of the concepts and principles of occupational therapy, using simulated and actual case materials. Focuses on occupational therapy evaluation and intervention for maintaining or enhancing the participation of children and adolescents in their occupations. A service-learning component is included.

HSC 536 Occupation and Participation II (3-2-4). Provides a preliminary (pre-entry-level) working knowledge of the concepts and principles of occupational therapy, using simulated and actual case materials. Focuses on occupational therapy evaluation and intervention for maintaining or enhancing the occupational performance of individuals in their early and middle adulthood. Documentation of efficacy of intervention is emphasized.

HSC 537 Occupation and Participation III (2-2-3). Provides a preliminary (pre-entry-level) working knowledge of the concepts and principles of occupational therapy, using simulated and actual case materials. Focuses on occupational therapy evaluation and intervention for maintaining or enhancing the participation of older adults in their occupations. Emphasis on documenting efficacy of intervention.

HSC 558 Occupational Therapy Practicum I (3-0-3). A level I fieldwork experience in a medical setting. Students exhibit pre-entry-level skills and clinical reasoning necessary to evaluate sensorimotor, cognitive, and psychosocial factors influencing a person's occupation in work, play/leisure, and self-care; collaborate with the person, the team, and the family to develop and implement intervention strategies that promote occupational functioning; and understand and articulate occupational therapy's unique role within that setting. Provides an opportunity to gain experiential knowledge of and apply the theoretical approaches studied in the curriculum.

HSC 559 Occupational Therapy Practicum II (3-0-3). A level I fieldwork experience in a community setting. Students exhibit pre-entry-level skills and clinical reasoning necessary to evaluate sensorimotor, cognitive, and psychosocial factors influencing a person's occupation in work, play/leisure, and self-care; collaborate with the person, the team, and the family to develop and implement intervention strategies that promote occupational functioning; and understand and articulate occupational therapy's unique role within that setting. Provides an opportunity to gain experiential knowledge of and to apply the theoretical approaches studied in the curriculum.

HSC 560 Interdisciplinary Team Development (3-0-3). Introduces the occupational and physical therapy student to contemporary health issues, such as reimbursement, ethics, and outcome-based rehabilitation, that influence the health care team during provision of therapeutic services. The multiple roles of the therapist as well as the various health-service-delivery models are explored.

HSC 569 Occupational Environments (2-2-3). Reviews the symbiotic interaction between an individual and the environment. Effects of architectural barriers, assistive technology, legislation, interpersonal and social issues, psychological aspects of a disability, and cultural differences are studied.

HSC 579 Occupational Therapy Administration and Management (3-0-3). Reviews entry-level management competencies needed to plan, organize, staff, coordinate, and control occupational therapy programs in a variety of systems. The roles of the occupational therapist are explored, as are the social, economic, political, and geographic contexts within which occupational therapy services are provided. Addresses regulation and credentialing, resolution of ethical issues, career development, and marketing occupational therapy.

HSC 589 Occupational Therapy Research I (3-0-3). Prepares students to participate as

researchers in the field of occupational therapy. Proposal writing, development of research questions, research designs, ethics in research, literature review, data collection and analysis, preparation of professional presentations, and writing for publication are included. Prepares students for independent or group projects required for completion of the M.O.T. degree.

HSC 591 Occupational Therapy Research II (3-0-3). Facilitates implementation of independent or group research. Students meet with their advisors and implement a research project proposed and approved in HSC 589. Students submit a manuscript describing their study and participate in a research symposium in which they present their projects and field questions from faculty, students, and community participants.

HSC 595 Occupational Therapy Level II Fieldwork I (eight credits). The level II fieldwork courses are the capstones of the curriculum. Under the direct supervision of an Occupational Therapist Registered, the student acquires and implements the skills, roles, attitudes, and reasoning of an entry-level generalist therapist. This course is coordinated with HSC 596 Occupational Therapy Level II Fieldwork II to include a variety of ages, practice settings, and disabilities.

HSC 596 Occupational Therapy Level II Fieldwork II (eight credits). The level II fieldwork courses are the capstones of the curriculum. Under the direct supervision of an Occupational Therapist Registered, the student acquires and implements the skills, roles, attitudes, and reasoning of an entry-level generalist therapist. This course is coordinated with HSC 595 Occupational Therapy Level II Fieldwork I to include a variety of ages, practice settings, and disabilities.

HSC 597 Occupational Therapy Level II Elective Fieldwork (four to eight credits). The level II fieldwork courses are the capstone courses of the curriculum. A supervised elective course. The student acquires and implements the skills, roles, attitudes, and reasoning of an entry-level therapist in a specialized area.

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Graduate Catalog 2004-2006

Master of Business Administration (See Addenda)

College of Business Administration

Ahuja Hall 219
(216) 687-3730

[//www.csuohio.edu/cba/academic/graduate/mba.html](http://www.csuohio.edu/cba/academic/graduate/mba.html)

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The Faculty

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Introduction

The Master of Business Administration program is designed for students with undergraduate degrees in either business or non-business areas. The overall purpose of the program is to prepare individuals for careers in management. More specifically, its aim is to provide an opportunity for men and women to develop knowledge, abilities, attitudes, technical skills, and understanding that will constitute a foundation for their growth into competent and responsible managers and leaders.

- Program of Study
- Courses
 - Health Care Administration
 - Master of Business Administration
 - Accounting
 - Computer and Information Science
 - Economics
 - Finance
 - General Administration
 - Management and Labor Relations
 - Marketing
 - Operations Management and Business Statistics (OMS)

The program is designed to meet the needs of both full-time and part-time students. All required courses are offered both during the day and in the evening. M.B.A. programs are also offered at various off-campus locations in the Cleveland Metropolitan area.

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Accreditation (See Addenda - May 01, 2005)

The graduate business programs of the James J. Nance College of Business Administration are accredited by AACSB International, the Association to Advance Collegiate Schools of Business. In addition to the business accreditation, the curricula of the Accounting Department have accounting accreditation from the AACSB. The accounting programs at Cleveland State were the first in the State of Ohio to receive this accreditation. The Health Care Administration specialization is accredited by the Accrediting Commission on Education for Health Services Administration (ACEHSA).

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Financial Assistance

The College of Business Administration has a limited number of graduate tuition and graduate assistantships available each year. Tuition grant awards generally are reserved for first-year M. B.A. students and require a minimum nine-credit-hour course load, and 10 hours of service per week to the College. Graduate assistantships generally are reserved for second-year M.B.A. students and require a minimum nine credit-hour course load, and 20 hours of service per week. Application forms may be obtained in the Graduate Business Programs Office (Ahuja Hall 219).

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Admission Information

Admission to the Master of Business Administration program is based on the following criteria:

1. The applicant must earn a minimum of 950 points based on the formula: 200 times the

overall undergraduate **grade-point** average plus the Graduate Management Admission Test (**GMAT**) score; or at least 1,000 points based on the formula: 200 times the upper-division **grade-point** average plus the **GMAT** score.

2.Students scoring below the 20th percentile on the verbal section of the **GMAT** are required to take the following **remedial** courses in business communication: **GAD 502** (16th through 19th percentile); or **GAD 501** and **GAD 502** (below the 16th percentile). Students scoring below the 25th percentile on the quantitative section of the **GMAT** are required to take a two-credit course, **OMS 500**. The **GMAT** may be waived for applicants holding Ph.D. or M.D. degrees. Medical doctors must be licensed to practice in the United States in order to be considered for a waiver. Registration information for the **GMAT** is available in the Office of **Graduate Admissions, Rhodes Tower West, Room 204**. For **GMAT** test information, visit the web site at www.gmat.com.A score from the Graduate Record Examination (**GRE**) cannot be substituted for the **GMAT**.

3.An official transcript from each college and university previously attended must be sent to the Office of **Graduate Admissions**.

The Master's Programs Committee of the College of Business Administration meets periodically to review admission standards. Please call the GraduateBusiness Advising Office at (216) 687-3730 to obtain additional information.

To facilitate the admission process, it is strongly recommended that applicants use the online application system at www.csuohio.edu/admissions/gradForm.html. The processing time for paper application forms is longer.

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Non-Degree Students

Non-degree students and those awaiting admission to graduate programs in the College of Business Administration are allowed to take a maximum of 12 credit hours from the following list of courses:

ACT 501 Financial Accounting

ECN 503 Economic Concepts

FIN 501 Financial Management

GAD 501 Business English

GAD 502 Intermediate Business English

GAD 515 Communications for Managers

MBA 500 Environment of Business

MLR 501 Management and Organizational Behavior

MKT 501 Marketing Theory and Practice

OMS 500 Mathematical Models for Business

OMS 503 Statistical Methods for Business Decisions

OMS 511 Operations Management

A student must be admitted as a Regular graduate student in the M.B.A. program before being allowed to register for more than 12 graduate credit hours in the College of Business Administration.

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Degree Requirements

The Master of Business Administration degree is awarded on the basis of successful completion of a minimum of 31 credit hours of upper-level M.B.A. courses (Level III). Preparation for taking Level III courses is through completion or waiver of all Level I and Level II course requirements. Students normally are not allowed to register for Level III courses until all Level I and Level II courses have either been taken or waived. **Petitions** must be approved by the M.B.A. Program Advisor.

Courses in the three levels are as follows:

[Level I: Basic Skill Proficiency](#)

Courses in Level I are specially designed to bring skills up to acceptable levels for doing graduate-level work. These courses are waivable; please consult with the program advisor. Familiarity with Microsoft Windows, Microsoft Office, and the Internet is required.

GAD 501 Business English (four credits)

GAD 502 Intermediate Business English (three credits)

OMS 500 Mathematical Models for Business (two credits)

OMS 503 Statistical Methods for Business Decisions (three credits)

Level II: Basic Business Knowledge

Courses in Level II are designed to provide knowledge of the basic business disciplines to prepare students for the upper-level M.B.A. courses. These courses are waivable on the basis of recent undergraduate business course work.

ACT 501 Financial Accounting (three credits)

ECN 503 Economic Concepts (three credits)

FIN 501 Financial Management (three credits)

GAD 515 Communications for Managers (three credits)

MBA 500 Environment of Business (three credits)

MLR 501 Management and Organizational Behavior (three credits)

MKT 501 Marketing Theory and Practice (three credits)

OMS 511 Operations Management (three credits)

Level III: Upper-level M.B.A. Courses

These three groups of required courses are the heart of the M.B.A. curriculum:

Group A: Functional Core

ACT 600 Managerial Accounting (two credits)

FIN 601 Financial Policies (three credits)

MLR 601 Human Resources Management and Labor Relations (three credits)

MKT 601 Marketing Management (three credits)

Group B: Integrative Core

MBA 600 Team Dynamics (one credit)

MBA 602 International Business (three credits)

MBA 603 Management of Innovation, Technology, and Quality (three credits)

MBA 660 Integrative Business Strategy (four credits)

Group C: Electives

Three graduate business electives (at least two at the 600 level) must be taken from any functional business area. Courses listed in Levels I and II of the M.B.A. program cannot be taken as electives. Each department in the College of Business Administration offers courses in faculty-supervised independent study or internship. Only one of the two courses may be counted as an elective toward the M.B.A. degree. Please see the business course description section of this Catalog for each department.

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Additional Requirements

The required credit hours of course work must be completed with the following conditions:

- All credit hours of work must be business courses, taken either at Cleveland State University or transferred from another business college (see Transfer of Credit below).
- One of the three electives may be a 500-level course. See the individual course descriptions under each department for a list of available courses.
- A minimum grade-point average of 3.00 in total work attempted while registered in the M.B.

A. program is required. College of Graduate Studies regulations regarding grades below B are applicable.

- Level III courses must be completed within six years prior to the proposed graduation date.

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Transfer of Credit

Transfer credit will be granted for no more than nine semester hours of Level III courses, provided that the courses were completed for graduate credit at an institution accredited by the AACSB. Graduate courses may not be transferred from other colleges of Cleveland State University, except as allowed by the J.D./M.B.A. program.

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Specialization

Within the M.B.A. curriculum, specialization can be earned by taking three elective courses (no more than one at the 500 level) within any of the following business disciplines: Accounting, Finance, Health Care Administration, Information Systems, Management and Labor Relations, Marketing, and Operations Management and Business Statistics.

Specialization also can be earned in Business Economics. Refer to the Master of Arts in Economics program description in this Catalog for a list of courses and their descriptions.

The College of Business Administration also offers the following master's degree programs in specialized areas:

- Master of Accountancy
- Master of Computer and Information Science
- Master of Labor Relations and Human Resources
- Master of Public Health

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One-year Accelerated M.B.A. Program

The Accelerated M.B.A. program enables an employed person to complete the M.B.A. degree within a calendar year by attending classes on Saturdays and alternating Friday evenings. To qualify for admission, applicants must have a total of at least 1,000 points based on the formula: 200 times the overall undergraduate grade-point average plus the GMAT score. Applicants to the A.M.B.A. program must be able to waive all Level I and Level II course requirements. This program is ideal for students with a recent bachelor's degree in business, or those candidates who have completed the necessary first-year M.B.A. prerequisites. Participants can begin the program at one of two start dates each year, and progress as a cohort group to the completion of their degrees. A.M.B.A. programs begin in early January and end in November or begin in early August and end in June of the following year. Class sizes are limited. Application deadline for the January program is November 1, and for the August program, June 1. Contact the A.M.B.A. office at (216) 687-6925 for a program brochure.

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Executive M.B.A. Program (Admission Requirements for GMAT have changed - See Addenda)

The Executive M.B.A. Program is intended for individuals currently employed in positions of responsibility. The program covers fundamental as well as advanced concepts, theories, and practices in business administration with an emphasis on critical analysis and strategic decision-making skills. To qualify for admission to the E.M.B.A. program, the applicant must have a minimum of five years of professional experience and earn at least 950 points based on the formula: 200 times the overall undergraduate grade-point average plus the GMAT score. A new group starts each August with an off-campus orientation and residency week. Classes meet on a three-Saturday, one-Friday cycle during the academic year. The program includes an international study tour, special-topic seminars and workshops, and group projects. For more information, visit the E.M.B.A. web site at [//www.csuohio.edu/cba/academic/graduate/executive.html](http://www.csuohio.edu/cba/academic/graduate/executive.html) or call the E.M.B.A. Program office at (216) 687-6925.

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Off-campus M.B.A. Programs

The College of Business Administration offers the full M.B.A. program at various locations in

the Greater Cleveland area. The M.B.A. degree can be completed in 27 months or 15 months for students with a recent B.B.A. degree. Students take two classes, two evenings per week from 5:30-9:30 p.m. Current locations include Westlake, North Olmsted, and Mayfield Heights. Call the Off-campus Programs office, (216) 687-6925, for more information.

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J.D./M.B.A. Joint Degree Program

The joint design of the curriculum leading to the degrees of Juris Doctor and Master of Business Administration permits the student to complete both degrees over a maximum of four years instead of the five years that normally would be required to complete the two degrees separately.

Applicants to the Joint Degree Program must apply for admission to both the [College of Graduate Studies](#) and the College of Law concurrently and follow the normal procedures of the respective colleges. Application for admission must be specifically for the Joint Degree Program. The student will not be allowed under any circumstances to take more than eight years to complete the combined programs.

All requirements for both programs must be completed before degrees will be awarded. If a student elects to receive one degree before completing the requirements for the other degree, forfeiture of some transfer credit will result, and the student will no longer be in the Joint Degree Program.

A student in the Joint Degree Program must begin the first year of work in the College of Law. The student's second year of study consists of the first year's curriculum of the Master of Business Administration program.

The Joint Degree Program requires a total of four academic years. The Juris Doctor requirements are fulfilled by the completion of 80 semester credit hours of work in the College of Law, including all required courses, as well as 10 credit hours transferred from Master of Business Administration courses. The M.B.A. requirements are fulfilled by the completion of 22 credit hours of required Level III M.B.A. courses, as well as nine credit hours transferred from law courses. In order to ensure that the degree requirements of both programs are fully maintained, while at the same time permitting the saving of a full academic year, students who pursue the combined programs are not permitted to take elective courses outside of either the College of Law or the M.B.A. program for credit toward either degree.

For information about the J.D./M.B.A. program, call the M.B.A. Programs Advising Office at (216) 687-3730 or visit the web site at [//www.csuohio.edu/cba/academic/graduate/mba.html](http://www.csuohio.edu/cba/academic/graduate/mba.html).

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M.S.N./M.B.A. Joint Degree Program

The M.S.N./M.B.A. program is designed for students with undergraduate degrees in nursing (B.S.N.) who wish to complete advanced study in nursing and also prepare for careers in management and leadership.

The Joint Degree Program permits the student to complete both degrees within approximately three years because the M.B.A. program accepts nine hours of core M.S.N. courses as elective credit and the M.S.N. program accepts 10 hours of core M.B.A. courses as elective credit.

Applicants for the M.S.N./M.B.A. program must meet the admission requirements for both the College of Business Administration and the School of Nursing at Cleveland State University. For information about the Joint M.S.N./M.B.A. program, please see the program description in the Master of Science in Nursing section of this Catalog or visit the web site at [//www.csuohio.edu/cba/academic/graduate/nursing.html](http://www.csuohio.edu/cba/academic/graduate/nursing.html). Information about the M.B.A. program also can be obtained from the M.B.A. Programs Advising Office (Ahuja Hall 219) or by calling (216) 687-3730.

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Health Care Administration Programs (HCAP)

Cleveland State University's Health Care Administration Programs provide academic training, internships, and career guidance for two master's degree programs:

- The M.B.A. in Health Care Administration (M.B.A./HCA) is granted by the College of Business Administration
- The Master of Public Health (M.P.H.) is offered in partnership with five other universities in Northeast Ohio

E-mail inquiries about the graduate programs and requests for application materials may be directed to hcaprograms@csuohio.edu for the M.B.A./HCA and mph@csuohio.edu for the M.P.H. Prospective students are strongly encouraged to consult the following sources for the

most current information:

- The HCA Program office at (216) 687-4711
- The HCA web page at [//www.csuohio.edu/cba/hca/hca.html](http://www.csuohio.edu/cba/hca/hca.html)
- The M.P.H. web page at www.NEOUCOM.edu/MPH

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The M.B.A. in Health Care Administration

The Faculty

Professors:

Charles H. Brooks, Emeritus
Lawrence R. Walker, Emeritus

Associate Professor:

Brenda Stevenson Marshall, Director, M.B.A. in Health Care Administration;
Director, Master of Public Health Programs

Assistant Professors:

Georgia Anetzberger
Doohee Lee

Executive-in-Residence:

Thomas LaMotte

Participating Faculty:

Stanley Kasmarcak
Vincent Kaval
Louis Thomas Masterson
Thomas J. Onusko

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Introduction

Cleveland State University's Health Care Administration concentration within the Master of Business Administration program is dually accredited by AACSB International, the Association to Advance Collegiate Schools of Business, and the Accrediting Commission on Education for Health Services Administration (ACEHSA). It is one of three ACEHSA-accredited programs in the State of Ohio, the only ACEHSA-accredited program in Northeast

Ohio, and the only dually accredited program in the state. The program is designed to provide graduate education for individuals interested in preparing for or furthering their careers in the management and administration of all health care delivery entities, such as integrated systems, hospitals, and managed care organizations. The program also provides training that leads to careers in consulting, health planning, policy analysis, and long-term-care administration.

The Health Care Administration concentration provides a comprehensive academic background in management theory and practice, together with the knowledge and skills associated with the field of health care administration, planning, and policy analysis. Through this concentration, students develop an awareness of the interaction and interdependence of management, finance, economics, medicine, politics, and the social sciences. The program also provides a unique opportunity to gain valuable practical experience through professional site visits, shadowing, and an intensive administrative work experience, referred to as the internship. Both full-time and part-time students are able to complete the program through courses offered during the day and in the evening. Full-time students usually are able to complete the program in two or two-and-one-half years, while part-time students have up to six years to earn the degree.

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Faculty Research and Publications

The Health Care Administration faculty are actively engaged in theoretical and applied health services research and are involved in health management organizations, locally and nationally. A recent study (a first nationally) evaluated the health-seeking behavior and health practices of public housing residents in the city of Cleveland. Faculty members regularly contribute to scholarly journals, including Medical Care, Healthcare Management Review, and the Journal of Healthcare Management.

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Admission Information

In addition to an earned baccalaureate degree, applicants for admission to the Health Care Administration specialization must meet the following requirements:

1. A total of at least 1,050 points based on the following formula: 200 times the overall undergraduate grade-point average plus the Graduate Management Admission Test (GMAT)

score; or at least 1,100 points based on the formula: 200 times the upper-division undergraduate **grade-point** average plus the **GMAT** score. The Graduate Record Examination (**GRE**) cannot be substituted for the **GMAT**.

2. The **GMAT** may be waived for those applicants with an earned U.S. doctorate (Ph.D. or M.D.). International applicants with an earned doctorate (Ph.D. or M.D.) must present proof of U.S. equivalency. Medical doctors must be licensed to practice in the United States in order to be considered for this waiver.

Applicants scoring at or below the 25th percentile on the **GMAT** are required to take Basic Skill Proficiency **remedial** work (see Degree Requirements for the M.B.A.).

Applicants who fail to achieve admission to the HCA specialization but who have a total score of 950 points may be admitted to the regular M.B.A. program and take a series of courses (usually four) designated by the HCA director. Upon successful completion (a grade of B or better) of these courses, the student may be admitted to the HCA program, with the director's approval.

To facilitate the admission process, it is strongly recommended that applicants use the online application system at www.csuohio.edu/admissions/gradForm.html. The processing time for paper **application forms** is longer.

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Financial Assistance

Financial aid is available through the University. HCAP has a limited number of graduate assistantships available. Graduate assistantships also are available in other departments of the College of Business Administration, and in other departments throughout the University. Students may apply for an assistantship by checking the appropriate box on the graduate application and by submitting a completed assistantship application form to the Graduate Business Advising Office. Complete support is available through the United States Navy Medical Scholars' Program for qualifying individuals.

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Curriculum

The curriculum consists of five levels of courses: basic skill proficiency in written and oral communication and in quantitative analysis (Level I); basic business knowledge (Level II); advanced business knowledge (Level III); health care administration core concepts (Level IV), and advanced health care administration knowledge (Level V). Students also must complete at least 10 professional site visits, a shadowing assignment, and an internship.

A student with appropriate undergraduate preparation and/or **GMAT** scores above the 25th percentile may have several or all of the Level I and Level II courses waived. A maximum of 18 credit hours may be waived.

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Program of Study

Level I: Basic Skill Proficiency

Familiarity with Microsoft Windows, Microsoft Office, and the Internet is required.

(five credits)

GAD 515 Communications for Managers (3-0-3)

OMS 500 Mathematical Models for Business (2-0-2)

Level II: Basic Business Knowledge

(12 credits)

ACT 501 Financial Accounting (3-0-3)

FIN 501 Financial Management (3-0-3)

MLR 501 Management and Organizational Behavior (3-0-3)

MKT 501 Marketing Theory and Practice (3-0-3)

Level III: Functional Business Core

(nine credits)

ACT 600 Managerial Accounting (2-0-2)

MBA 600 Team Dynamics (1-0-1)

MLR 601 Human Resources Management and Labor Relations (3-0-3)

MKT 601 Marketing Management (3-0-3)

Level IV: Health Care Administration Core

(12 credits)

HCA 510 Administrative Uses of Epidemiology (3-0-3)

HCA 515 Medical Care Organization (3-0-3)

HCA 516 Social Environment of Health Care (3-0-3)

HCA 555 Analysis of Health Care Markets (3-0-3)

Level V: Advanced Health Care Administration Training

(21 credits)

HCA 601 Health Care Financial Management (3-0-3)

HCA 615 Quality of Care (3-0-3)

HCA 625 Health Care Informatics for Managers (3-0-3)

HCA 640 Health Care Law (3-0-3)

HCA 650 Long-term Care (3-0-3) (the long-term care option only)

HCA 660 Integrative Business Strategy for Health Care Administrators(4-0-4)

HCA 690 Administrative Internship (five credits)

Learning by Experience — The Administrative Capstone Series: Internship, Professional Site Visit, and Shadowing

Health care administration programs that are accredited by ACEHSA strongly believe that an administrative internship is an important component of graduate education. Even those students with considerable experience in health care administration will benefit from a well-planned and supervised internship. Indeed, many students report that the opportunity to integrate course work with experience was the high point of their graduate training in health administration.

The Administrative Internship ([HCA 690](#)) is required of all M.B.A./HCA students. The internship is defined as a planned and supervised learning experience gained through first-hand observations and operational responsibilities in a health service organization. It is expected that a minimum of 360 hours will be devoted to the internship. This time may be scheduled, with prior approval of the executive-in-residence, at any time after the completion of formal academic training. Each student in the internship is supervised by the executive-in-residence and an on-site preceptor with whom he or she maintains a liaison during the internship. The internship may be implemented either on a full-time or part-time basis.

The Professional Site Visit Experience is required of all M.B.A./HCA students and involves on-site and on-campus experiences with senior management teams from a variety of health care entities throughout the students' tenure in the program. Two of the professional site visits are directed (mandatory). One of the directed visits is a shadowing experience, while the other is individually tailored to the student's career path. A minimum of 10 Professional Site Visits is required for graduation. One hour of academic credit will be given upon completion of the Professional Site Visits when the student registers for [HCA 690](#) Administrative Internship. If M.B.A./HCA students elect to attend these site visits, they also receive an additional hour of credit when they register for [HCA 685](#).

Shadowing a health provider or other health professional is a proven way to learn more about career options and to confirm the choice of a career path. Shadowing consists of at least eight hours of contact with a person and/or an organization. These experiences are designed to broaden the opportunities for students to obtain in-depth knowledge of certain health-related professions, programs, and organizations. Shadowing may take two forms: Clinical (a direct care provider) or Non-clinical (an administrator such as a chief financial officer or company vice president).

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Courses

Health Care Administration

HCA 500 Tools for Health Care Managers (3-0-3)

HCA 510 Administrative Uses of Epidemiology (3-0-3)

HCA 515 Medical Care Organization (3-0-3)

HCA 516 Social Environment of Health Care (3-0-3)

HCA 520 Behavior of Health Care Organizations (3-0-3)

HCA 525 Information Systems in Health Care (2-0-2)

HCA 555 Analysis of Health Care Markets (3-0-3)

HCA 601 Health Care Financial Management (3-0-3)

HCA 615 Quality of Care (3-0-3)

HCA 625 Health Care Informatics for Managers (3-0-3)

HCA 640 Health Care Law (3-0-3)

HCA 645 Decision Analysis (3-0-3)

HCA 650 Long-term Care (3-0-3)

HCA 660 Integrative Business Strategy for Health Care Administrators (4-0-4)

HCA 661 Managed Care Arrangements (3-0-3)

HCA 680 Current Issues in Health Care Seminar (3-0-3)

HCA 685 Health Care Internship (three credits) for M.P.A./HCA students

HCA 686 Health Care Internship (one credit) for M.P.A./HCA students

HCA 690 Administrative Internship (five credits) for M.B.A./HCA students

[HCA 691](#) Administrative Internship/Research Project (one credit)for M.B.A./HCA students

[HCA 695](#) Research Seminar (three credits) for M.P.A./HCA students

[HCA 696](#) Research Seminar Continuation (one credit) for M.P.A./HCA students

[HCA 698](#) Independent Study in Health Care Administration (one to four credits)

[HCA 699](#) Independent Study in Health Care Administration (one to four credits)

See the College of Business Course Descriptions section of this Catalog for details on HCA courses.

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Master of Business Administration

The program leading to the Master of Business Administration degree includes courses from all of the departments of the James J. Nance College of Business Administration as well as courses from the Department of Economics. Questions regarding the program or the courses should be directed to the Graduate Business Programs Office.

See the College of Business Course Descriptions section of this Catalog for details on M.B.A.-numbered courses.

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Accounting

Professors:

Richard A. Epaves, Emeritus
Jayne Fuglister
Lal C. Jagetia, Emeritus
Elise G. Jancura, Emerita
Lawrence A. Kreiser, Chair
Bruce McClain
David Meeting
Heidi Meier
Charles Nagy, Emeritus

Associate Professors:

Byron Baird, Emeritus
Theresa Johnson Holt
Eric Obersteiner, Emeritus
Sidney Paul, Emeritus
Peter Poznanski
Etmun Rozen

Abba V. Spero

Assistant Professor:

Scott Yetmar

Note: The following courses in Accounting are offered for graduate credit to students in the Master of Business Administration degree program.

ACT 501 Financial Accounting (3-0-3)(cannot be used for elective credit)

ACT 553 Information Systems Auditing (3-0-3)

ACT 555 Internal Auditing (3-0-3)

ACT 560 International Accounting (3-0-3)

ACT 562 Tax II (3-0-3)

ACT 584 Governmental and Institutional Accounting (3-0-3)

ACT 600 Managerial Accounting (2-0-2)

ACT 611 Financial Accounting: Resources (3-0-3)

ACT 612 Financial Accounting: Equities (3-0-3)

ACT 613 Legal and Ethical Environment of Accountancy (3-0-3)

ACT 621 Federal Income Taxation (3-0-3)

ACT 622 Attest Function (3-0-3)

ACT 631 Selected Topics in Accounting (3-0-3)

ACT 632 Auditing Standards and Techniques (3-0-3)

ACT 633 Cost Accounting Theory and Analysis (3-0-3)

ACT 634 Accounting Concepts and Principles (3-0-3)

ACT 636 Federal Income Taxation of Corporations and Shareholders (3-0-3)

ACT 637 Taxation of Partnerships (3-0-3)

ACT 638 Tax Research and Planning (3-0-3)

ACT 639 Accounting Policy (3-0-3)

ACT 641 Estate and Gift Taxation (3-0-3)

ACT 642 Tax Practice and Procedure (3-0-3)

ACT 643 Corporate Taxation II (3-0-3)

ACT 644 Estate Planning (3-0-3)

ACT 645 Taxation of International Transactions (3-0-3)

ACT 648 State and Local Taxation (3-0-3)

ACT 649 Tax Accounting (3-0-3)

ACT 653 Advanced Information Systems Auditing (3-0-3)

ACT 688 Accounting Systems (3-0-3)

ACT 690 Professional Accounting Internship (one to four credits)

ACT 696 Current Problems in Accounting (one to three credits)

ACT 698 Independent Study (3-0-3)

See the College of Business Course Descriptions section of this Catalog for details on ACT courses.

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Computer and Information Science

Professors:

Alan C. Benander
Barbara A. Benander
James N. Hanson, Emeritus
Thomas S. Heines, Emeritus
Paul J. Jalics
Santosh K. Misra
Toshinori Munakata
James D. Schoeffler, Emeritus
Allan D. Waren, Emeritus

Associate Professors:

Timothy Arndt
Ben A. Blake
Adam M.A. Fadlalla
Donald G. Golden, Chair
Chien-Hua (Mike) Lin
Victor M. Matos
David R. McIntyre
Howard Paul
Michael A. Pechura
Janche Sang

Assistant Professors:

Iftikhar Sikder
Nilmini Wickramasinghe

Term Assistant Professor:

Jackie Woldering

Term Instructors:

Stephen J. Adams
David J. Antolovich
Dennis Smolinski

Note: The following courses in Information Systems are offered for graduate credit to students in the Master of Business Administration degree program.

IST 600 Fundamentals of System Development (4-0-4)

IST 601 IT for Competitive Advantage (3-0-3)

IST 603 Systems Analysis Methods (4-0-4)

IST 604 Design and Implementation of DBMS (4-0-4)

IST 606 Management of Business Networks (3-2-4)

IST 608 Business Database Systems (3-0-3)

IST 609 Business Systems Analysis and Design (3-0-3)

IST 610 Object-oriented Programming for Information Systems (4-0-4)

IST 615 Decision Support and Expert Systems (3-0-3)

IST 641 Electronic Commerce (3-0-3)

IST 642 Web Site Design and Development (3-0-3)

IST 690 Professional Internship (0-0-1)

IST 693 Special Topics in Information Systems (variable credit)

IST 698 Independent Study (one to four credits)

For other electives, see the Master of Computer and Information Science section in this Catalog.

See the College of Business Course Descriptions section of this Catalog for details on CIS and IST courses.

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Economics

Note: The following course in Economics is offered for graduate credit only to students in the Master of Business Administration degree program. For a description of this and other courses in Economics, see the Master of Arts in Economics section of this Catalog.

ECN 503 Economic Concepts (3-0-3) (cannot be used for elective credit)

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Finance

Professors:

Chenchuramaiah T. Bathala
Michael T. Bond
Ravi R. Kamath
Alan K. Reichert
James R. Webb

Associate Professors:

Kenneth A. Borokhovich
John A. Domonkos, Emeritus
F.C. Neil Myer
Charles T. Rini, Emeritus
Jandhyala L. Sharma

Note: The following courses in Finance are offered for graduate credit to students in the Master of Business Administration degree program.

FIN 501 Financial Management (3-0-3) (cannot be used for elective credit)

FIN 601 Financial Policies (3-0-3)

FIN 603/703 Capital Budgeting Decisions (4-0-4)

FIN 604/704 Management of Financial Institutions (4-0-4)

FIN 605/705 Financial Markets (4-0-4)

FIN 606/706 Investment Analysis (4-0-4)

FIN 607/707 Portfolio Theory and Management (4-0-4)

FIN 608/708 Risk Management (4-0-4)

FIN 610/710 Real Estate Finance (4-0-4)

FIN 612/712 Real Estate Investment (4-0-4)

FIN 615/715 Derivative Securities (4-0-4)

FIN 621/721 International Financial Management (4-0-4)

FIN 690 Professional Finance Internship (one to four credits)

FIN 696 Current Problems in Finance (one to four credits)

FIN 698 Independent Study (one to four credits)

See the College of Business Course Descriptions section of this Catalog for details on FIN courses.

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General Administration

Professor:

Margaret H. Bahniuk, Emerita

Associate Professors:

Kenneth R. Mayer

Marion S. Webb

GAD 501 Business English (4-0-4)*

GAD 502 Intermediate Business English (3-0-3)*

GAD 515 Communications for Managers (3-0-3)*

GAD 696 Current Problems in General Administration (one to four credits)

*Cannot be used for elective credit.

See the College of Business Course Descriptions section of this Catalog for details on GAD courses.

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Management and Labor Relations

Professors:

Charles H. Brooks, Emeritus
Tim R.V. Davis
Kenneth J. Dunegan
Stuart Klein, Emeritus
Jan P. Muczyk, Emeritus
Nels E. Nelson
Lawrence R. Walker, Emeritus

Yoash Weiner,

Associate Professors:

Mary Wilson Hrivnak
Harry J. Martin
Brenda Stevenson Marshall
Jeffrey C. Susbauer, Emeritus, Chair

Assistant Professors:

Georgia Anetzberger
William H. Bommer
George Buckingham
Sung Min Kim
Doohee Lee
Bryan J. Pesta

Note: The following courses in Management and Labor Relations are offered for graduate credit to students in the Master of Business Administration degree program and in the M.L.R. H.R. program.

MLR 501 Management and Organizational Behavior (3-0-3)(cannot be used for elective credit)

MLR 504 Organizational Theory and Design (3-0-3)

MLR 511 Labor History (3-0-3)

MLR 521 Comparative Labor Systems (3-0-3)

MLR 522 Labor Law (3-0-3)

MLR 523 Labor Relations in Public Employment (3-0-3)

- MLR 531 Employment Practices Law (3-0-3)
- MLR 543 Entrepreneurship (3-0-3)
- MLR 547 Cross-functional Management (4-0-4)
- MLR 555 Labor-Management Cooperative Practices (3-0-3)
- MLR 577 Managerial Skill Development (3-0-3)
- MLR 587 International Management (3-0-3)
- MLR 601/701 Human Resources Management and Labor Relations (3-0-3)
- MLR 602/702 Advanced Wage and Employment Theory (3-0-3)
- MLR 604/704 Interpersonal Relations and Group Dynamics (3-0-3)
- MLR 605/705 Organizational Development (3-0-3)
- MLR 606/706 Research and Development Management (3-0-3)
- MLR 607/707 Total Quality Management/Continuous Quality Improvement (4-0-4)
- MLR 609/709 Individual Differences: Their Assessment and Managerial Implications (3-0-3)
- MLR 611 Team Problem-Solving Process (2-0-2)
- MLR 621/721 Multinational Management (3-0-3)
- MLR 640/740 Performance Appraisal, Compensation, and Benefits (3-0-3)
- MLR 641/741 Employment Planning, Personnel Selection, and Training (3-0-3)
- MLR 645/745 Information Systems in Human Resource Management (4-0-4)
- MLR 649/749 Small Business and the Law (3-0-3)
- MLR 651/751 Collective Bargaining (3-0-3)

MLR 686/786 Current Problems in Management and Labor Relations (3-0-3)

MLR 690 Professional Internship (one to three credits)

MLR 696/796 Alternative Dispute Resolution (3-0-3)

MLR 698 Independent Study (one to four credits)

See the College of Business Course Descriptions section of this Catalog for details on MLR courses.

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Marketing

Professors:

Bob D. Cutler
Andrew C. Gross
Robert F. Hartley, Emeritus
Rajshekhar G. Javalgi
W. Benoy Joseph
William J. Lundstrom
Edward G. Thomas
Thomas W. Whipple

Associate Professors:

Amit K. Ghosh
Rama K. Jayanti
S.R. Rao
Ivan R. Vernon

Assistant Professor:

Ashutosh Dixit

MKT 501 Marketing Theory and Practice (3-0-3) (cannot be used for elective credit)

MKT 511 Retail Management (4-0-4)

MKT 550 Professional Selling and Sales Management (4-0-4)

MKT 552 Business-to-Business Marketing (4-0-4)

MKT 554 Internet Marketing (4-0-4)

MKT 556 Data Mining Applications in Marketing (4-0-4)

MKT 601 Marketing Management (3-0-3)

MKT 602/702 Marketing Research (4-0-4)

MKT 603/703 Buyer Behavior (4-0-4)

MKT 604/704 Strategic and Tactical Marketing (4-0-4)

MKT 605/705 Services Marketing (4-0-4)

MKT 606/706 Advertising and Promotion Management (4-0-4)

MKT 607/707 Product Management (4-0-4)

MKT 608/708 Global Marketing (4-0-4)

MKT 640 Field Experience Abroad (4-0-4)

MKT 690 Professional Internship (two to four credits)

MKT 696 Current Problems in Marketing (one to four credits)

MKT 698 Independent Study (one to four credits)

See the College of Business Course Descriptions section of this Catalog for details on MKT courses.

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[Operations Management and Business Statistics \(OMS\)](#)

Professors:

Injazz Chen
Chia-Shin Chung

James O. Flynn, Chair
Walter O. Rom

Associate Professors:

Ronald L. Coccari, Emeritus
Stanley R. Schultz, Emeritus
Oya Icmeli-Tukel

Assistant Professors:

Kenneth Paetsch (Term)
Michael D. Polomsky (Term)
Antonis Printezis (Visiting)
Susan Slotnick

OMS 500 Mathematical Models for Business (2-0-2)*

OMS 503 Statistical Methods for Business Decisions (3-0-3)*

OMS 511 Operations Management (3-0-3)*

OMS 513 Production Planning and Control (3-0-3)

OMS 515 Case Studies in Operations Management (4-0-4)

OMS 517 Just-In-Time Manufacturing (3-0-3)

OMS 519 Manufacturing Systems and Technologies (3-0-3)

OMS 531 Sampling and Experimental Design (4-0-4)

OMS 545 Quality Control and Management (4-0-4)

OMS 548 Queuing and Simulation (4-0-4)

OMS 601/701 Business Decision Methods (3-0-3)

OMS 611/711 Forecasting (3-0-3)

OMS 621/721 Service Operations Management (3-0-3)

OMS 622/722 Project Management (3-0-3)

OMS 623/723 Materials and Supply Chain Management (4-0-4)

OMS 624/724 Global Operations Management (3-0-3)

OMS 625/725 Global Operations Management Field Study (0-4-2)

OMS 633/733 Multivariate Statistical Methods (3-0-3)

OMS 640 ISO 9000 and Quality Audit (3-2-4)

OMS 645 Statistical Quality Control and Improvement (3-0-3)

OMS 690 Professional Internship (one to four credits)

OMS 696 Current Problems (one to four credits)

OMS 698 Independent Study (one to four credits)

*Cannot be used for elective credit.

See the [College of Business Course Descriptions](#) section of this Catalog for details on OMS courses.

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This page last modified July 2005



College of Graduate Studies

Program Listings

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 - College of Business Administration
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Graduate Catalog 2004-2006

Doctor of Business Administration (See Addenda - June 30, 2005)

College of Business Administration

Ahuja Hall 420
(216) 687-6952

<http://www.csuohio.edu/cba/academic/doctoral/doctoral.html>

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The Faculty

See faculty listed in the departmental entries of the Master of Business Administration program description.

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Introduction

The objective of the Doctor of Business Administration (D.B.A.) program is to develop within each candidate an expertise in a functional area of business administration so that he or she may advance business theory and practice and enhance the contributions that business can make to the larger community.

The D.B.A. degree prepares the student for a rewarding academic career in teaching and research at the college or university level. Alternatively, the program offers advanced training in a variety of business areas that should significantly enhance the student's business career development. Regardless of the career path selected, the D.B.A. program provides students with an intellectually challenging and rewarding experience.

The D.B.A. program is designed to provide an academically rigorous experience to a diverse population of traditional and non-traditional students. The D.B.A. degree can be pursued on either a part-time or full-time basis. To provide flexibility and to meet the needs of part-time students, course work is offered through evening and weekend classes. A limited number of research or teaching assistantships provides financial support for full-time graduate students. Students with assistantships take nine to 12 credit hours of course work, and are expected to devote 20 hours per week of teaching or research assistance per semester to the College of Business Administration.

Students must choose a major area of specialization and take additional course work in complementary fields. The D.B.A. degree is currently offered with the following majors:

- Finance
- Information Systems
- Management and Labor Relations (See Addenda - June 30, 2005)
- Marketing

- Production/Operations Management

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Admission Information

In addition to meeting [College of Graduate Studies](#) requirements for admission, an applicant to the D.B.A. program must hold a master's degree in business administration (M.B.A. or equivalent) from an accredited college or university and must meet the following minimum standards:

1. At least 1,260 points based on the following formula: 200 times the graduate [grade-point](#) average plus the total score of the Graduate Management Admission Test (GMAT). A minimum score at the 70th percentile on the [GMAT](#) is preferred. [GMAT](#) scores should be reported from a test taken within the five years immediately prior to application to the D.B.A. program.
2. The formula outlined above serves as a general guideline to the Doctoral Program Faculty Committee, which makes the final admission decisions. Applicants also must submit a current resume, a statement of goals and objectives, and three letters of recommendation, at least one of which should be from a college professor familiar with the applicant's graduate-level performance and academic ability.

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Preparatory Program

The basic preparation for the D.B.A. program is the Master of Business Administration (M.B.A.) degree or its equivalent (e.g., Master of Accountancy) from a program accredited by AACSB International, the Association to Advance Collegiate Schools of Business. If the applicant's master's degree is not an M.B.A. (or its equivalent) from an AACSB-accredited program, the student must present evidence of the completion of the 500- and 600-level core requirements (or their equivalents) for the College of Business Administration's M.B.A. program before being admitted to the D.B.A. program.

An application, an official transcript from each college and university previously attended, and other application materials must be sent to the Office of [Graduate Admissions](#), Cleveland State University, 2121 Euclid Avenue, Cleveland, Ohio 44115.

To facilitate the admission process, it is strongly recommended that applicants use the online application system at www.csuohio.edu/admissions/gradForm.html. The processing time for paper application forms is longer.

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Requirements for the D.B.A. Degree

1. Completion of a minimum of 68 semester credit hours (44 hours of courses, 24 hours of doctoral research) with a minimum grade-point average of 3.00.

Enrollment in D.B.A. classes is limited to students admitted to the D.B.A. program.

Each D.B.A. student must complete the following program of study, including specific core, major, and support courses, seminars, electives, and doctoral dissertation research:

- a. Foundational courses, including courses in a student's functional area, and a teaching seminar (minimum nine credits)
- b. Advanced Analytical and Operational Core (minimum 12 credits)

- c. Major (minimum 18 credits)
- d. Additional research seminars (six to eight credits)
- e. Dissertation research (minimum 18 credits)

Students must register for 12 dissertation research credits per semester during the first year of the dissertation. After the first year, students must register for a minimum of one dissertation credit hour each semester until the dissertation is completed. Permission of the D.B.A. Director must be obtained prior to registering for any courses numbered 891, 895, 896, or 899.

2. Selection of a major advisor and an advisory committee.

As the student progresses toward the research phase of the program, he or she selects a major research advisor. In consultation with the major advisor, the student selects at least three additional Graduate Faculty members to comprise the advisory committee. Of these three members, one must be a member of the Graduate Faculty within the student's major area of specialization, and another must be a Graduate Faculty member from outside of the College of Business Administration. The major advisor and the composition of the advisory committee may change during a student's program of study due to changes in faculty availability and/or changes in a student's needs or interests.

3. Attendance at doctoral and College seminars.

Doctoral students at the pre-dissertation stage are encouraged to attend regular dissertation-research seminars to hear presentations from faculty members, outside speakers, and doctoral students. Attendance at the dissertation-research seminars is mandatory for students in the dissertation stage.

4. Satisfactory performance in the comprehensive examinations.

Upon completion of formal course work, the student must demonstrate competence in the major field by passing the required comprehensive examination. This written examination is prepared and graded by the Graduate Faculty making up the Doctoral Committee from the major area of specialization. Examinations are scheduled and administered by the Director of the D.B.A. program twice a year and must be completed satisfactorily before beginning the dissertation.

5. Presentation and defense of the dissertation proposal.

Upon completion of the formal course work and the comprehensive examination, the student prepares a dissertation proposal in his or her major area of specialization. Upon approval by the major advisor, the student makes an oral presentation and defense of the proposal to the Dissertation Committee and the College of Business Administration Faculty.

6. Presentation and defense of the dissertation.

Upon completion of the dissertation, the student makes an oral presentation and defense of the dissertation to his or her committee and the College of Business Administration Faculty.

Advanced Analytical and Operational Core and Teaching Seminar

D.B.A. students begin their course work by completing the courses in the Advanced Analytical and Operational Core and Teaching Seminar while limiting their course work in the major. This core is designed to help students develop technical and research skills, as well as the ability to solve administrative problems.

Preparatory Requirement

OMS 733 Multivariate Statistical Methods (3-0-3)

Courses

DBA 802 Applied Multivariate Statistical Analysis (4-0-4)

DBA 803 Business Research: Analysis and Applications (4-0-4)

A teaching-effectiveness course is offered to ensure that the student develops the skills needed to become an effective instructor. It should be taken at the beginning of the student's doctoral course work.

DBA 720 Seminar on Business Teaching Methods (2-0-2)

Workshops

Several workshops assist the D.B.A. student through various stages of the program. These include sessions on enhancing teaching and computer skills, research methodology, and planning and completing the dissertation. In addition, a special workshop is offered each year to help prepare students for their comprehensive examinations.

Requirements for the Major and Support Area

Each D.B.A. candidate chooses a major area of specialization within the College of Business Administration and a support area. The departments offering the major and support-area course work may prescribe additional preparatory requirements beyond the minimum preparation for admission to the D.B.A. program. The student's academic advisor and the D.B.A. Director work with the student to prepare a program of study, including any needed preparation. Depending on the student's background and research interests, he or she may be required to complete more than the minimum number of courses required in the major and/or support area.

The following sections present the requirements for the major and support-area specializations offered by the departments within the College of Business Administration.

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Finance (FIN) Major

Preparatory Requirements

An M.B.A. degree (or the equivalent) is required, including a strong background in the theory of finance, financial management, and intermediate-level microeconomics. More specifically, a candidate should have completed the following finance courses (or their equivalents):

FIN 501 Financial Management

FIN 601 Financial Policies

Courses

FIN 801 Theory Seminar (3-0-3)

FIN 802 Seminar in Corporate Finance (3-0-3)

FIN 803 Seminar in Investment and Portfolio Models (3-0-3)

FIN 804 Seminar in Financial Institutions and Markets (3-0-3)

FIN 805 Seminar in International Financial Management (3-0-3)

FIN 806 Seminar in Real Estate (3-0-3)

FIN 807 Applied Research Methods and Design in Finance (3-0-3)

FIN 891 Doctoral Research in Finance (variable credit)

FIN 895 Dissertation Research Seminar (3-0-3)

FIN 896 Current Problems in Finance (variable credit)

FIN 899 Dissertation (variable credit)

See the [College of Business Course Descriptions](#) section of this Catalog for details on FIN courses.

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Information Systems (IST) Major

The Information Systems major of the D.B.A. program currently is undergoing revision. Up-to-date information about preparatory requirements, courses, degree requirements, and the program in general can be found at the Computer and Information Science Department web site at cis.csuohio.edu. Prospective students also can contact the CIS Department by phone at (216) 687-4760 or by e-mail at csidept@csuohio.edu.

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Management and Labor Relations (MLR) Major (See Addenda - June 30, 2005)

Preparatory Requirements

An M.B.A. degree (or the equivalent) is required, including a strong background in management and organizational theory and a good understanding of the application of computers to the analysis of organizational problems. More specifically, a candidate should have completed the following courses (or their equivalents):

MLR 501 Management and Organizational Behavior

MLR 601/701 Human Resources Management and Labor Relations

At least two graduate-level electives (or their equivalents) from the following list also are required:

MLR 602/702 Advanced Wage and Employment Theory

MLR 604/704 Interpersonal Relations and Group Dynamics

MLR 605/705 Organizational Development

MLR 640/740 Performance Appraisal, Compensation, and Benefits

MLR 641/741 Employment Planning, Personnel Selection, and Training

Courses

MLR 800 Research Design and Measurement (3-0-3)

MLR 801 Theory Seminar (3-0-3)

MLR 802 Current Topic Professional Seminar (3-0-3)

MLR 803 Seminar in Organizational Behavior (3-0-3)

MLR 804 Seminar in Strategic Management (3-0-3)

MLR 805 Seminar in Labor Relations (3-0-3)

MLR 806 Seminar in Human Resource Management (3-0-3)

MLR 807 Seminar on Organization Development (3-0-3)

MLR 891 Doctoral Research in Management and Labor Relations (variable credit)

MLR 895 Dissertation Research Seminar (3-0-3)

MLR 896 Current Problems in Management and Labor Relations (variable credit)

MLR 899 Dissertation (variable credit)

See the [College of Business Course Descriptions](#) section of this Catalog for details on MLR courses.

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Marketing (MKT) Major

Preparatory Requirements

An M.B.A. degree (or the equivalent) is required, including a strong background in marketing theory, marketing practices, and marketing research. More specifically, a candidate should have completed the following courses (or their equivalents):

MKT 501 Marketing Theory and Practice

MKT 601 Marketing Management

MKT 602/702 Marketing Research

At least two graduate-level electives (or their equivalents) from the following list also are required:

MKT 603/703 Buyer Behavior

MKT 604/704 Strategic and Tactical Marketing

MKT 605/705 Services Marketing

MKT 606/706 Advertising and Promotion Management

MKT 607/707 Product Management

MKT 608/708 Global Marketing

MBA 602/702 International Business

Courses

MKT 800 Research Design and Measurement (3-0-3)

MKT 801 Marketing Theory (3-0-3)

MKT 802 Global Business Strategy: Theory and Practice (3-0-3)

MKT 803 Strategic Marketing and Tactical Decisions (3-0-3)

MKT 804 Multivariate Techniques in Marketing (3-0-3)

MKT 805 Theory and Research in Buyer Behavior (3-0-3)

MKT 891 Doctoral Research in Marketing (variable credit)

MKT 895 Dissertation Research Seminar (3-0-3)

MKT 896 Current Problems in Marketing (variable credit)

MKT 899 Dissertation (variable credit)

See the [College of Business Course Descriptions](#) section of this Catalog for details on MKT courses.

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Production/Operations Management (OMS)

Preparatory Requirements

An M.B.A. degree (or the equivalent) is required, including a strong background in quantitative methods, applied probability, statistics, and mathematics. A candidate should have completed the following courses (or their equivalents):

OMS 503 Statistical Methods for Business Decisions

OMS 511 Operations Management

OMS 601/701 Business Decision Methods

OMS 633/733 Multivariate Statistical Methods

At least one elective (or its equivalent) from the following list also is required:

OMS 611/711 Forecasting

OMS 622/722 Project Management

OMS 623/723 Materials and Supply Chain Management

Courses

OMS 801 Theory of Optimization in Production and Operations (3-0-3)

OMS 802 Current Topic Professional Seminar (3-0-3)

OMS 804 Production Planning and Inventory Control (3-0-3)

OMS 805 Quality Control (3-0-3)

OMS 814 Flexible Manufacturing Systems (3-0-3)

OMS 819 Operations Strategy (3-0-3)

OMS 822 Project Management and Scheduling (3-0-3)

OMS 891 Doctoral Research in Production/Operations Management (variable credit)

OMS 895 Dissertation Research Seminar (3-0-3)

OMS 896 Current Problems in Production/Operations Management (variable credit)

OMS 899 Dissertation (variable credit)

See the [College of Business Course Descriptions](#) section of this Catalog for details on OMS courses.

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Tuition & Fees

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Treasury Services

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Current Costs 2007-2008 Academic Year

Below are typical costs for [undergraduate](#), [graduate](#) and [law](#) students. Review the [explanation of costs](#) for **per-credit hour fees**, exact fee schedules, allocation of fees, and additional housing and meal plan options. In addition to the fee schedule below, all students are charged a \$25 [U-Pass](#) fee except during the summer term. The U-Pass program is not available during the summer term.

Undergraduate Students — Ohio Residents			
Full Time (12-16 credit hours)	Fall	Spring	Academic Year
Tuition (\$330.00 per credit hour)	\$3,960	\$3,960	\$7,920
Room	\$2,600	\$2,600	\$5,200
Board	\$1,449	\$1,449	\$2,898
Books and Supplies (estimated)	\$400	\$400	\$800
Parking	\$141	\$141	\$282
Total	\$8,550	\$8,550	\$17,100

Undergraduate Students — Non-Ohio Residents			
Full Time (12-16 credit hours)	Fall	Spring	Academic Year
Tuition (\$444.30/\$615.75 per credit hour - see explanation)	\$5,332 to \$7,389	\$5,332 to \$7,389	\$10,664 to \$14,778
Room	\$2,600	\$2,600	\$5,200
Board	\$1,449	\$1,449	\$2,898
Books and Supplies (estimated)	\$400	\$400	\$800
Parking	\$141	\$141	\$282
Total	\$9,922 to \$11,979	\$9,922 to \$11,979	\$19,844 to \$23,958

Graduate Students — Ohio Residents			
Full Time (13-16 credit hours)	Fall	Spring	Academic Year
Tuition (\$439.25 per credit hour)	\$5,710	\$5,710	\$11,420
Room	\$2,600	\$2,600	\$5,200
Board	\$1,449	\$1,449	\$2,898
Books and Supplies (estimated)	\$400	\$400	\$800
Parking	\$141	\$141	\$282
Total	\$10,300	\$10,300	\$20,600

Graduate Students — Non-Ohio Residents			
Full Time (13-16 credit hours)	Fall	Spring	Academic Year
Tuition (\$597.25/\$834.25 per credit hour - see explanation)	\$7,764 to \$10,845	\$7,764 to \$10,845	\$15,528 to \$21,690
Room	\$2,600	\$2,600	\$5,200
Board	\$1,449	\$1,449	\$2,898
Books and Supplies (estimated)	\$400	\$400	\$800
Parking	\$141	\$141	\$282
Total	\$12,354 to \$15,435	\$12,354 to \$15,435	\$24,708 to \$30,870

Law Students — Ohio Residents			
Full Time (13-16 credit hours)	Fall	Spring	Academic Year
Tuition (\$633.75 per credit hour)	\$8,239	\$8,239	\$16,478
Room	\$2,600	\$2,600	\$5,200
Board	\$1,449	\$1,449	\$2,898
Books and Supplies (estimated)	\$700	\$700	\$1,400
Parking	\$141	\$141	\$282
Total	\$13,129	\$13,129	\$26,258

Law Students — Non-Ohio Residents			
Full Time (13-16 credit hours)	Fall	Spring	Academic Year
Tuition (\$869.55/\$1,223.25 per credit hour - see explanation)	\$11,304 to \$15,902	\$11,304 to \$15,902	\$22,608 to \$31,804
Room	\$2,600	\$2,600	\$5,200
Board	\$1,449	\$1,449	\$2,898
Books and Supplies (estimated)	\$700	\$700	\$1,400
Parking	\$141	\$141	\$282
Total	\$16,194 to \$20,792	\$16,194 to \$20,792	\$32,388 to \$41,584

Explanation of Costs

Tuition and Fees

View the [Ohio Resident Fee Schedule](#) for details. ([Adobe Acrobat Reader](#) required to download files.) The fee schedule is subject to change without notice by the Board of Trustees.

Note: As a **continuing Cleveland State student** your tuition may not be reflected in the fee schedules for the current academic year.

Non-Ohio Residents

Tuition for non-Ohio residents is determined by the number of credits the student is transferring to Cleveland State. View the [Non-Ohio Resident Fee Schedule](#) for details.

Room

The rate of \$2,500 per semester and \$5,000 for the academic year is for a room with one bed/one bath in Fenn Tower. Other room configurations are available. View room rates and plans for [Fenn Tower](#) and [Viking Hall](#).

Board

The rate of \$1,449 per semester and \$2,898 for the academic year is for the **Block 240** meal plan. The **Block 240** meal plan allows access to 240 meals per semester in Viking Dining Hall or meal equivalents which is approximately 15 meals per week. View [meal plan options and plan details](#).

Books and Supplies

The cost for books and supplies is estimated. The cost varies by undergraduate major, graduate program, and law program. Visit Cleveland State's bookstore at www.csuohio.edu/bookstore.

Parking

The parking fee of \$141 per semester or \$282 per academic year is optional but recommended for students consistently parking on campus. For more information on parking, visit www.csuohio.edu/parking.

Other Potential Educational Expenses

Other educational expenses vary per student based on personal situation and lifestyle. These expenses include transportation, loan fees, health insurance, entertainment and personal living expenses.

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College of Graduate Studies

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Graduate Catalog 2004-2006

Master of Science in

Urban Studies

College of Urban Affairs

Urban Affairs 231

(216) 687-2136

urban.csuohio.edu/academics/graduate/msus.shtml

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The Faculty

Professors:

William M. Bowen
 Edward W. Hill
 Sanda Kaufman
 W. Dennis Keating, Associate Dean, Instruction and Research, M.S.U.S. Program
 Director
 Norman Krumholz
 Helen Liggett
 Sylvester Murray
 Mark Rosentraub, Dean
 Robert A. Simons
 Michael W. Spicer
 Roberta Steinbacher
 Camilla Stivers

Associate Professors:

Jennifer Alexander
 Mittie Olion Chandler
 Lawrence F. Keller
 Wendy A. Kellogg
 Alan C. Weinstein, Director, Law and Public Policy Program
 Michael Wells

Assistant Professors:

Shari Garmise
 Jun Koo
 Nancy Meyer-Emerick
 Brian Mikelbank

Levin Scholars:

David O. Meeker, Jr. (1978-79) (deceased)
 Wolf Von Eckardt (1979-80) (deceased)
 Sarah Short Austin (1980-81)
 Martin Rein (1981-82)
 Paul R. Porter (1982-84)
 Edgar A. Rose (1982-84)
 Wilbur R. Thompson (1985-86)
 Phillip Clay (1987-88)
 David C. Perry (1989-91)
 James M. Banovitz (1991-93)
 Robert Waste (1994-95)
 Camilla Stivers (1997-2002)
 Janet Kelly (2003-)

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Introduction

The program offers advanced training in urban studies to recent undergraduate-degree recipients, practitioners already working in the field, and returning students who wish to pursue careers in public, not-for-profit, or private service.

No single discipline adequately covers the broad spectrum of knowledge that the modern urban problem solver needs. Thus, the program draws on many disciplines to broaden and extend the student's knowledge and expertise through a combination of specially developed urban core courses, research seminars, and electives. It is an interdisciplinary program drawing on resources and faculty from a variety of disciplines, colleges, and departments. Classroom knowledge is augmented by internships and other experiential training that add scope to the program.

The objective of the program is to educate students with a grounding in theoretical perspectives and applied research methods useful for effective problem definition and problem solving. These skills enhance organizational capacity in attempting to define, analyze, and solve urban problems. Special emphasis is placed on economic development, organizational leadership, law and public policy, urban ecology, and policy analysis.

For updated information about the M.S.U.S. program, visit urban.csuohio.edu/academics/graduate/msus.shtml.

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Faculty Research and Publications

Urban Studies faculty members conduct research in the areas of housing, economic development, environmental policy and planning, historic preservation, neighborhood and community development, social policy, conflict resolution, public finance, and urban management.

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Research Units

Students have opportunities to work with the faculty and staff in the research, public service, and training centers in the Levin College. See the Educational Resources section of this Catalog for information on the Levin College facilities.

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College Computing and Technology

In order to promote computer literacy and provide computer-based academic resources, the Levin College maintains two student computer labs with a total of 49 Pentium II PCs running Windows 2000. The computer labs, located in UR 39 and UR 40, offer software applications for word processing, spreadsheet analysis, database, computer-aided presentation, Geographic Information Systems (GIS), ArcInfo, Internet access, and statistical analysis. The labs provide access to laser printers for high-quality black-and-white output, a color laser printer for GIS maps, and a color scanner for capture of graphics. Each lab is equipped with a permanently mounted LCD projector for teaching computer-based classes. Any student enrolled in a Levin College program or class may apply for a computer-lab account and use the labs during hours in which the College's building is open. In addition, Levin College-lab account holders are provided with disk space on the networked server for conveniently storing class work; an e-mail account for communicating with people on campus and around the world; and disk space

for creating personal web pages. The Interactive Media Lab (IML) is available for production of DVDs, CD-ROMs, video/audio streams, and advanced graphics. Digital video/audio capture equipment is available. The IML is equipped with Apple Macintosh G4 dual processor computers and a Quicktime streaming server. Additional computing information may be found at the College web site at urban.csuohio.edu.

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Financial Assistance

The Levin College provides [graduate assistantships](#) on a competitive basis to full-time students. Although the deadline for receipt of graduate assistantship applications is March 1, fullest consideration is given to applicants who have submitted all application materials for the M.S.U.S. program by February 1.

The College also offers paid internships and tuition grants to eligible degree-seeking students. Application forms are available from the Levin College Office of Student Services. (See also the section on Expenses and [Financial Aid: Graduate Assistantships](#) in the front of this Catalog.)

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Career Information

The Levin College—through the Department of Urban Studies, the Office of Student Services, and the faculty—provides a variety of services related to career planning to help students and graduates find employment related to their program of study. Current job postings are maintained in the Office of Student Services and on the College web site. Cleveland State's Career Services Center also provides graduate students and [alumni](#) with career advice and career development assistance, including resume review. (See the section on Campus Services and Programs: Career Services in the front of this Catalog).

Careers in Urban Affairs

Graduates of the M.S. program in Urban Studies hold a variety of positions in the public, private, and nonprofit sectors. The [alumni](#) roster includes elected officials, directors of local development corporations and other nonprofit organizations, environmental policy analysts, real estate personnel, and program planners and managers working in a broad spectrum of urban organizations.

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Admission Information

Successful applicants to the Master of Science in Urban Studies program must fulfill the requirements established by the College of Graduate Studies and the Master of Science in Urban Studies faculty. The requirements for Regular admission are:

1. An undergraduate [grade-point](#) average of 3.00 or better, and
2. The Graduate Record Examination (GRE) General Test with combined verbal and quantitative scores at the 40th percentile or better and Analytical Writing of at least a 4.0. Students with a graduate degree from an accredited college or university may be exempted from this requirement.

Applicants who do not meet [grade-point](#) or test-score requirements may be considered for admission on a probationary basis if the undergraduate [grade-point](#) average is below 3.00, but

test scores are at the 50th percentile or above. These students must complete prescribed courses with a [grade-point](#) average of 3.00 or better before being allowed to continue in the program.

International students should refer to the Admission to the College of Graduate Studies section in this Catalog for additional information.

Applicants must submit two letters of recommendation. At least one of the recommendations should come from a faculty member familiar with the applicant's academic work. Submit all materials to the [Graduate Admissions Office](#).

To facilitate the admission process, it is strongly recommended that applicants use the online application system at www.csuohio.edu/admissions/gradForm.html. The processing time for paper application forms is longer.

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Degree Requirements

The requirements listed below are under review as of the printing of this catalog. Changes will take effect with the Fall 2004 term. Please visit the web site at urban.csuohio.edu/academics/graduate/msus.shtml or contact the College of Urban Affairs for information on changes in program requirements.

A minimum of 36 credit hours is needed to complete degree requirements. Students must comply with all University requirements and must attain a 3.00 or better [grade-point](#) average.

Students are required to complete a common core curriculum and an area of specialization with the advice and consent of their faculty advisor.

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Core Courses (See Addenda - July 01, 2005)

The core of the M.S. in Urban Studies curriculum (20 credit hours) is required of all students and consists of the following:

UST 601 Applied Quantitative Reasoning I*

UST 602 Applied Quantitative Reasoning II*

UST 606 Evolution of Human Settlements

Plus two of the following:

UST 603 Public Finance and Economics*

UST 605 Urban Spatial Structures*

UST 616 Systems and Processes of Policy Development

*For those students specializing in Economic Development, the core consists of these courses and UST 615 Economic Development and Budgetary Policy

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Areas of Specialization

Students complete a minimum of three courses (12 credit hours) in an area of specialization to be chosen in consultation with an advisor. The areas of specialization are given below. See the Graduate Programs Advisor for specific curriculum plans.

1. Economic Development
2. Environment
3. Law and Public Policy
4. Organizational Leadership
5. Urban Policy Analysis
6. Urban Services Administration

The Levin College and the Cleveland-Marshall College of Law jointly sponsor the Law and Public Policy program. The program and its curriculum are recommended for law students and graduate students in urban affairs who are interested in public-service careers and who wish to expand their understanding of legislative and administrative procedures, governmental decision making, and public-policy development.

LAW 557 Legislation* or PSC 605 Public Administration and the Political Process

LAW 623 Administrative Law* or PAD 631 Law and Public Administration

*See the [College of Law Catalog](#) for course descriptions.

Three experiential opportunities are offered. The Law and Public Policy Clinic introduces students to the legal and analytic tools needed in addressing public policy issues. The Washington and Columbus seminars allow students to observe public policy as it develops through the legislature and executive agencies.

UST 573 Columbus Seminar

UST 574 Washington Seminar

UST 670 Introduction to Law and Public Policy

UST 683 Law and Public Policy Clinic (Prerequisite: UST 670)

Students may select courses in the areas of economic development, environment, law and public policy, organizational leadership, urban policy analysis, and urban services administration.

Those students whose needs are not met with one of the six areas of specialization listed above may design individual programs of study in consultation with their advisors and with the approval of the Program Director. Examples of individually designed programs of study include Housing, Neighborhood Development, and Comparative Urban Studies.

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Electives

The remainder of the program is composed of electives (up to three courses or 12 credits) and a thesis or exit project (four credits). Internships, independent research projects, and reading courses may be completed for elective credit.

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Internship (Variable Credit)

An internship is not required; however, students without related work experience are encouraged to seek an internship placement. Paid and unpaid internships are arranged through

the Department of Urban Studies. Interested students may receive elective credit for internship work.

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Exit Requirements

All candidates for the Master of Science in Urban Studies degree must complete a thesis or an alternative exit project. Generally, students may not register for thesis/exit-project credit until they have completed the core courses and the required courses in the area of specialization.

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Thesis

Before registering for thesis credit, a student must select a thesis advisor from the Urban Studies faculty. In conjunction with the advisor, the student then selects a thesis committee. The committee consists of at least three members, all of whom must be members of the Graduate Faculty. The committee's function is to advise and assist the student in writing and research and to formally approve the thesis once it has been successfully completed.

Students selecting the thesis option should familiarize themselves with the regulations and procedures of the College of Graduate Studies. (See the section on Thesis/Dissertation in the front of this Catalog.)

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Exit Project

Before registering for exit-project credit, a student must select an advisor, who will approve the student's proposed project and read the completed report. Students must complete the Exit Project Approval Form and obtain the required signature prior to registering for the project.

Students selecting the exit-project option must successfully complete an applied research report, an original project design, a policy analysis and evaluation paper, or a similar project as approved by the advisor. The exit project must place the work in an academic context, including a comprehensive literature review and appropriate consideration of the theoretical roots of the particular professional application.

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Dual Degree Program

In 1998 a cooperative agreement was reached between the Levin College of Urban Affairs at Cleveland State University and the Department of Regional Development of Chung-Ang University in Seoul, Korea, to offer a dual Master of Science degree in Urban Studies/Urban and Regional Planning. Chung-Ang University will waive tuition.

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Course of Study

Students who wish to spend the second year of the M.S.U.S. program in residence in Seoul, Korea, must apply to the M.S.U.S. Program Director for admission well in advance of the semester(s) of intended residence.

Levin College students take Chung-Ang classes (three credit hours), which are accepted by Cleveland State toward the M.S.U.S. degree. They include the following courses:

Applied Statistics Survey Research Methods Public Economics Regional Economics

Elective courses include:

Urban and Regional Planning Urban and Regional Policy Urban Planning Methods Community Development Methodology Introduction to GIS Urban History

Classes are taught in Korean; however, English textbooks are available and Chung-Ang faculty advise and tutor students in English.

Students receive the M.S.U.S. degree from Cleveland State University and the Urban and Regional Planning degree from Chung-Ang University.

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Courses

Cross-listed Courses

Many of the core, track, and elective courses offered in the Levin College are cross-listed in the four master's degree programs (M.S.U.S., M.A.E.S., M.P.A., and M.U.P.D.D.). Please note that courses with the same title may not be repeated for credit. The petitions to this rule are: ENV/PAD/PDD/UST 693, PDD/UST 696, PAD/PDD/UST 697, and PAD 698.

UST 501 Fundamentals of Applied Reasoning (4-0-4). Prepares students to apply quantitative reasoning in work-setting decisions. The course takes a hands-on approach by using real-life examples to illustrate the use of quantitative tools from algebra, probability, and descriptive statistics in solving concrete problems. Students also acquire computer skills essential for the other quantitative-research-methods courses and for other courses using computers through hands-on instruction of mathematical and statistical packages (such as Mathcad and SPSS) in the Urban Affairs Computer Lab. Highly recommended as preparation for UST 601. Cross-listed with PAD 501 and PDD 501.

UST 503 Cartography and Graphics (4-0-4). The principles of map making and the use of presentation graphics in urban planning and research applications. The use of maps and graphics in the analysis of social, economic, and demographic patterns and associations. Hands-on experience with computers and graphic information systems technology. Cross-listed with PAD 503 and PDD 503.

UST 510 Proposal Writing and Program Development (4-0-4). Examination of the structure and content of proposals, sources of funding, foundation decision making, program evaluation, and social/institutional change in the urban environment. Students gain experience through independent preparation of a proposal and application of evaluation procedures. Cross-listed with PAD 510.

UST 512 Managing Urban Diversity (4-0-4). Study of diversity including circumstances faced in urban settings that are exacerbated or affected by diversity factors; exploration of a range of social, political, and economic issues related to diversity. Cross-listed with PAD 512 and PDD 512.

UST 521 Urban Economics (4-0-4). Prerequisites: Two courses in economic principles. Location of economic activity; urban growth and income analysis; urban income inequality and stability; local business cycles; urban public economy and its problems; current urban issues; housing and land-use patterns, traffic congestion, poverty, crime, etc. Cross-listed with ECN 470 and PAD 521.

UST 550 Environment and Human Affairs (4-0-4). Challenges to decision makers in environmental policy making; strategies appropriate to various decision situations; analysis of decision making; negotiation and mediation techniques. Cross-listed with ENV 550 and PDD

550.

UST 553 Environmental Planning I (4-0-4). Introduction to planning for environmentally sustainable cities and regions. Topics include the values embodied in, and development of, environmental planning as a field of planning; processes that generate the physical landscape (focusing on land processes, water resources, and vegetation); and the impacts of human settlements on the landscape. Local, state, and federal laws and regulations relevant to land use and resource protection are featured. Students become familiar with planning methods and their use. Cross-listed with [ENV 553](#) and [PDD 553](#).

UST 563 Housing Analysis (4-0-4). Housing analysis is explored from a regional perspective within a framework of supply, demand, and population movement. Changes produced in neighborhoods and communities as a result of regional housing dynamics are considered, as are the impacts that public policies have on regional housing dynamics and community change. Cross-listed with [PDD 563](#).

UST 572 Conflict Management (4-0-4). Examines conflict as an omnipresent component of any decision-making environment. Offers tools for understanding the nature of conflict; devising individual and group strategies that minimize the destructive consequences of conflict; and identifying solutions that are satisfactory to all involved. Includes lectures, discussions, and simulation games. Cross-listed with [PDD 572](#).

UST 573 Columbus Seminar (4-0-4). Intensive one-week experience in Columbus, Ohio. Examination of the state policy-making, legislative, and judicial processes. Cross-listed with [PAD 573](#).

UST 574 Washington Seminar (4-0-4). On-site study of federal urban-policy issues. One intensive week in Washington, D.C., exposes students to critical analysis of the federal budget and legislative process, intergovernmental relations problems, and current urban-policy issues; preparatory and follow-up sessions required. Cross-listed with [PAD 574](#) and [PDD 574](#).

UST 575 Canadian Studies (4-0-4). Comparative study of selected U.S. and Canadian urban issues, such as housing, urban planning, and historic preservation. Topics are listed in the Course Schedule. Cross-listed with [PDD 575](#).

UST 576 Historic Preservation (4-0-4). The roots of the preservation movement in America and its historical antecedents. Preservation policies at the federal, state, and local levels. Preservation planning tools used in Cleveland and other American cities. Cross-listed with [PDD 576](#).

UST 577 Regional Issues (4-0-4). Provides an overview of the phenomenon of suburban real estate development, sprawl, and out-migration, and involves students in discussion with officials and specialists who represent various perspectives on the subject. Cross-listed with [PDD 577](#).

UST 578 Sacred Landmarks (4-0-4). Exposes students to urban art, culture, history, and ethnicity attributed to Cleveland's sacred landmarks. Students examine sacred landmark preservation efforts in Cleveland, in other American cities, and in cities worldwide. Cross-listed with [PDD 578](#).

UST 594 Levin Chair Seminar (4-0-4). In-depth study of urban policy issues selected by the Albert A. Levin Professor of Urban Studies and Public Service. Cross-listed with [PAD 594](#) and [PDD 594](#).

UST 595 Environmental Seminar (1-0-1). Provides students with experience and instruction on presentation methods and oral communication of scientific information focused on interdisciplinary environmental issues. The course includes guest speakers from various environmental fields, and focuses on career opportunities, as well as the skills and tools needed to succeed as an environmental professional. Students present their research plans during this course. Cross-listed with [ENV 595](#).

UST 601 Applied Quantitative Reasoning I (4-0-4). Prepares students to apply quantitative reasoning to public administration, planning, and policy-design decisions. Presents the logic of quantitative analysis. Introduction to basic techniques for data description and presentation to lay audiences using computer technology, including spreadsheets, presentation packages, and the Internet, and using a computer package for statistical decisions in the context of public administration and planning. Students learn to identify problems that lend themselves to quantitative analysis; ask questions that can be answered through quantitative reasoning; formulate hypotheses and identify the means to test them; carry out analyses and explorations, understand the meaning of results, and reapply results to the initial or similar problems; present and clarify results for specified audiences; evaluate results of quantitative analyses carried out and reported by others; and apply the new knowledge to decision making. Cross-listed with **PAD 601** and **PDD 601**.

UST 602 Applied Quantitative Reasoning II (4-0-4). Prerequisite: UST 601 or permission of instructor. Covers the logic of empirical inquiry and the design of research to solve specific urban problems. Among the topics covered are experimental designs, quasi-experimental designs, measurement, validity, reliability, survey design and analysis, performance measurement, program evaluation, and the ethics of the research process. Students develop an executable research design as a product of the course. Cross-listed with **PAD 602** and **PDD 602**.

UST 603 Public Finance and Economics (4-0-4). Application of microeconomic analysis to public-policy issues; study of selected concepts and issues within the public sector. Cross-listed with **PAD 603** and **PDD 603**.

UST 605 Urban Spatial Structures (4-0-4). The manner in which people and places interact in labor, housing, and product markets to produce the urban outcome: cities, housing, employment, and wealth. Cross-listed with **PAD 605** and **PDD 605**.

UST 606 Evolution of Human Settlements (4-0-4). An examination of the history of human settlements and the major intellectual traditions focusing on urbanism, especially the city. These traditions span a variety of disciplines from history to sociology. Many of the theorists are themselves interdisciplinary. Cross-listed with **PDD 606**.

UST 607 Introduction to Urban Planning (4-0-4). The nature of physical planning and its relation to social and economic planning; steps in the planning process; levels of planning; preparation and criticisms of plans and planning studies. Cross-listed with **PDD 607**.

UST 608 Urban Design Seminar (4-0-4). Private land-development processes in American cities; governmental incentives to private development, the actors in the development process; market research, feasibility, and cash flow analysis. Cross-listed with **PDD 608**.

UST 609 Planning Law (4-0-4). An introduction to the fundamentals of urban planning law. Selected topics are emphasized in such areas as land-use controls, housing, and community development. Cross-listed with **PDD 609**.

UST 610 Urban Development Process/Market Analysis (4-0-4). Provides an overview of the planning/development process and obstacles encountered in the initiation of urban real estate projects. Provides a methodology for analyzing the commercial, industrial, and residential market redevelopment potential for vacant or underutilized urban property. Cross-listed with **PDD 610**.

UST 612 Urban Political Processes (4-0-4). Governmental structure, processes, and problems arising from physical and social structures of contemporary urban areas; examination of emerging political forces and changing governmental institutions. Cross-listed with **PDD 612** and **PSC 612**.

UST 614/714 The Future of Urban Children (4-0-4). An examination of trends in the well-being of urban children and youth and the major factors influencing their growth and development. These factors include families and community structures and processes, socioeconomic status, education, health, delinquency, violence, and selected social policies.

UST 615 Economic Development and Budgetary Policy (4-0-4). An overview of national economic policy development, implementation, and impacts. Current issues in political economy and their impact on American national and sub-national governments, including the concept of wealth creation and its manifestations. Concepts are linked to the economic development process at sub-national levels of government; how economic development strategies link to wealth creation in the private and public sectors. Cross-listed with PDD 615.

UST 616/716 Systems and Processes of Policy Development (4-0-4). Study of methods used by policy makers and their staffs in formulating policy instruments; the objectives policy makers seek to accomplish; how they search for alternative ways of achieving objectives; and the implications of their choices. Areas of emphasis include distributional and spill-over effects of policy, and the political and organizational problems associated with the acceptance and implementation of policy. Cross-listed with PDD 616.

UST 620 Economic Development: Plans and Strategies (4-0-4). Examination of the techniques utilized in developing plans for overall economic growth and development with an emphasis on the industrial sector; actual experience in formulating and testing plans and development strategies. Requires comprehensive regional analysis. Cross-listed with PAD 620 and PDD 620.

UST 621 Local Labor Market Analysis (4-0-4). Prerequisites: UST 601, UST 603, and knowledge of Excel or other spreadsheet program. The relationship between the functioning of national, regional, and urban labor markets, earnings distribution, and poverty; review of the theory of labor markets and the impact of unions on wage setting and employment. Cross-listed with PAD 621 and PDD 621.

UST 622/722 Economic Development Policy (4-0-4). An examination of the international and national competitive positions of industry; state and national industrial policy proposals; various approaches to economic development and industrial policy. Cross-listed with PAD 622 and PDD 622.

UST 623 Urban Development Finance and Applied Project (4-0-4). Prerequisites: UST 603 and UST 610. Financing, deal structuring, and analysis of public subsidy for urban real estate projects using discounted cash-flow analysis. Also includes preparation of a comprehensive report and the presentation of an urban real estate project. Cross-listed with PAD 623 and PDD 623.

UST 624 Anti-Poverty Policy (4-0-4). Prerequisites: UST 603 or equivalent and UST 621. Examines the historical development of anti-poverty policy and the economic effectiveness of various welfare-reform efforts. Looks at anti-poverty efforts from the perspective of national macroeconomic policy and national programs, moves to state-based efforts, and concludes with community-development perspectives on asset accumulation for low-income families. Cross-listed with PAD 624 and PDD 624.

UST 625/725 Strategic Thinking (4-0-4). The theory and practice of strategic thinking for planning and management in the public and nonprofit sectors; concepts and procedures that assist planners and managers in coping with uncertainty; development of analytical skills and techniques. Cross-listed with PAD 625 and PDD 625.

UST 626 Workforce Development (4-0-4). Prerequisite: UST 603 or equivalent. Workforce development takes place on both the supply and demand sides of the labor market. The demand side deals with the expressed needs of employers for specific skill types. The supply side is divided into efforts to upgrade the skills of incumbent workers and to inculcate marketable skills to new workers. A practical examination of the state of the art in workforce development strategies, policies, and programs. Cross-listed with PAD 626 and PDD 626

UST 627 Urban Tourism, the Urban Core, and Economic Development (4-0-4). Explores the global interest in utilizing aspects of culture and the entertainment and hospitality industries to revitalize urban areas and enhance urban life. Assesses the importance of sports, culture, and the entertainment and hospitality industries to society; the ability of cities and their

leaders to control economic development; different tourism, hospitality, and entertainment strategies for development; evaluates the social and economic development benefits of amenities; review of experiences with entertainment for redevelopment. Cross-listed with PDD 627.

UST 632 Organizations and Management in the Public Sector (4-0-4). Traces the history of public management and how this history can be organized to increase the effectiveness of managing public organizations. An overview of management thought, its cultural context, and its “politics.” Cross-listed with PAD 632.

UST 633 Budgetary Policy (4-0-4). The importance of municipal budgeting and finance to public policy makers and public administrators. Sources of city finance information; examination of the revenue, expenditure, and debt structure of American cities. Budgetary processes, formats, and accounting systems. Cross-listed with PAD 633 and PDD 633.

UST 634/734 Ethics in the Public Sector (4-0-4). Provides students with an understanding of the ethical dimensions of public administration and helps students develop the awareness, skills, and value framework to act ethically in a public or private-sector management role. Cross-listed with PAD 634.

UST 642/742 Introduction to Geographic Information Systems (4-0-4). Prerequisite: UST 501 or permission of instructor. Principles of Geographic Information Systems (GIS) as a computer tool to provide spatial information analysis. Laboratory instruction in the use of GIS software to aid in the analysis of workplace problem situations. Cross-listed with ENV 642, PAD 642, and PDD 642.

UST 643/743 Advanced GIS (4-0-4). Prerequisites: UST 434; and UST 642 or equivalent. This course teaches students how to develop and implement various GIS applications such as network analysis, polygon overlay, and surface modeling. Students use advanced GIS software tools in completing computer-based analytical exercises. Cross-listed with ENV 643, PAD 643, and PDD 643.

UST 644 GIS Capstone Seminar (4-0-4). Prerequisite: UST 643. Provides an overview of current issues in GIS. Students review and discuss their GIS projects/research in the context of these issues. Students review both the technical/practical issues encountered as well as the conceptual implications of their projects. The course offers graduate students the opportunity to reflect on the skills learned during their GIS projects and provides an overview of ongoing development in the field. Cross-listed with ENV 644, PAD 644, and PDD 644.

UST 651/751 Environmental Finance and Capital Budgeting (4-0-4). Introductory course in natural-resource economics theory, financial decision-making processes, and public policy relevant to environmental protection, urban sustainability, and natural-resource development and management. Examination of issues and methods of financing environmental projects. Focus on the application of theory to practice in state and local governments. Cross-listed with ENV 651 and PDD 551.

UST 652/752 Environmental Policy and Administration (4-0-4). A comprehensive, interdisciplinary introduction to the values, preferences, and economic interests that underlie the formulation of environmental policy. Local, regional, state, national, and global issues are examined and characterized with emphasis on the national and state levels. Cross-listed with PDD 552.

UST 653/753 Environmental Planning II (4-0-4). Prerequisite: UST 553 or permission of the instructor. An advanced course designed for students with knowledge of ecological processes or relevant environmental fields. Features regional ecological infrastructure and landscape scale. Typical topics include watershed management, land-use change and ecological impacts, and regional open-space and habitat preservation. Provides an opportunity to apply planning processes and techniques such as suitability analysis, GIS mapping, risk assessment, or environmental impact assessment through a project exercise. Cross-listed with ENV 653 and PDD 653.

UST 654/754 Environmental Institutions and Administration (4-0-4). An interdisciplinary introduction to the institutions and processes of public-policy implementation for environmental issues. Discusses the major government groups and organizations central to environmental policy making and administration, including Congress, congressional environmental committees, the executive branch, and the judiciary. The roles of bureaus critical to the implementation of environmental policy including the Environmental Protection Agency, the Forest Service, the Bureau of Land Management, and the Department of Energy are explored. Rulemaking, intergovernmental relations, and trans-border issues are emphasized.

UST 655/755 Environmental Risk and Decision Making (4-0-4). Surveys the fundamental concepts involved in environmental risk evaluation and risk-based decision making. Topics include risk assessment, risk-management strategies, modeling, catastrophes, uncertainty, and risk perception. Issues arising from differences in expert and lay cognitive frameworks in the use of science for decision making are highlighted. The psychological, economic, political, ethical, and legal ramifications of risk-based policy and administrative decision making also are covered.

UST 660/760 Neighborhood Planning (4-0-4). The process and techniques for the creation and implementation of neighborhood development plans with an emphasis on Cleveland neighborhoods, neighborhood organizations, and neighborhood planning. An introduction to the local government organizations and private institutions that support neighborhood planning and federal, state, and local programs that fund neighborhood planning and development programs. Students participate in field research on a selected neighborhood project. Cross-listed with PDD 660.

UST 661/761 Legal Developments in Housing (4-0-4). Analysis of the evolution of housing and community-development legislation, programs, and policies in metropolitan America, with emphasis on special topics. Cross-listed with PDD 661.

UST 662/762 Urban Housing Policy (4-0-4). Focuses on the evolution of urban housing policy, the policies that shape the existing housing system, and proposals for modifying housing policy and programs. Housing policy developments are related to broad ideological and political changes since the 1960s. Considers major aspects of the current housing situation, including financing, production, affordability, preservation, and discrimination. Cross-listed with PDD 662.

UST 664 Neighborhood Development (4-0-4). Analysis of community organizations at the neighborhood, community, and national levels; problems and concepts of community organization; models of social action and issues facing organizations. Cross-listed with PDD 664.

UST 670 Introduction to Law and Public Policy (4-0-4). Introduces the basic structures of the American legal system and how that system interacts with such other disciplines as planning, policy analysis, and public administration in the creation of public policy. First course of a two-course sequence, with UST 683. Cross-listed with PAD 670.

UST 683 Law and Public Policy Clinic (4-0-4). Prerequisite: UST 670. Provides an opportunity for students to work on legal and public-policy issues under the supervision of Law and Urban Affairs faculty. Clients include state and local governments, citizens' groups, and nonprofit agencies that come to the clinic for analysis of and proposed solutions to a variety of critical government and social issues. Cross-listed with PAD 683.

UST 690 Urban Internship (variable credit).

UST 693 Special Topics in Urban Studies (4-0-4). Special offerings varying with faculty expertise and student interest. Typical subjects include Affirmative Action in the Public Sector, Public Personnel Management, and Women as Leaders. Specific topics listed in the Course Schedule.

[UST 696 Individual Research \(variable credit\).](#)

[UST 697 Readings in Urban Problems \(variable credit\).](#)

[UST 698 Exit Project \(variable credit\).](#)

[UST 699 Master's Thesis \(variable credit\).](#)

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Urban Studies — Environmental Science Courses

See the Master of Science in Environmental Science section of this Catalog for course descriptions.

[EVS 506 Ecosystem Science \(3-0-3\).](#)

[EVS 523 Map Interpretation and the Visualization of Space \(1-4-3\).](#)

[EVS 560 Urban Geomorphology \(3-2-4\).](#)

[EVS 593 \(3-0-3\) or EVS 594 \(4-0-4\) Special Topics in Environmental Science.](#)

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Cleveland State University

2121 Euclid Avenue, Cleveland, Ohio 44115

www.csuohio.edu 216.687.2000

Contact Webmanager

Cleveland State University

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2121 Euclid Avenue, Cleveland, Ohio

44115 • 216.687.2000

This page last modified July 2005

As of Summer 2005, The Master of Science in Urban Studies curriculum has changed. The Program now requires students to complete 40 credit hours. New specializations have been added. The new curriculum is as follows:

CORE (16 hours)

UST 601: Applied Quantitative Reasoning I
UST 603: Public Finance and Economics
UST 605: Urban Spatial Structures
UST 606: Evolution of Human Settlements

SPECIALIZATION AREAS

ECONOMIC DEVELOPMENT (24 credit hours)

Required courses: (12 hours)

UST 626: Workforce Development
UST 615: Economic Development and Budgetary Policy
UST 689: Capstone-Economic Development: Plans & Strategies

Electives: (12 hours)

UST 602: Research Design and Evaluation
UST 621: Labor Market Analysis
UST 622: Economic Development Policy
UST 624: Anti-Poverty Policy
UST 627: Urban Tourism, the Urban Core, & Economic Development
UST 642: Introduction to GIS
UST 693: Special Topics

PUBLIC FINANCE (24 credit hours)

Required Courses: (20 hours)

UST 615: Economic Development and Budgetary Policy
UST 623: Urban Development Finance
UST 626: Economics and Workforce Development: Policy and Practice
UST 633: Budgetary Policy
UST 689: Capstone-Economic Development: Plans & Strategies or 698 Exit Project or 699 Thesis

Electives: (4 hours)

UST 602: Research Design and Evaluation
UST 651: Environmental Finance and Capital Budgeting
UST 693: Special Topics

URBAN POLICY ANALYSIS (16 credit hours)

Required Courses:

UST 602: Research Design and Evaluation
UST 616: Systems and Processes of Policy Development
UST 633: Budgetary Policy
UST 698 or 699: Exit Project or Thesis

Electives: (8 hours)

UST 573: Columbus Seminar
UST 574: Washington Seminar
UST 622: Economic Development Policy
UST 625: Strategic Thinking in Policy
UST 662: Urban Housing Policy
UST 670: Introduction to Law and Public Policy

URBAN REAL ESTATE DEVELOPMENT (20)

Required Courses:

UST 610: Urban Development Process/Market Analysis
UST 623: Urban Development Finance
FIN 610: Real Estate Finance

FIN 612: Real Estate Investments

UST 689: Capstone-Economic Development: Plans & Strategies or 698 Exit Project or 699 Thesis

Electives: (4 hours)

PDD 608: Urban Design Seminar

PDD 609: Planning Law

UST 626: Economics and Workforce Development: Policy and Practice

COMMUNITY AND NEIGHBORHOOD DEVELOPMENT (20)

Required Courses:

UST 660: Neighborhood Planning

UST 664: Neighborhood Development

UST 693: Special Topics-Qualitative Research and Evaluation

PAD 550: Institutional Development Of Non-Profit Organizations

UST 698 or 699: Exit Project or Thesis

Electives: (4 hours)

UST 510: Proposal Writing and Program Development

UST 512: Managing Urban Diversity

UST 553: Environmental Planning and Urban Sustainability

UST 610: Urban Development Process/Market Analysis

UST 624: Anti-Poverty Policy

PAD 651: Fundraising/External relations in NP's

UST 662: Urban Housing Policy

LAW AND PUBLIC POLICY (12 credit hours)

Required Courses:

LAW 557: Legislation

or PSC 605: Pub. Admin. & the Political Process

LAW 623: Administrative Law

or PAD 631: Law & Public Admin

Electives:

UST 573: Columbus Seminar

UST 598: Washington DC Seminar

UST 670: Intro to Law & Public Policy

UST 683: Law & Public Policy Clinic



College of Graduate Studies

Program Listings

- [Health Professions](#)
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Graduate Catalog 2004-2006

Master of Physical Therapy (See Addenda - July 15, 2005)

Department of Health Sciences

Health Sciences 101

(216) 687-3567

www.csuohio.edu/healthsci/mpt.html

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The Faculty

Professors:

Bette Bonder

Steve Slane, Interim Chair, Health Sciences Department

Associate Professors:

John J. Jeziorowski

Mary K. Milidonis

Ann K. Reinthal

Assistant Professors:

James A. Landis

Paul Sung

Adjunct Assistant Professor and Clinical Education Coordinator:

Karen A. O'Loughlin

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Introduction

The emphasis of the Master of Physical Therapy (M.P.T.) program at Cleveland State University is to develop competent entry-level practitioners who are well prepared to meet the demands of the health care arena in the 21st century, especially the emerging leadership roles that are necessary in a rapidly changing health care environment. Graduates are prepared to assume the diverse roles of the physical therapist, including clinical practice, consultation, teaching, management, participation in research, and advocacy. The ability to understand health systems through interactions with practitioners from numerous disciplines is emphasized in all aspects of the curriculum. The Commission on [Accreditation](#) in Physical Therapy Education accredits the physical therapy program.

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Faculty Research

Cleveland State University faculty have research specializations in biomechanics, culture and health, epidemiology, exercise physiology, gerontology, human sexuality, motor control, neuromuscular disorders, orthopaedics, and pediatrics. A state-of-the-art Motion Analysis Laboratory is available for gait, vestibular, and sports research.

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Admission Information

Admission to the program is selective and limited. Admissions are conducted once a year beginning in the summer and continuing through fall. The deadline for admission is November 1. In addition to meeting [College of Graduate Studies](#) requirements for admission, applicants to the program must:

1. Submit to the [Graduate Admissions](#) Office an Application for Graduate Admission, the \$55 application fee, and all admission materials (official transcripts, test scores submitted by the testing agency directly to the University, letters of recommendation, department application packet, etc.).
2. Submit a completed M.P.T. program packet (available from the Health Sciences Department).
3. Complete the Graduate Record Exam ([GRE](#)).
4. Demonstrate English-language proficiency if English is not the applicant's native language. The [TOEFL](#) or Michigan Test is required. Applicants must have a [TOEFL](#) score of at least 550 or a Michigan Test score of 85 or above.
5. Have minimum [grade-point](#) averages of 2.75 overall and 2.80 in prerequisite course work. All prerequisite courses must be completed with a letter grade of C or better. Pre-professional prerequisites for admission to the program are:
 - a. Chemistry: two-course sequence with laboratories
 - b. Physics: two-course sequence with laboratories
 - c. General biology with laboratory
 - d. Vertebrate, human, or mammalian physiology (junior- or senior-level)
 - e. Human gross anatomy with cadaver laboratory
 - f. Neuroscience with laboratory
 - g. General pathology
 - h. Psychology: two courses
 - i. Sociology: one course
 - j. Statistics: one course
 - k. Medical terminology (not calculated in prerequisite [grade-point](#) average)

Submit all materials to the [Graduate Admissions](#) Office, which will forward material to the M. P.T. Program Director.

To facilitate the admission process, it is strongly recommended that applicants use the online application system at www.csuohio.edu/admissions/gradForm.html. The processing time for paper application forms is longer.

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Program of Study

The curriculum for the Master of Physical Therapy consists of 83 semester credits, including:

1. 59 credits in the core area (including a required research project designed to integrate core graduate course work and clinical experiences)
2. 20 credits of clinical experience (including a capstone clinical experience incorporating all preceding didactic and clinical content)
3. Two elective courses (four to eight credits total)

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Program Requirements

Students in the M.P.T. program must be enrolled full-time and complete six semesters, including all courses listed in the following sequence.

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M.P.T. Curriculum – Table of Courses (See Addenda - July 15, 2005)

Spring Year I

HSC 538 Life Span Development

HSC 542 Functional Anatomy for Physical Therapists

HSC 550 Physical Therapy Theory and Practice I

HSC 562 Physical Therapy Interactions I

HSC 592 Physical Therapy Scientific Inquiry

Summer Year I

HSC 552 Physical Therapy Theory and Practice II

HSC 560 Interdisciplinary Team Development

HSC 564 Physical Therapy Interactions II

HSC 566 Physical Therapy Interactions III

HSC 580 Physical Therapy Clinical Seminar I

HSC 583 Physical Therapy Professional Issues in Clinical Education I

Fall Year I

HSC 554 Physical Therapy Theory and Practice III

HSC 572 Physical Therapy Management of Complex Conditions I

HSC 574 Physical Therapy Management of Complex Conditions II

HSC 582 Physical Therapy Clinical Seminar II

HSC 585 Physical Therapy Professional Issues in Clinical Education II

HSC 598 Special Topics in Physical Therapy Research – Master’s Capstone Project

Spring Year II

HSC 586 Applied Physical Therapy I

Summer Year II

HSC 556 Physical Therapy Theory and Practice IV

HSC 576 Physical Therapy Management of Complex Conditions III

HSC 584 Physical Therapy Clinical Seminar III

HSC 587 Physical Therapy Professional Issues in Clinical Education III

HSC 590 Physical Therapy Organization, Administration, and Management

HSC 598 Special Topics in Physical Therapy Research – Master’s Capstone Project

Fall Year II

HSC 588 Applied Physical Therapy II – Capstone Clinical Education Experience

HSC 598 Special Topics in Physical Therapy Research – Master’s Capstone Project

Note: Students must complete two elective courses during the M.P.T. program

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Courses (See Addenda)

HSC 538 Life Span Development (4-0-4). Focuses on the physical, psychological, and sociological development of the individual, as they relate to health, from conception through older adulthood.

HSC 542 Functional Anatomy for Physical Therapists (1-4-3). Assists the physical therapy student in developing a logical approach to understanding human form and function; the fundamentals of movement through the application of biomechanic and physiologic principles.

HSC 550 Physical Therapy Theory and Practice I (1-4-3). Basic examination procedures used to develop a physical therapy diagnosis/prognosis with emphasis on muscle testing, goniometry, and special testing.

HSC 552 Physical Therapy Theory and Practice II (1-4-3). A fundamentals-of-treatment course that introduces the student to the basic principles of therapeutic exercise.

HSC 554 Physical Therapy Theory and Practice III (1-4-3). A fundamentals-of-evaluation-and-treatment course that introduces the physical therapy student to physical agents, mechanical, and electrical modalities.

HSC 556 Physical Therapy Theory and Practice IV (1-4-3). Introduces the physical therapy student to more complex forms of evaluation and therapeutic exercise management. The theoretical paradigms for evaluation and treatment of patients with neurologically based motor-control problems are presented.

HSC 560 Interdisciplinary Team Development (3-0-3). Introduces the occupational and physical therapy student to contemporary health issues, such as reimbursement, ethics, and outcome-based rehabilitation, that influence the health care team during provision of therapeutic services. The multiple roles of the therapist as well as the various health-service-delivery models are explored.

HSC 562 Physical Therapy Interactions I (3-0-3). Introduces the student to contemporary health issues that influence the practice of physical therapy. Focus is on the development of

communication and interaction skills with the individual and families.

HSC 564 Physical Therapy Interactions II (1-2-2). Provides learning experiences for developing written skills in all aspects of documentation, emphasizing the completion of comprehensive physical therapy notes.

HSC 566 Physical Therapy Interactions III (1-2-2). Provides the student with the opportunity to explore the role of the physical therapist as teacher-communicator, specifically the role related to therapeutic teaching of individuals/families and the role related to collegial teaching of physical therapy peers, other health professionals, and members of the community.

HSC 572 Physical Therapy Management of Complex Conditions I (3-4-5). Synthesizes aspects of physical therapy related directly to patient care using the Nagi Model of Health Status. The first of the three-course series concentrates on multisystem pathology, which may occur following general medical or surgical conditions, with emphasis on the cardiopulmonary system.

HSC 574 Physical Therapy Management of Complex Conditions II (3-4-5). The second of a three-course sequence that synthesizes aspects of physical therapy related directly to patient care using the Nagi Model of Health Status. Concentrates on multisystem pathology, which may occur following an insult, disabling injury, or illness to the musculoskeletal system.

HSC 576 Physical Therapy Management of Complex Conditions III (3-4-5). The third of a three-course sequence that synthesizes aspects of physical therapy related directly to patient care using the Nagi Model of Health Status. Concentrates on multisystem pathology, which may occur with neurologic conditions.

HSC 580 Physical Therapy Clinical Seminar I (0-2-1). The first of a three-course series designed to help students integrate academic material presented during the concomitant term in which the seminar is scheduled. Students are required to participate in community-based service-learning activities, as well as selected clinical experiences that are designed to complement and reinforce the academic course work.

HSC 582 Physical Therapy Clinical Seminar II (0-2-1). The second in the three-course series described for HSC 580.

HSC 583 Physical Therapy Professional Issues In Clinical Education I (1-0-1). Introduces a variety of issues relevant to professional education both on campus and in the transition to the clinical setting. M.P.T. students are acquainted with the Cleveland State campus environment and to the expectations of the M.P.T. program and clinical education requirements within the curriculum.

HSC 584 Physical Therapy Clinical Seminar III (0-2-1). The third in the three-course series described for HSC 580.

HSC 585 Physical Therapy Professional Issues In Clinical Education II (1-0-1). Prepares students for the transition from classroom to clinic through the exploration of a variety of topics ranging from the selection process to strategies for successful performance in the clinical setting.

HSC 586 Applied Physical Therapy I (12 credits). The first full-time clinical course divided into two eight-week placements during which students complete one undesignated rotation, plus one of the three required designated placement types: acute, outpatient, or chronic care.

HSC 587 Physical Therapy Professional Issues In Clinical Education III (1-0-1). Provides students with a group seminar atmosphere to analyze the quality and adequacy of their initial clinical education experiences, while also serving to prepare them for the capstone clinical education course within the curriculum.

HSC 588 Applied Physical Therapy II—Capstone Clinical Education Experience (12

credits). The second and final formal clinical education course divided into two eight-week placements during which students complete two of the three required designated rotation types.

[HSC 590 Physical Therapy Organization, Administration, and Management \(3-0-3\).](#)

Introduces the physical therapy student to the management, organization, and practice functions of the American health-care-delivery system as they relate to the practice of physical therapy. The role of the physical therapist in health care is examined in relationship to socioeconomic, political, ethical, and cultural factors.

[HSC 592 Physical Therapy Scientific Inquiry \(3-0-3\).](#)

Introduces the physical therapy student to the process of scientific inquiry emphasizing analysis of research design. Also relates the use of probability and statistics to measures assessing quality assurance.

[HSC 598 Special Topics in Physical Therapy Research—Master’s Capstone Project \(1-](#)

0-1). Students use scientific inquiry to develop an original or replicated research project that integrates the individual’s didactic and clinical course work. The focus of the project may be either applied or theoretically oriented research.

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Elective Course Requirements

In addition to the M.P.T. courses described above, students are required to take two graduate courses external to the M.P.T. curriculum during the professional program.

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College of Graduate Studies

Program Listings

- Education
 - Educational Specialist Degree
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 - Introduction
 - Faculty Research and Publications
 - Financial Assistance
 - Career Information
 - Counseling
 - School Administration
 - Licenses Apart from Degree Programs

Graduate Catalog 2004-2006

Educational Specialist Degree

Department of Counseling, Administration, Supervision, and Adult Learning

Learning

Rhodes Tower 1419
 (216) 687-4613
www.csuohio.edu/coehs/departments/casal/

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Programs of Study

[Counseling](#)
[School Administration](#)

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The Faculty

Professors:

Frank D. Aquila
 Daniel D. Drake
 Bernadette Marczely
 Ralph D. Mawdsley
 Richard J. McArdle, Emeritus
 Frank L. O'Dell, Emeritus
 Lewis E. Patterson, Emeritus
 Carl F. Rak
 Elizabeth Reynolds Welfel

Associate Professors:

Frederick Hampton
 R. Elliott Ingersoll
 Kathryn MacCluskie
 Elice Rogers
 David A. Santoro, Emeritus
 Donna Schultheiss
 Sarah Toman

Assistant Professors:

Ann Bauer
 Kimberly L. Mason
 Rose Quinones-Delvalle

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Introduction

The Educational Specialist (Ed.S.) degree represents a year of planned advanced graduate study beyond the master's degree. The programs build on the foundation of a master's degree or its equivalent in the same area of specialization. The focus of the programs is the enhancement of specialized professional competence for roles in counseling and

administration. Created under the conceptual framework of the Administrator/Supervisor as a Visionary Practitioner, the educational administration and supervision program enables graduates to achieve outcomes reflecting the five knowledge bases that compose this model: organizational change, relational, developmental, contextual, and ethical. These knowledge bases are applied to the programs within the environments of urban and suburban schools, which are culturally diverse and include students with disabilities.

Organizational Change refers to knowledge of the organizational framework and processes necessary to accomplish the work of the organization as a continuous change process.

Developmental refers to knowledge that transforms the organization's basic inputs (e.g., materials, personnel) into desired goals, that uses technology to access information and to record organizational progress, and that articulates underlying beliefs that link inputs, activity, and outcome.

Relational refers to partnerships, collaborations, and leadership styles that enable stakeholders to have a shared vision.

Contextual refers to understanding the present organization in relation to its past in terms of cultural, economic, political, legal, and regulatory influences.

Ethical refers to knowledge about justice, righteousness, and meaning that assures diversity will be respected and educational resources will be distributed in a manner that offers equal access to all participants.

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Faculty Research and Publications

The faculty members of the Educational Specialist programs are experienced scholars/practitioners. Their published works include textbooks, articles, curriculum packages, and technical reports based on their professional experience as well as planned research programs. Administration faculty members have explored legal issues in education, management styles, the supervisory process, personnel management, administrator assessment, career patterns of administrators, and adult learning. Counseling faculty members have studied counseling processes, counseling special audiences, legal and ethical issues in counseling, stress management, human development, and crisis intervention.

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Financial Assistance

A limited number of full-time graduate assistantships are available in the Department of Counseling, Administration, Supervision, and Adult Learning (CASAL). Graduate assistants help with the teaching program, aid faculty in conducting research, coordinate the services of the counseling lab, and assist in department administration. Graduate **assistantships** provide tuition support and a stipend to qualified students. Applications for assistantships can be made through the CASAL office, Rhodes Tower, Room 1419.

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Career Information

Students completing the Ed.S. in Administration qualify for a number of administrative positions including, but not limited to, school principal, supervisor, personnel director, assistant superintendent, and superintendent. Students completing the Ed.S. in Counseling qualify for positions such as school counselor or director of guidance. Due to early retirement programs recently initiated by many school districts, the employment outlook for individuals completing the Ed.S. program is very good. The Ed.S. program also can be used to qualify for administrative positions in non-school settings or to obtain a counseling license for non-school settings.

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Counseling

Purpose

The Educational Specialist in Counseling is a 32-credit-hour, post-master's, advanced-training program in counselor education. Its purpose is to help counselors in school and agency settings improve and update their professional expertise, or take course work that will qualify them to sit for the Professional Counselor Licensure Examination (PCLE) in the State of Ohio. It should be noted that students only needing a few courses to sit for the PCLE do not need to apply for the Ed.S. degree but may apply as "license or certificate only." Requirements of the program can be met by full-time or part-time study or a combination thereof. The requirements for program admission are sufficiently flexible to encompass the needs of each applicant defined above.

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Admission Information

The following requirements must be met by each candidate applying to the program:

1. Hold a master's degree with a concentration in counseling with at least one course in each of the following areas:

Counseling
Counseling Practicum/Internship
Educational Research
Group Process
Counseling Theory

Human Development or Career Development

Testing

2. Fulfill [College of Graduate Studies](#) requirements for admission as described in this Catalog.
3. Make application to the Office of [Graduate Admissions](#) for the Educational Specialist degree in Counseling and Pupil Personnel Administration.

To facilitate the admission process, it is strongly recommended that applicants use the online application system at www.csuohio.edu/admissions/gradForm.html. The processing time for paper application forms is longer.

Those candidates needing six semester hours or more to complete their concentration requirements must complete the necessary prerequisites prior to admission. If the deficiency is five semester hours or fewer, the candidate may be admitted to the specialist degree program but will be required to meet the concentration deficiencies during the first eight hours of study. Courses taken to complete concentration deficiencies do not count toward degree requirements.

4. Admission to the program is based on the candidate's graduate [grade-point](#) average, score on the Miller Analogies Test ([MAT](#)) or the Graduate Record Examination ([GRE](#)), and letters of recommendation. For further information on admission, call the CASAL Department at (216) 687-4613 or visit the web site at [//www.csuohio.edu/coehs/](http://www.csuohio.edu/coehs/).

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Time Limit

All requirements for the Educational Specialist degree in Counseling must be completed within six years of starting course work at Cleveland State University or elsewhere. This

requirement refers to graduate work taken after receipt of a master's degree.

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Degree Requirements

1. With the help of the advisor, students establish goals for their personal and professional growth and select a series of courses to meet these goals.
2. Students must complete goal-directed courses in Clinical Counseling to gain licensure.

Clinical Counseling Courses

CNS 701 Assessment for Counselors (three credits)

CNS 702 Individual Intelligence Testing (three credits)

CNS 703 Personality Assessment for Counselors (three credits)

CNS 706 Psychopathology and Diagnosis for Counselors (three credits)

CNS 709 Psychopharmacology for Counselors (three credits)

CNS 712 Theories of Personality and Counseling (four credits)

CNS 738 Family Counseling (three credits)

CNS 771 Using the Current Diagnostic and Statistical Manual of Mental Disorders (two credits)

CNS 781 Internship in Counseling (three credits)

CNS 782 Internship in Diagnosis and Testing (three credits)

3. Interdisciplinary Electives With the approval of the advisor, the candidate selects a minimum of four credit hours and a maximum of eight credit hours of course work from any graduate program in the University.

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Exit Requirements

The granting of the degree is based on the following criteria:

1. Satisfactory completion of course work with a minimum grade-point average of 3.00.
2. Satisfactory completion and evaluation of the Internship in Diagnosis and Testing experience as determined by a committee composed of two full-time counselor educators, one full-time faculty member who is not a counselor educator, and, if the student chooses, a practicing counselor or a graduate student.

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School Administration

Purpose

The Educational Specialist in School Administration program is a 32-semester-hour, post-master's program designed to integrate theory and practice in meeting the goals of individuals currently employed in, as well as those aspiring to, positions in school administration. The program is designed to integrate theory and practice in meeting the goals of individuals currently employed in administrative positions, as well as those aspiring to positions in school administration.

A participant in the Educational Specialist in School Administration program can meet the degree requirements of the College of Graduate Studies and the Department of CASAL through full-time or part-time study.

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Admission Information

The following requirements must be met by each candidate applying to the program:

1. Hold a master's degree.
2. Fulfill [College of Graduate Studies](#) requirements for admission as described in this Catalog.
3. Make application to the Office of Graduate Admissions for the Educational Specialist program in School Administration.
4. Submit to the department a statement of professional goals and related competencies. After admission, this statement is used by the advisor for program planning.

To facilitate the admission process, it is strongly recommended that applicants use the online application system at www.csuohio.edu/admissions/gradForm.html. The processing time for paper application forms is longer.

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Prerequisites

A master's degree is required. An individual assessment of graduate transcripts is performed for each student entering the Ed.S. program. Course work to meet prerequisites varies depending on the student's prior graduate credits. Course work in addition to the requirements for the Ed.S. degree may be necessary in order to meet state of Ohio licensure standards.

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Time Limit

All Educational Specialist degree requirements must be completed within six years of starting course work at Cleveland State University or elsewhere. This requirement refers to graduate work taken after receipt of a master's degree.

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Exit Requirements

The granting of the degree is based on the following criteria:

1. Satisfactory completion of course work with a minimum [grade-point](#) average of 3.00.
2. Satisfactory evaluation of the internship experience. If the candidate receives a grade of C for the internship, the student may be required to repeat all or part of it.

3. Satisfactory evaluation of the candidate's growth, the appraisal of which is based on the student's initial program goals and objectives. This evaluation is normally a written examination. However, an action-research project, an oral examination by selected faculty, a field demonstration, a culminating paper that shows evidence of attainment of program objectives, or a combination of the above may be substituted for the written examination, but only if arrangements are completed when the Program of Studies form is filed.

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Degree Requirements

Participants plan their program of studies with an advisor. Below is the program of studies for each area of specialization.

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Ed.S. in School Administration Course of Study

(32 credits)

Superintendency

Required Courses

ADM 652 School Business Management and School Facilities (four credits)

ADM 811 The School Superintendency (four credits)

ADM 880 Internship (two semesters, two credits per semester)

Electives (20 credits)

Educational Staff Personnel Administration

Required Courses

ALD 645 Organizational Behavior and Change (four credits)

ADM 615 Instructional Leadership and Pupil Personnel Administration (four credits)

ADM 618 Staff Personnel Administration (two credits)

ADM 642 Collective Bargaining and Contract Management (two credits)

ADM 643 School Finance and Economics (four credits)

ADM 676 Clinical Supervision and Professional Development (four credits)

ADM 811 The School Superintendency (four credits)

ADM 880 Internship (two semesters, two credits per semester)

Electives (four credits)

Curriculum, Instruction, and Professional Development

Required Courses

EDB 612 Curriculum Theory and Instruction (three credits)

ADM 613 School Law (four credits)

ADM 615 Instructional Leadership and Pupil Personnel Administration (four credits)

ADM 618 Staff Personnel Administration (two credits)

ADM 676 Clinical Supervision and Professional Development (four credits)

ADM 680 Supervision Practicum (two semesters, two credits per semester)

ADM 811 The School Superintendency (four credits)

Electives (seven credits)

Principalship

Required Courses

ADM 613 School Law (four credits)

ADM 614 Administration Principles and Practices (four credits)

ADM 615 Instructional Leadership and Pupil Personnel Administration (four credits)

ADM 618 Staff Personnel and Administration (two credits)

ADM 642 Collective Bargaining and Contract Management (two credits)

ADM 643 School Finance and Economics (four credits)

ADM 676 Clinical Supervision and Professional Development (four credits)

ADM 677 Legal and Policy Issues in Education (four credits) or ADM 674 Special Education Law (four credits)

ADM 681 Elementary School Administration: Theory and Practicum II or ADM 682 Middle School Administration: Theory and Practicum II or ADM 683 Secondary School Administration: Theory and Practicum II (two semesters at two credits each semester)

Pupil Services Administration (See Addenda - July 15, 2005)

Required Courses

ADM 614 Administration Principles and Practice (four credits)

ADM 615 Instructional Leadership and Pupil Personnel Administration (four credits)

ADM 618 Staff Personnel Administration (two credits)

ADM 643 School Finance and Economics (four credits)

ADM 674 Special Education Law (four credits) or ADM 677 Legal and Policy Issues in Education (four credits)

ADM 676 Clinical Supervision and Professional Development (four credits)

ADM 680 Supervision Practicum (two semesters, two credits per semester)

Electives (six credits)

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[Licenses Apart from Degree Programs](#)

Superintendent License

Prerequisites: Master's degree and course requirements for principal's license as well as two years successful teaching experience.

The Superintendent License may be added to the valid Professional Teacher License for an individual who holds a Principal or Administrative Specialist License and may be valid for teaching in the areas designated in the license for supervising programs for ages three through 21 and pre-kindergarten through grade 12 or for administrative duties in a school system.

In addition to the prerequisites, the following requirements must be met prior to recommendation for the Superintendent License:

1. Three years of successful experience in a position requiring a Principal or Administrative Specialist License

2. Completion of a program that includes the following course of study:

ADM 652 School Business Management and School Facilities (four credits)

ADM 677 Legal and Policy Issues in Education (four credits) or ADM 674 Special Education Law (four credits)

ADM 811 The School Superintendency (four credits)

ADM 880 Internship (two semesters, two credits per semester)

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Administrative Specialist License

The Administrative Specialist License may be added to a valid Professional Teacher License or Professional Pupil Services License and may be valid for working in a central office or supervisory capacity under the following conditions:

1. Completion of two years of successful teaching experience under a professional teacher license, with the exception of the Pupil Services Administration License, which requires two years of experience under a Professional Pupil Services License.

2. Successful completion of an approved program of preparation for the license, which includes a concentration in one of the following three areas:

Educational Staff Personnel Administration

Prerequisites: A master's degree, completion of course work toward Principal license, and two years teaching experience.

ADM 615 Instructional Leadership and Pupil Personnel Administration (four credits)

ADM 618 Staff Personnel Administration (two credits)

ADM 642 Collective Bargaining and Contract Management (two credits)

ADM 643 School Finance and Economics (four credits)

ALD 645 Organizational Behavior and Change (four credits)

ADM 676 Clinical Supervision and Professional Development (four credits)

ADM 880 Internship (two semesters, two credits per semester)

Curriculum Instruction, and Professional Development

Prerequisite: Master's degree.

EDB 612 Curriculum Theory and Instruction (three credits)

ADM 613 School Law (four credits)

ADM 615 Instructional Leadership and Pupil Personnel Administration (four credits)

ADM 618 Staff Personnel Administration (two credits)

ADM 676 Clinical Supervision and Professional Development (four credits)

ADM 680 Supervision Practicum (two semesters, two credits per semester)

Pupil Services Administration (See Addenda - July 15, 2005)

Prerequisites: A master's degree in the area of School Administration or Special School Services, such as school audiologist, school counselor, school social worker, speech-language pathologist, or school psychologist

ADM 614 Administration Principles and Practice (four credits)

ADM 618 Staff Personnel Administration (two credits)

ADM 615 Instructional Leadership and Pupil Personnel Administration (four credits)

ADM 643 School Finance and Economics (four credits)

ADM 676 Clinical Supervision and Professional Development (four credits)

ADM 677 Legal and Policy Issues in Education (four credits) or ADM 674 Special Education Law (four credits)

ADM 680 Supervision Practicum (two semesters, two credits per semester)

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College of Graduate Studies

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Graduate Catalog 2004-2006

Master of Education

College of Education and Human Services

Rhodes Tower 1401

(216) 687-4625

www.csuohio.edu/coehs/departments/te/

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The Faculty

Professors:

David W. Adams
 Frank D. Aquila
 Clifford T. Bennett
 Mary A. Boehnlein, Emerita
 Daniel D. Drake
 Thomas W. Frew
 Elyse S. Fleming, Emerita
 Frank A. Johns, Emeritus
 Nancy K. Klein
 E. Michael Loovis
 Robert H. MacNaughton, Emeritus
 Richard J. McArdle, Emeritus
 James A. McLoughlin, Dean
 Bernadette Marczely
 Ralph D. Mawdsley
 Vincent J. Melograno
 Frank L. O'Dell, Emeritus
 Lewis E. Patterson, Emeritus
 Carl F. Rak
 Rosemary E. Sutton
 Carol A. Takacs, Emerita
 Dinah Volk
 Elizabeth Reynolds Welfel
 Sam P. Wiggins, Emeritus
 Jane A. Zaharias, Associate Dean
 Susan G. Ziegler

- Gifted and Talented Learners
- Health and Physical Education
- Literacy Development and Instruction
- Program of Study
- Secondary Education
- Curriculum and Instruction Urban Secondary Teaching (Initial Licensure)
- Special Education

Associate Professors:

Ronald J. Abate
Floyd M. Adams, Emeritus
Ferris F. Anthony
Judith Ausherman
Joshua Gisemba Bagaka's
William A. Beasley
Jill M. Black
James C. Carl
Sanza B. Clark
Lynn Deering
Frederick Hampton
Catherine Hansman
Lillian R. Hinds, Emerita
Richard F. Hurwitz, Associate Dean
R. Elliott Ingersoll
Kathleen D. Little
Kathryn C. MacCluskie
Francine Peterman
Roland G. Pourdavood
Theresa A. Quigney
Lucille Ringel, Emerita
Elice E. Rogers

James Salzman

Gordon E. Samson, Emeritus
David A. Santoro, Emeritus
Donna Schultheiss
Kenneth E. Sparks
Judy I. Stahlman
Sarah Toman
Lih-Ching Chen Wang
Karl F. Wheatley
Philippa Brown Yin

Assistant Professors:

Maria E. Angelova
Ann Bauer
Kay Benjamin
Marius Boboc
Alcillia Clifford, Visiting
Elizabeth Dutro
Jeremy Genovese
Joanne E. Goodell
Mary Gove
Delmi Gunawardena
Grace H. C. Huang
Linda Impecoven-Lin
Debbie K. Jackson
Eddie T.C. Lam
Trisha Wies Long
Kristien Marquez-Zenkov
Kimberly L. Mason
Anthony L. Menendez
James R. Moore
Catherine Monaghan
R. D. Nordgren
Mehmet A. Ozturk
Linda Pallock
Terri Purcell
Rose Quinones-DeValle
Anca Codruta Rafiroiu
Barbara Rucker
Michael Sanders
Patrick W. Wachira
Deborah D. Webster
Lee Wilberschied
Brian Yusko

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[Introduction](#)

Programs leading to the Master of Education degree are designed for individuals seeking to work as professional educators of children, youth, and adults. Most graduates seek employment in elementary and secondary schools. Some specializations are oriented toward non-school settings and prepare graduates to work in higher and adult education, social service agencies, corporate training centers, corporate fitness centers, community health centers, wellness/fitness centers, sports clubs, and outdoor/park recreational facilities. All courses in these programs are offered in the late afternoon and evening in order to accommodate students who wish to maintain full-time employment. During the summer term, courses are offered on a full-day schedule to permit full-time study.

Master of Education programs are offered in four departments within the College: Curriculum and Foundations; Counseling, Administration, Supervision, and Adult Learning (CASAL); Teacher Education; and Health, Physical Education, Recreation, and Dance. The Department of Curriculum and Foundations is responsible for courses in the College Core. The Curriculum and Foundations Department also is responsible for courses in the Curriculum and Instruction specializations in the following areas: Educational Technology; Educational Research; and Gifted and Talented Learners. Initial teaching licensure in Secondary Education also is available in this department as a master's degree in Urban Secondary Teaching (the MUST program). The CASAL Department offers degrees in Administration, Counseling, Supervision, and Adult Learning and Development. The Department of Teacher Education is responsible for the Curriculum and Instruction specializations in Early Childhood Education, Elementary Education, Literacy Development and Instruction (Reading, TESOL, Adult Literacy), Secondary Education (all content fields, including modern languages), and Special Education (Early Childhood/Special Education, Mild/Moderate Educational Needs, Moderate/Intensive Educational Needs). The Health, Physical Education, Recreation, and Dance Department offers the Curriculum and Instruction specialization in Health and Physical Education, as well as programs in Sports Management, Exercise Science, and Community Health Education. See the brief descriptions of each program and specialization below.

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Faculty Research and Publications

College of Education and Human Services faculty pursue a wide variety of research, which may be classified in six major areas:

1. Equity issues, including race and ethnicity, gender, and socio-economic disadvantage.
2. Educational/developmental consequences for special needs populations frequently associated with urban environments, including high-risk and premature infants; preschool populations; juvenile delinquents; mentally challenged, learning disabled, and behavior-disordered children; and gifted and talented students from low socio-economic, racially, and ethnically diverse backgrounds.
3. Urban educational programs, including bilingual education, reading and mathematics competencies, classroom management and discipline, social skills training, management of urban schools, counseling of special urban populations, early childhood interventions (Head Start and day care), Reading Recovery, teacher induction programs, health, wellness, physical education, and whole language.
4. Problems of adults in contemporary urban society, including stress, sport law, sports management, exercise science, health, and leisure-time uses.
5. Foundations of urban education, including life-span development and learning, comparative educational policy, curriculum/methods, teacher education, and guidance and counseling in schools and the community.
6. Legal issues in education and major educational policy issues.

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Accreditation

The Master of Education degree program is fully accredited by the National Council for Accreditation of Teacher Education (NCATE) and the Ohio Department of Education. The Community Agency Counseling and School Counseling programs are accredited by the Council for Accreditation of Counseling and Related Educational Programs (CACREP).

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Financial Assistance

A limited number of graduate assistantships are available in each department, in the Dean's Office, and through funded projects. Graduate assistants have teaching, research, and/or administrative responsibilities for which they receive financial support. For applications and information, contact the departments directly.

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Career Information

The Master of Education degree qualifies graduates to move from entry-level positions in education to career positions with increased leadership responsibility. The degree enables classroom teachers to advance their careers, and provides initial certification/licensure for those who seek school administration, supervision, and counseling positions. Certain specializations provide initial entry or career mobility for educators in business or community settings. Prospects for career advancement in school settings are favorable at this time because of population shifts and staff retirements. Opportunities in business and community settings have increased as society has become more committed to life-long education for adults.

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Admission Information

The following requirements must be met by each candidate applying to the master's program:

1. Fulfillment of [College of Graduate Studies](#) requirements for admission as described in this Catalog.
2. Application to the [Graduate Admissions](#) Office for admission to the Master of Education program in one of the specialization areas.
3. Request that previously attended colleges send one official transcript to the Office of [Graduate Admissions](#). Transcripts must come directly from the originating colleges.
4. Two letters of recommendation (for counseling programs only).
5. A score of at least 47 on the Miller Analogies Test, or a score at the 50th percentile or above on the General section of the Graduate Record Examination. However, a student applying for any program except Counseling is exempt from this requirement if:
 - a. The baccalaureate degree is less than six years old at the time of application AND the undergraduate cumulative [grade-point](#) average was at least 2.75; OR
 - b. The baccalaureate degree is more than six years old at the time of application AND the undergraduate cumulative [grade-point](#) average was at least 3.00; OR
 - c. The student has completed 12 or more semester credits of Cleveland State graduate course work (including [EDB 601](#) or [HPR 601](#)) AND received a grade of B or better in each course.

Upon formal admission to the College, students must prepare a Program of Study with the assistance of an assigned advisor.

Note: Before completing the application, individuals who wish to obtain Ohio Department of Education licensure in order to work in public schools should obtain counseling from the Education Student Services Center, Rhodes Tower, Room 1401, telephone (216) 687-4625.

To facilitate the admission process, it is strongly recommended that applicants use the online application system at www.csuohio.edu/admissions/gradForm.html. The processing time for paper application forms is longer.

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Graduate Status

Regular Graduate Student status is a category applied to students who have met all admission requirements designated by the College of Graduate Studies. Conditional Graduate Student status applies to students who have failed to submit all necessary application materials, but who do meet the University's minimum grade-point and/or admission-test score requirements. Conditional admission allows applicants to register for one semester only, during which time all required documents must be received by the Graduate Admissions Office. Upon receipt of outstanding admission credentials, the Education Student Services Center evaluates the student's credentials to determine whether Regular Graduate Student status is warranted.

Non-degree Graduate Student status is an admission category applied to students who wish to take courses in education, or other subject areas, but who have not been admitted to a degree program. Such students may later be admitted to a degree program upon application if they present required documentation and meet admission requirements. Non-degree students who originally do not meet admission requirements to a degree program may become eligible for admission by:

1. Completing at least 12 semester hours of course work in the College of Education and Human Services, including EDB 601 or HPR 601, and achieving a grade of B or better in each course;
2. Achieving a minimum cumulative grade-point average of 3.00 in courses at the 500 level or above taken as non-degree students; and
3. Notifying the Education Student Services Center, Rhodes Tower, Room 1401, telephone (216) 687-4625.

Note: Normally, a maximum of 12 hours of course work earned as a non-degree graduate student may transfer to a degree program in education with program approval.

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Graduate Licensure Admission

An individual with a baccalaureate degree from a college or university with full academic accreditation and who is seeking a State of Ohio teaching license, may apply for Graduate Licensure admission status. This status is for individuals who are not seeking a master's degree. Requirements for admission are generally the same for Regular graduate degree status. Refer to the section on Admission to the College of Graduate Studies: Graduate Certificate and Licensure Admission in this Catalog for complete descriptions of admission procedures and requirements.

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Transfer of Credits

In addition to the regulations of the University (including the six-year limit on course work), credits transferred from another university for application toward the M.Ed. degree are subject to the following conditions:

1. Approval of the program and departmental committee.
2. No more than nine hours of graduate credit may be transferred, including a maximum of six credits earned for workshops from other universities. The credits must not have been used to fulfill the requirements for the baccalaureate degree.
3. Students must have 15 semester hours of graduate (500- to 800-level) course work completed at Cleveland State and a [grade-point](#) average of 3.00 or better to have transfer credit recorded on transcripts.
4. Not more than one half of a student's total graduate program may be a combination of transfer credit and credit by examination.
5. All credits requested in transfer must carry a letter grade of A, A-, B+, or B in graduate courses. No S/F graded courses may be transferred. [Petitions](#) are not considered for this requirement.

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Program of Study

A Program of Study document, showing all course work and other aspects of the master's program, must be filed. The Program of Study should be developed in consultation with an advisor before the mid-point in the student's program. No elective courses should be taken without the advisor's approval. Any subsequent changes in the student's program should be approved, in advance, by the advisor and recorded on the approved Program of Study on file in the Education Student Services Center, [Rhodes Tower](#), Room 1401.

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Exit Requirements

Each participant in the master's program must select one of the following exit requirements when planning the program of study:

1. Comprehensive Examination (no credit).
2. Project (one to six credits).
3. Thesis (one to six credits).
4. Other exit option approved by individual programs (contact program faculty for details).

Comprehensive Examination Option

The written comprehensive examination is prepared, administered, and evaluated by the student's department. The examination is usually taken in the final semester of enrollment. Students must be registered during the semester in which they take the examination and must have filed an application for graduation (see the Application for Graduation section in this Catalog). When the student's completed examination has been evaluated, the department chair certifies the results to the Associate Dean. Should the student's comprehensive examination be judged unsatisfactory, the student is permitted to take a second examination. A third examination is not permitted.

Thesis/Project Option

M.Ed. candidates who do not take the comprehensive examination must complete either a project or a thesis as their culminating degree activity. Students must be registered for thesis/

project credit each semester (excluding summer unless they are graduating) until the thesis or project is completed.

Thesis/Project Definitions

1. Thesis: The thesis must be a written, in-depth, scholarly investigation of a specific area related to the major emphasis of the student's program of study.
2. Project: The project is usually a manuscript that documents the application of educational theory to practice and demonstrates capacity for evaluation and synthesis. In some instances other media (e.g., film, videotape, computer program) may constitute the major product, but these must be accompanied by written documentation explaining the application, value, and limitations of the product. In all cases a project must include references to related works and must be presented in a form consistent with educational research publications.

Students considering the project or thesis options should contact the Education Student Services Center in the College of Education and Human Services [Rhodes Tower, Room 1401, telephone (216) 687-4625] to request Thesis or Project Option guidelines. Students also should request a copy of the Thesis and Dissertation Format Guidelines from the College of Graduate Studies [Keith Building, Room 1150, telephone (216) 687-9370].

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Graduation Requirements

Before a Master of Education degree can be conferred, the student must:

1. Complete at least 31 to 32 credit hours of course work at the 500 level or above.
2. Achieve a grade-point average of 3.00 or higher.
3. File the appropriate graduation application.
4. Satisfactorily complete all exit requirements.
5. Register for at least one graduate credit hour of course work in the semester of graduation, as well as in the semester in which the comprehensive examination is taken. As noted above, students choosing the thesis or project option must be registered for thesis/project credit each semester (excluding summer unless they are graduating) until the thesis or project is completed.

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Degree Requirements

The Master of Education degree program consists of these academic components:

1. College and/or Curriculum Cores: 10 to 13 credits.
2. Area of Concentration/Specialization: 16 to 48 credits.
3. Electives: up to 12 credits.

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Educational Administration Program

[34 credit hours leading to the Master of Education degree, plus 12 post-master's credits for licensure](#)

Introduction

The Cleveland State University educational administration and supervision program is based on a conceptual framework of the Administrator/Supervisor as a Visionary Practitioner. Graduates achieve outcomes reflecting the five knowledge bases that compose this model: organizational change, relational, developmental, contextual, and ethical. These knowledge bases are applied to the programs within the environments of urban and suburban schools, which are culturally diverse and include students with disabilities.

The program enables participants to gain the conceptual, technical, and theoretical knowledge in the human resources area needed to assume principalship or other entry-level administrative positions. Key areas explored in the program are curriculum, supervision, guidance, personnel administration, community relations, school management, and school law. In addition to a master's degree, a candidate for a professional administrator license must complete two years of successful teaching under a professional license at the age levels for which the principal licensure is sought; a State Board of Education examination; an entry-level program; and such other requirements as the State of Ohio may establish.

The recently revised regulations governing licensing of school administrative personnel in the State of Ohio may change course requirements. Please contact the Department of Counseling, Administration, Supervision, and Adult Learning (CASAL) at (216) 687-4613 for further information.

Interested applicants should specify the Master of Education, with a specialization in principal preparation, on the Application form for Graduate Admission.

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Program of Study

Core

(11 credits)

Educational Research and Technology

EDB 601 Educational Research (three credits)

ETE 501 Technology Strand (two credits)

Social Foundations

One of the following courses:

EDB 604 Social Issues and Education (three credits)

EDB 606 Philosophy of Education (three credits)

EDB 608 School and Society in the American Past (three credits)

EDB 609 Comparative and International Education (three credits)

Human Development

One of the following courses:

EDC 501 Child Development (three credits)

EDB 620 Psychology of the Adolescent Learner (three credits)

EDB 628 Psychology of Learning and Instruction (three credits)

Program Requirements

(23 credits)

The Master of Education with a specialization in Educational Administration includes the following requirements:

EDB 612 Curriculum Theory and Instruction (three credits)

ADM 613 School Law (four credits)

ADM 614 Administration Principles and Practice (four credits)

ADM 615 Instructional Leadership and Pupil Personnel Administration (four credits)

ADM 618 Staff Personnel Administration (two credits)

ADM 642 Collective Bargaining and Contract Management (two credits)

ADM 676 Clinical Supervision and Professional Development (four credits)

Post-master's Licensure

(12 credits)

1. Principal (ages three-14)

ADM 681 Elementary School Administration: Theory and Practicum II (two credits), and

ADM 682 Middle School Administration: Theory and Practicum II (two credits), or

Principal (ages eight-21)

ADM 682 Middle School Administration: Theory and Practicum II (two credits), and

ADM 683 Secondary School Administration: Theory and Practicum II (two credits)

2. ADM 643 School Finance and Economics (four credits)

3. ADM 677 Legal and Policy Issues in Education (four credits) or ADM 674 Special Education Law (four credits)

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Counselor Education Program

School Counseling

48 credit hours leading to the Master of Education degree

Introduction

The school counseling program is accredited by the Council for the Accreditation of Counseling and Related Educational Programs (CACREP). The program is based on the conceptual framework of the School Counselor as a Facilitator of Human Development and Professional Program Manager. This model envisions the professional school counselor as a program manager who has the skills to assess, develop, improve, manage, and evaluate a counseling program that is comprehensive and based on the development of student competencies. The foci of the comprehensive program are developmental (activities provided for all students to foster their development), preventive (activities centered on the identification of students who are highly at risk of acquiring blocks to their development and removal of those blocks), and remedial (activities to help students who are struggling with problems that are impeding their development).

The school counseling program at Cleveland State University is a 48-semester-hour concentration leading to a Master of Education degree. There are two paths to licensure as a school counselor in the State of Ohio. One track is for licensed or certified teachers and the other track is for non-teachers. Full details regarding licensure are described on the Ohio Department of Education web site at www.ode.state.oh.us/teaching-profession/teacher/certification_licensure/standards/pdf/Licensure.pdf.

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Admission Information

In addition to meeting [College of Graduate Studies](#) admission requirements, the Counselor Education Program requires all applicants to:

1. Provide official scores from either the Miller Analogies Test ([MAT](#)) or the Graduate Record Examination ([GRE](#));
2. Provide two evaluation forms completed by professional colleagues or supervisors; and
3. Successfully complete the CASAL Department Admissions Test. Dates and times for the test can be found at www.csuohio.edu/casal/AppAd.html.

The following program guidelines are for students whose official letter of admission is dated after July 1, 2004. Once admitted to the program with Regular graduate status, and after registering for their first semester, students are assigned faculty advisors who help with preparing their programs of study. For students admitted with non-degree status, course information is available in the departmental office, [Rhodes Tower](#) 1419. Students who have not yet been assigned advisors can contact the department office at (216) 687-4612 or (216) 687-4613.

Students are not fully admitted into the program until they have passed [CNS 620](#). Thus, this course must be the first taken in the professional counselor education sequence. Other counselor education professional courses may be taken simultaneously, but not before completing this course. If [CNS 620](#) has not been completed, other courses that may be taken concurrently are: [EDB 601](#), [ETE 501](#), [ALD 603](#), [CNS 604](#), and [CNS 617](#). It is important to note that, in accordance with [CACREP accreditation](#), students are evaluated throughout the program on their academic performance as well as their personal and professional development, which includes mental and emotional wellness. There also are courses in the program where students will be asked to engage in personal growth components that involve self-disclosure.

To facilitate the admission process, it is strongly recommended that applicants use the online application system at www.csuohio.edu/admissions/gradForm.html. The processing time for paper application forms is longer.

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Non-Degree Graduate Status

All non-degree graduate students must complete an Application for Graduate Admission and meet all admission requirements. Admission as a non-degree student is not the same as admission to the counseling program. Non-degree students may enroll in [EDB 601](#), [ETE 501](#), [ALD 603](#), [CNS 604](#), [CNS 611](#), and [CNS 617](#). Once these courses have been completed, non-degree students must apply to the degree program through the Graduate Admissions Office before taking more classes.

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Transfer Credit

Up to nine hours of credit may be transferred into the program from another university with appropriate documentation (transcript and college catalog course description) and advisor approval as long as these courses were not used toward a degree already earned. Transfer credit forms are available from the Education Student Services Center (Rhodes Tower 1401).

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Clinical and Field-Based Experience

There are two separate clinical, field-based courses. The first is [CNS 680, Counseling Practicum](#). This is a one-semester course requiring 100 hours of clinical field experience. Counseling Practicum is offered in the fall and spring semesters. The second clinical, field-based experience is [CNS 685 Internship in School Counseling](#). This is an intensive, two-consecutive-semester learning experience of supervised counseling in a school setting. Internship is offered as a fall-spring sequence only. Prerequisites for Practicum and Internship are listed under the course descriptions in this catalogue. Prerequisites are strictly adhered to by counseling faculty.

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Eligibility for Counseling Practicum ([CNS 680](#))

Students plan their programs so they can apply for practicum two semesters in advance of the term in which they wish to take it. Applications are available in the CASAL Department office, Rhodes Tower 1419. In addition to the application, there is a mandatory practicum-orientation meeting. Applicants for practicum will be notified of the meeting date and time after they turn in their practicum applications to their advisors. To be eligible to register for practicum, students must have passed the following courses: [CNS 617](#), [CNS 620](#), [CNS 622](#), [CNS 623](#), [CNS 624](#), and [CNS 678](#).

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Eligibility for School Counseling Internship ([CNS 685](#))

Students plan their programs so they can apply for internship two semesters in advance of the term in which they wish to take it. Applications are available in the CASAL Department office, Rhodes Tower 1419. In addition to successful completion of the practicum ([CNS 680](#)) and all practicum prerequisites, to be eligible for internship students must have passed the following courses: [CNS 679](#) and [CNS 706](#).

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Sequence

[CNS 620 Laboratory in Counseling Techniques](#) is the first course taken in the professional counselor education sequence. Other counselor education professional courses may be taken simultaneously, but not before completing this course. If [CNS 620](#) has not been completed, other courses that may be taken concurrently are: [EDB 601](#), [ALD 603](#), [CNS 604](#), [CNS 611](#), and [CNS 617](#). Once [CNS 620](#) has been completed, students may take courses other than those listed above. However, students are responsible for knowing the prerequisites for each course listed in the course descriptions in this Catalog.

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Program of Study

(48 credits)

Screening Course

CNS 620 Laboratory in Counseling Techniques (three credits)—first course to be taken after acceptance into the Counseling Program

Research in Behavioral Sciences

EDB 601 Educational Research (three credits)

ETE 501 Technology Strand (two credits)

Cultural Foundations and Social Issues

CNS 604 Cultural and Social Foundations in Counseling (two credits)

CNS 617 Ethical and Legal Issues in Counseling (three credits)

School Counselor Practices and Principles

CNS 678 Foundations of School Counseling (three credits)

CNS 679 Techniques in School Counseling (three credits)

Human Development

ALD 603 Lifespan Development (three credits)

Individual Counseling

CNS 622 Individual Counseling: Theory and Process (three credits)

CNS 670 Counseling Children and Adolescents (three credits)

Group Process

CNS 623 Group Process and Practice (three credits)

Note: Active involvement in a personal growth group is usually a required part of this course.

Assessment and Diagnosis

CNS 611 Appraisal in Counseling (two credits)

CNS 706 Psychopathology and Diagnosis for Counselors (three credits)

Career Development

CNS 624 Career Development and Information Services (three credits)

Clinical and Field-Based Experience

CNS 680 Counseling Practicum (one semester, three credits)

CNS 685 Internship in School Counseling (two semesters, three credits per semester)

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Exit Requirements (See Addenda - July 15, 2005)

A culminating activity is required of all students. Most students choose to take the Comprehensive Examination. It is normally completed during the last semester in which the student is taking course work. Comprehensives are scheduled for the College once each academic semester, usually on the fourth or fifth weekend. Other options include a thesis or project. Details of these options are outlined in the department handbook. Students who fail the comprehensive exam may retake it one time.

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Counselor Education Program

Community Agency Counseling

60 credit hours leading to the Master of Education degree in mental health counseling

Introduction

The main goal of the program is to prepare counselors for roles in community agencies. Graduates who successfully meet educational requirements are eligible for admission to Professional Counselor Licensure Examination (PCLE). After successfully passing the examination, graduates are awarded the Professional Counselor (PC) license until they have acquired two years of supervised experience in counseling, obtained after the award of the master's degree. After successful completion of this supervision experience they are then awarded the Professional Clinical Counselor license (PCC).

The program emphasizes a clinical orientation, focusing on theory and skills in counseling (individual, group, and family), assessment, human behavior and development, diagnosis and treatment of mental and emotional disorders, intervention methods, lifestyle and career development, legal and ethical responsibilities, and service-delivery systems.

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Admission Information

In addition to meeting [College of Graduate Studies](#) admission requirements, the Counselor Education Program requires all applicants to:

1. Provide official scores from either the Miller Analogies Test ([MAT](#)) or the Graduate Record Examination ([GRE](#));
2. Provide two reference forms completed by professional colleagues or supervisors; and
3. Successfully complete the CASAL Department Admissions Test. Dates and times for the test can be found at www.csuohio.edu/casal/AppAd.html.

The following program guidelines are for students whose official letter of admission is dated after July 1, 2004. Once admitted to the program with Regular graduate status, and after registering for their first semester, students are assigned faculty advisors who help with preparing programs of study. For students admitted with non-degree status, course information is available in the departmental office, [Rhodes Tower](#) 1419. Students who have not yet been assigned advisors should contact the department office at (216) 687-4612 or (216) 687-4613.

Students are not fully admitted into the program until they have passed [CNS 620](#). Thus, this course must be the first taken in the professional counselor education sequence. Other counselor education professional courses may be taken simultaneously, but not before

completing this course. If CNS 620 has not been completed, other courses that may be taken concurrently are: EDB 601, ETE 501, ALD 603, CNS 604, and CNS 617. It is important to note that, in accordance with CACREP accreditation, students are evaluated throughout the program on their academic performance as well as their personal and professional development, which includes mental and emotional wellness. There also are courses in the program where students will be asked to engage in personal growth components that involve self-disclosure.

To facilitate the admission process, it is strongly recommended that applicants use the online application system at www.csuohio.edu/admissions/gradForm.html. The processing time for paper application forms is longer.

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Non-Degree Graduate Status

All non-degree graduate students must complete an Application for Graduate Admission and meet all admissions requirements. Admission as a non-degree student is not the same as admission to the counseling program. Non-degree students may enroll in EDB 601, ETE 501, ALD 603, CNS 604, CNS 611, and CNS 617. Once these courses have been completed, non-degree students must apply to the degree program through the Graduate Admissions Office before taking more classes.

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Transferring Credit

Up to nine hours of credit may be transferred into the program from another university with appropriate documentation (transcript and college catalog course description) and advisor approval as long as those courses were not used toward a degree already earned. Transcript credit forms are available from the Education Student Services Center (Rhodes Tower 1401).

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Clinical and Field-Based Experience

There are two separate clinical, field-based courses. The first is CNS 680, Counseling Practicum. This is a one-semester course requiring 100 hours of clinical field experience. Counseling Practicum is offered in the fall and spring semesters. The second clinical, field-based experience is the two-part Internship in Agency Counseling (CNS 686 and CNS 687). This is an intensive, two-consecutive-semester learning experience of supervised counseling in an agency setting. Internship is offered as a fall-spring sequence only. Prerequisites for Practicum and Internship are listed under the course descriptions in this Catalog. Counseling faculty strictly adhere to prerequisites.

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Eligibility for Counseling Practicum (CNS 680)

Students plan their programs so they can apply for practicum two semesters in advance of the term in which they wish to take it. Applications are available in the CASAL Department office, Rhodes Tower 1419. In addition to the application, there is a mandatory practicum-orientation meeting. Applicants for practicum will be notified of the meeting date and time after they turn in their practicum applications to their advisors. To be eligible to register for practicum, students must have passed the following courses: CNS 617, CNS 620, CNS 622, CNS 623, CNS 624, and CNS 629.

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Eligibility for Agency Counseling Internship (CNS 686 and CNS 687)

Students plan their programs so they can apply for internship two semesters in advance of the term in which they wish to take it. Applications are available in the CASAL Department office, Rhodes Tower 1419. In addition to successful completion of the practicum (CNS 680) and all practicum prerequisites, to be eligible for internship students must have passed CNS 706.

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Sequence

CNS 620 Laboratory in Counseling Techniques is the first course taken in the professional counselor education sequence. Other counselor education professional courses may be taken simultaneously, but not before completing this course. If CNS 620 has not been completed, other courses that may be taken concurrently are: EDB 601, ALD 603, CNS 604, CNS 611, and CNS 617. Once CNS 620 has been completed, students may take courses other than those listed above. However, students are responsible for knowing the pre-requisites for each course listed in the course descriptions in this Catalog.

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Program of Study

(60 credits)

Research in Behavioral Sciences

EDB 601 Educational Research (three credits)

ETE 501 Technology Strand (two credits)

Cultural Foundations and Social Issues

CNS 604 Cultural and Social Foundations in Counseling (two credits)

CNS 617 Ethical and Legal Issues in Counseling (three credits)

Human Development

ALD 603 Lifespan Development (three credits)

Screening Course

CNS 620 Laboratory in Counseling Techniques (three credits)—first course to be taken after acceptance into the Counseling Program

Agency Practice

CNS 629 Community Agency Counseling (three credits)

Individual Counseling

CNS 622 Individual Counseling: Theory and Process (three credits)

Group Process

CNS 623 Group Process and Practice (three credits)

Note: Active involvement in a personal growth group is usually a required part of this course.

Assessment

CNS 611 Appraisal in Counseling (two credits)

At least one of the following:

CNS 701 Assessment for Counselors (three credits)

CNS 702 Individual Intelligence Testing (three credits)

CNS 703 Personality Assessment for Counselors (three credits)

Intervention and Prevention of Mental and Emotional Disorders

CNS 650 Case Studies and Interventions (three credits)

Psychopathology and Personality

CNS 712 Theories of Personality and Counseling (four credits)

Diagnosis of Mental and Emotional Disorders

CNS 706 Psychopathology and Diagnosis for Counselors (three credits)

Career Development

CNS 624 Career Development and Information Services (three credits)

Treatment of Mental and Emotional Disorders

CNS 709 Psychopharmacology for Counselors (three credits)

Clinical and Field-Based Experience

CNS 680 Counseling Practicum (one semester, three credits)

CNS 686 Internship in Community Agency Counseling (three credits)

CNS 687 Advanced Internship in Community Agency Counseling (three credits)

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Elective Credits

The remaining five credits are elective. Students pursuing PCC licensure in Ohio should fulfill these five elective credits with courses from the clinical course-work offerings in counseling. These are listed on the department web site at www.csuohio.edu/casal/commagohio.html.

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Exit Requirements

A culminating activity is required of all students. Most students choose to take the Comprehensive Examination. It is normally completed during the last semester in which the student is taking course work. Comprehensives are scheduled for the College once each

academic semester, usually on the fourth or fifth **weekend**. Other options include a thesis or project. Details of these options are outlined in the department handbook. Students who fail the comprehensive exam may retake it one time.

For further information about the Counselor Education Program, contact the Department of CASAL at (216) 687-4613 or go to the department web site at www.csuohio.edu/casal.

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Adult Learning and Development Program

35-36 credit hours leading to the Master of Education degree

Introduction

Learning is a life-long process. Today's rapidly changing and technological world requires adults to learn new ways of doing their jobs or to change careers several times throughout their lives. This new reality requires adults to return to educational institutions for classes, to partake in on-the-job training and development courses, and to attend continuing professional education seminars in order to achieve new career goals. The influx of adult learners into adult education venues has resulted in a demand for qualified adult educators to assist adult learners as they cope with the effects of an ever-changing world.

Adult educators are employed to plan, teach, administer, coordinate, and evaluate programs for adult learners. They may work in many different types of organizations, such as higher education, business and industry, labor unions, GED/ABLE programs, cooperative extension services, community agencies, professional **continuing education** programs, museums, health education centers, hospitals, libraries, and correctional institutions.

The purpose of this program is to prepare present and future adult educators with the theories, competencies, and knowledge that will help them plan, teach, and administer programs for a diverse population of adult learners in a variety of settings. The M.Ed. program is committed to providing adult educators with a cognizance of the issues and challenges confronting adult educators in diverse learning environments. Theories, philosophies, history, and practices concerning adult learning and development, teaching adult learners, and program planning and administration are emphasized through a variety of courses throughout the program. Students also gain practical experience through participation in internships.

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Program of Study

College Core

(12 credits)

Educational Research and Technology

EDB 601 Educational Research (three credits)

ETE 501 Technology Strand (two credits)

Social Foundations

ALD 607 Adult Education in a Changing Society (four credits)

Psychological Foundations

ALD 605 Psychology of the Adult Learner (three credits)

Adult Learning and Development Concentration

(eight credits)

ALD 645 Organizational Behavior and Change (four credits)

ALD 663 Planning and Implementing Programs for Adult Learners (four credits)

Internship

(four credits)

ALD 688 Internship in Adult Learning and Development (four credits)

Goal-Directed Electives

(11-12 credits)

Each student selects 11-12 credit hours of study from the courses listed below, or from other courses after discussion of career goals with a faculty advisor:

ALD 603 Lifespan Development (three credits)

ALD 606 Modern Higher Education in a Changing Society (four credits)

ALD 631 Group Dynamics for Educational Leadership (four credits)

ALD 646 Human Resource Development for Adult Educators (four credits)

ALD 664 Instructional Principles for Adult Learners (four credits)

ALD 665 Student Personnel Services in Higher Education (four credits)

ALD 679 Planning, Marketing, and Budgeting in Nonprofit Organizations (four credits)

ALD 689 ALD Portfolio Development (four credits)

ALD 700 Issues in Multicultural Foundations of Urban Adult Education (four credits)

CNS 622 Individual Counseling: Theory and Process (three credits)

CNS 624 Career Development and Information Services (three credits)

EDB 711 Educational Evaluation and Innovation (four credits)

Culminating Activity

Select one of these options: comprehensive examination, project, thesis, or portfolio development (ALD 689).

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Supervision Program

32 credit hours leading to the Master of Education degree

Introduction

The Cleveland State University educational administration and supervision program is based on a conceptual framework of the Administrator/Supervisor as a Visionary Practitioner. Graduates achieve outcomes reflecting the five knowledge bases that compose this model: organizational change, relational, developmental, contextual, and ethical. These

knowledge bases are applied to the programs within the environments of urban and suburban schools, which are culturally diverse and include students with disabilities.

The purpose of this program is to prepare department chairs, team leaders, principals, and student-teaching supervisors to develop knowledge and competence in supervising adults and administering material resources to achieve the school's instructional ends. The program emphasizes curriculum development and assessment, instructional support for teachers, analysis of effective teaching, in-service program design, leadership, group dynamics, and change strategies.

Graduates of the program may be eligible for licensure as Administrative Specialists in Curriculum, Supervision, and Professional Development.

The recently revised regulations governing licensing of school administrative personnel in the State of Ohio may change course requirements. Please contact the Department of Counseling, Administration, Supervision, and Adult Learning (CASAL) at (216) 687-4613 for further information.

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Program of Study

College Core

(11 credits)

Educational Research and Technology

EDB 601 Educational Research (three credits)

ETE 501 Technology Strand (two credits)

Social Foundations

Select one of the following courses:

EDB 604 Social Issues and Education (three credits)

EDB 606 Philosophy of Education (three credits)

EDB 608 School and Society in the American Past (three credits)

EDB 609 Comparative and International Education (three credits)

Human Development

Select one of the following courses:

EDC 501 Child Development (three credits)

EDB 620 Psychology of the Adolescent Learner (three credits)

EDB 628 Psychology of Learning and Instruction (three credits)

Supervision Program Requirements

(21 credits)

EDB 612 Curriculum Theory and Instruction (three credits)

ADM 613 School Law (four credits)

ADM 615 Instructional Leadership and Pupil Personnel Administration (four credits)

ADM 618 Staff Personnel Administration (two credits)

ADM 676 Clinical Supervision and Professional Development (four credits)

ADM 680 Supervision Practicum (two semesters, two credits per semester) Application and permission required before registration.

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Exit Requirements

Select one of the three options:

Comprehensive examination, project, or thesis.

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Sports Management

34 credit hours leading to the Master of Education degree

Introduction

In this program, students develop skills to organize and administer a variety of programs from professional and amateur sport to physical and recreation programs. These programs are in demand in a number of settings, including private, public, corporate, agency, and community facilities and organizations.

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Program of Study

College Core

(13 credits)

ETE 501 Technology Strand (two credits)

HPR 601 Research Methods in Health and Human Performance (four credits)

HPR 606 Human Development (three credits)

PED 565 Law and Policy Studies in Sport and Physical Education (four credits)

Specialization

(21 credits)

Required:

PED 560 Program Development and Management (four credits)

PED 566 Sport Facility Management (three credits)

PED 567 Sports Marketing (three credits)

HPR 682 Practicum (five credits)

Electives. Select two of the following courses:

PED 551 Applied Sport Psychology (three credits)

PED 554 Sport Sociology (three credits)

PED 561 Sport Governance (three credits)

PED 570 Seminar in Training and Conditioning (three credits)

PED 571 Biomechanics of Sport and Fundamental Skills (three credits)

ACT 501 Financial Accounting (three credits)*

ECN 503 Economic Concepts (three credits)**

MLR 501 Management and Organizational Behavior (three credits)*

* See the College of Business Course Descriptions section of this Catalog for information.

** See the M.A. in Economics section of this Catalog for information.

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Culminating Activity

Select one of three options: comprehensive examination, project, or thesis.

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Sports Management/Sport and Exercise Psychology

33-34 credit hours leading to the Master of Education degree

Introduction

This program is a combination of sports management and sport and exercise psychology. In this program, students develop skills in organizing and administering a variety of sport programs (recreational, amateur, and professional sport). They also acquire the knowledge and skills needed to apply performance enhancement strategies in sport and/or exercise settings to assist participants in reaching their potential and learn strategies for effective leadership and for managing group dynamics. Students seeking careers in sports management, recreation, coaching, or athletic administration will benefit from this program.

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Program of Study

College Core

(13 credits)

ETE 501 Technology Strand (two credits)

HPR 601 Research Methods in Health and Human Performance (four credits)

HPR 606 Human Development (three credits)

PED 565 Law and Policy Studies in Sport and Physical Education (four credits)

Specialization

(20-21 credits)

Required:

PED 550 Psychology of Sport and Exercise (four credits)

PED 551 Applied Sport Psychology (three credits)

PED 554 Sport Sociology (three credits)

PED 560 Program Development and Management (four credits)

HPR 680 Practicum (three credits)

Elective. Select one of the following courses:

(three to four credits)

PED 566 Sport Facility Management (three credits)

PED 561 Sport Governance (three credits)

PED 567 Sports Marketing (three credits)

PED 570 Seminar in Training and Conditioning (three credits)

HED 574 Stress Management (three credits)

HED 575 Nutrition and Physical Activity (three credits)

ALD 631 Group Dynamics for Education Leadership (four credits)

ALD 645 Organizational Behavior and Change (four credits)

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Culminating Activity

Select one of three options: comprehensive examination, project, or thesis.

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Exercise Science

34 credit hours leading to the Master of Education degree

Introduction

In this program students develop skills to organize and lead exercise programs in a variety of settings, including cardiac rehabilitation centers, corporate- and hospital-based wellness programs, and private physical fitness enterprises. The primary focus of study is exercise physiology and its applications to physical activity programs.

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Program of Study

College Core

(13 hours)

ETE 501 Technology Strand (two credits)

HPR 601 Research Methods in Health and Human Performance (four credits)

HPR 606 Human Development (three credits) or PED 572 Physiology of Aging (three credits)

PED 565 Law and Policy Studies in Sport and Physical Education (four credits)

Specialization

(21 credits)

Required:

PED 570 Seminar in Training and Conditioning (three credits)

PED 675 Physiology of Human Performance I (four credits) (Prerequisites: Courses in human anatomy and physiology, or equivalents)

PED 676 Physiology of Human Performance II (four credits) (Prerequisite: PED 675)

HED 575 Nutrition and Physical Activity (three credits)

HPR 680 or HPR 681 Practicum (three or four credits) (register for four credits if elective totals three)

Elective. Select one of the following courses:

(three to four credits):

PED 550 Psychology of Sport and Exercise (four credits)

PED 551 Applied Sport Psychology (three credits)

PED 560 Program Development and Management (four credits)

PED 571 Biomechanics of Sport and Fundamental Skills (three credits)

PED 572 Physiology of Aging (three credits) (if not taken as a requirement)

PED 677 Prevention and Rehabilitation of Cardiovascular Disease (three credits)

HED 570 Pathophysiology of Disease (four credits)

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Culminating Activity

Select one of three options: comprehensive examination, project, or thesis.

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Sports Management/Exercise Science (Combined)

45 credit hours leading to the Master of Education degree

Introduction

This specialization offers a combination of the Sports Management and Exercise Science programs described above. Students completing this combined program are prepared to organize, administer, understand, and design exercise programs for physical fitness-related environments. Students who wish to administer programs and manage facilities in a fitness, conditioning, or wellness setting should consider this program.

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Program of Study

College Core

(13 credits)

ETE 501 Technology Strand (two credits)

HPR 601 Research Methods in Health and Human Performance (four credits)

HPR 606 Human Development (three credits)

PED 565 Law and Policy Studies in Sport and Physical Education (four credits)

Specialization

(32 credits)

Required:

PED 560 Program Development and Management (four credits)

PED 566 Sport Facility Management (three credits)

PED 675 Physiology of Human Performance I (four credits) (Prerequisites: Courses in human anatomy and physiology, or equivalents)

PED 676 Physiology of Human Performance II (four credits) (Prerequisite: PED 675)

HPR 681 or HPR 682 Practicum (four or five credits) (register for five credits if electives total 12)

Electives. Select at least two courses in each area:

(12 to 13 credits)

Exercise Science Courses

PED 570 Seminar in Training and Conditioning (three credits)

PED 571 Biomechanics of Sport and Fundamental Skills (three credits)

PED 572 Physiology of Aging (three credits)

PED 677 Prevention and Rehabilitation of Cardiovascular Disease (three credits)

HED 570 Pathophysiology of Disease (four credits)

HED 575 Nutrition and Physical Activity (three credits)

Sports Management Courses

PED 551 Applied Sport Psychology (three credits)

PED 554 Sport Sociology (three credits)

PED 561 Sport Governance (three credits)

PED 567 Sports Marketing (three credits)

ACT 501 Financial Accounting (three credits)*

ECN 503 Economic Concepts (three credits)**

MLR 501 Management and Organizational Behavior (three credits)*

* See the College of Business Course Descriptions section of this Catalog for information.

** See the M.A. in Economics section of this Catalog for information.

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Culminating Activity

Select one of three options: comprehensive examination, project, or thesis.

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Community Health Education Program

34 credit hours leading to the Master of Education degree

Introduction

This program provides a multidisciplinary approach for professionals interested in careers in community health education or in the private health care sector. A variety of undergraduate majors (e.g., nursing, gerontology, health education, sociology, psychology, allied health, physical education) may prepare students for employment opportunities in this professional field. A background in anatomy, physiology, and general health is required.

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Program of Study

College Core

(10 credits)

ETE 501 Technology Strand (two credits)

HED 550 Theories in Health Education and Health Behavior (four credits)

HPR 601 Research Methods in Health and Human Performance (four credits)

Specialization

(24 credits)

HED 551 Organization and Administration of Community Health Education Programs (four credits)

HED 552 Health Education Program Planning (three credits)

HED 553 Measurement and Evaluation of Health Education Programs (three credits)

HPR 681 or HPR 682 Practicum (four or five credits) (register for five credits if elective credit total is nine)

Electives. Select three of the following courses:

(9 to 10 credits)

HED 561 Methods and Materials for Health Education (three credits) (Prerequisite: HED 551, or HED 560, or equivalent)

HED 565 Analyzing Health Data for Grant Writing (three credits)

HED 570 Pathophysiology of Disease (four credits)

HED 571 Substance Abuse Education (three credits)

HED 572 Consumer Health (three credits)

HED 573 Teaching Human Sexuality (three credits)

HED 574 Stress Management (three credits)

HED 575 Nutrition and Physical Activity (three credits)

HPR 606 Human Development (three credits)

PED 677 Prevention and Rehabilitation of Cardiovascular Disease (three credits)

EDB 612 Curriculum Theory and Instruction (three credits)

HCA 510 Administrative Uses of Epidemiology (three credits)*

HCA 515 Medical Care Organization (three credits)*

HCA 640 Health Care Law (three credits)*

Other approved course (three to four credits)

*See College of Business Course Descriptions section of this Catalog for information.

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Culminating Activity

Select one of three options: comprehensive examination, project, or thesis.

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School Nurse Licensure Program (See Addenda - July 15, 2005)

The Department of Health, Physical Education, Recreation, and Dance (HPERD) offers courses leading to Ohio licensure for school nurses (web site: www.csuohio.edu/healthed). The student shall be recommended for the licensure provided that he or she: 1) holds a current license to practice as a Registered Nurse (RN) in the State of Ohio, 2) has obtained a bachelor's degree from an approved college or university, and 3) has completed course work preparation for this licensure that conforms to the requirements listed.

Students should apply for graduate admission as a licensure student to register for courses. Upon completion of these courses, students must apply for licensure through the Education Student Services Center of the College of Education and Human Services [Rhodes Tower 1401, telephone (216) 687-4625]. An overall **grade-point** average of 2.50 must be maintained throughout the program.

Course requirements are based on the National School Nurse Roles and Standards. Course work (26 to 28 credits minimum) must be distributed in the following areas:

[Comprehensive School Health Program](#)

HED 560 Foundations of a Coordinated School Health Program (four credits)

NUR 550 Legal Issues in School Nursing (two or three credits)*

[Comprehensive School Health Education Delivery](#)

HED 561 Methods and Materials for Health Education (three credits) (Prerequisite: HED 551 or HED 560, or equivalent)

[Children with Special Needs and School Assessment](#)

NUR 530 Health Assessment Strategies of the School-Aged Child: Strategies for Nursing Practice (two credits)*

NUR 532 Health Assessment of the School-Aged Child: Strategies for Nursing Practice Laboratory (one credit)*

[Community Health Collaboration](#)

HED 551 Organization and Administration of Community Health Programs (four credits)

[Research](#)

NUR 360 Nursing Research (two credits)

Elective (two credits) Based on individual needs following transcript review.

[Practicum for School Nurses](#)

HPR 679, HPR 680, or HPR 681 Practicum (two, three, or four credits, respectively). Clinical and field-based experiences, including a practicum for at least 10 weeks, to ensure proficiency in performing the duties of a school nurse. School nurses with two years of full-time experience can complete two credits; all others must complete three or four credits. At least two-thirds of the course work must be completed. Includes a seminar and the development of a professional portfolio.

* See the M.S. in Nursing section of this Catalog for information.

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Curriculum and Instruction Programs

[Leading to the Master of Education degree](#)

Introduction

The program in Curriculum and Instruction is designed for teachers at all levels who wish to further develop their pedagogical expertise and improve their skills in educationally related disciplines. The College of Education and Human Services conceptual model for Teacher

Education is the Teacher as a Responsive, Reflective Professional: A Partner in Learning. Cleveland State University teacher education graduates are known for distinctive abilities that reflect the four knowledge bases that compose this model: inquiry, partnership, contextualism, and professionalism.

All Curriculum and Instruction programs require the College Core courses, a Curriculum and Instruction core, and an area of specialization. The following specializations currently are available in the Curriculum and Instruction program:

- Educational Technology
- Early Childhood Education
- Elementary Education
- Educational Research
- Gifted and Talented Learners
- Health and Physical Education
- Literacy Development and Instruction (Reading, TESOL, Adult Literacy)
- Secondary Education (all content fields, including Art, English, Social Sciences, Modern Languages, Mathematics, and Science)
- Urban Secondary Teaching (14-month master's program)
- Special Education: Early Childhood Intervention Specialist, Mild/Moderate Intervention Specialist, and Moderate/Intensive Intervention Specialist.

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Educational Technology

(33 credits)

Purpose

This specialization is for educators who wish to develop and enhance their ability to use computers and related informational technologies in a regular classroom setting. Students explore the use of a variety of hardware and software in the K-12 setting, including the use of distance education technologies (both web-based and video). For students certified or licensed as classroom teachers in Ohio, this program also grants the Ohio computer/technology teaching endorsement.

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Program of Study

College Core

(11 credits)

Educational Research and Technology

EDB 601 Educational Research (three credits)

ETE 501 Technology Strand (two credits)

Social Foundations

Select one of the following courses:

EDB 604 Social Issues and Education (three credits)

EDB 606 Philosophy of Education (three credits)

EDB 608 School and Society in the American Past (three credits)

EDB 609 Comparative and International Education (three credits)

Human Development

Select one of the following courses:

EDC 501 Child Development (three credits)

EDB 620 Psychology of the Adolescent Learner (three credits)

EDB 628 Psychology of Learning and Instruction (three credits)

Curriculum and Instruction Core

(three credits)

EDB 612 Curriculum Theory and Instruction (three credits)

Specialization

(19 credits)

ETE 565 Technology in the Classroom (four credits)

ETE 566 Technological Change and Schools (four credits)

ETE 567 Telecommunications in Education (four credits)

ETE 568 Programming the Computer (four credits)

ETE 595 Seminar in Computer Uses in Education (three credits)

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Culminating Activity

Select one of three options: comprehensive examination, project, or thesis.

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Early Childhood Education

(39 credits)

Purpose

This specialization provides advanced study in the field of early childhood education and includes University and field-based experiences, which focus on the development and education of children from ages three to eight, including typically developing children and those with mild and moderate disabilities.

While primarily intended to meet the professional development needs of practicing early childhood educators, a qualified applicant who possesses a baccalaureate degree in another

teaching field or related discipline may apply required course work toward a provisional teaching license in early childhood. Eligibility for these credentials demands further study beyond course work needed for the master's degree as well as successful completion of any Praxis II examinations required by the State of Ohio.

Built around a common College Core, specialized course work in early childhood education is integrated with required offerings in educational research, social foundations, and human development as outlined below. Taken as a whole, the curriculum focuses on the development of practices associated with high-quality early childhood education for young children representing diverse cultures and abilities. These practices respect all children and provide them with equal opportunity to develop and grow emotionally, socially, physically, and intellectually.

For further information, contact the Department of Teacher Education at (216) 687-4600.

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Program of Study

College Core

(11 credits)

Educational Research and Technology

EDB 601 Educational Research (three credits)

ETE 501 Technology Strand (two credits)

Social Foundations

Select one of the following courses:

EDB 604 Social Issues and Education (three credits)

EDB 606 Philosophy of Education (three credits)

EDB 608 School and Society in the American Past (three credits)

EDB 609 Comparative and International Education (three credits)

Human Development

EDC 501 Child Development (three credits)

Note: ECE 511 may be substituted for EDC 501, with advisor permission, by students who have completed an equivalent course.

Specialization

(28 credits)

ECE 500 Foundations of Early Childhood Education (four credits)

ECE 501 Developmental Curriculum for Early Childhood Education (four credits)

ECE 502 Teaching Methods in Early Childhood Education (four credits)

ECE 503 Teaching Children with Mild and Moderate Disabilities (three credits)

ECE 695 Seminar in Early Childhood Education (four credits)

EDC 500 Diversity in Educational Settings (three credits)

EST 570 Practicum in Early Childhood Education (three credits)

Elective (three credits minimum, selected with advisor)

The additional courses listed below represent those required to attain an Early Childhood Education license as a first teaching credential at the graduate level.

ECE 512 Collaboration with Families and Professionals in Early Childhood Settings (four credits)

ECE 514 Expressive Arts in Early Childhood Education (three credits)

ECE 515 Mathematics Instruction and Assessment in Preschool and the Primary Grades (three credits)

ECE 516 Social Studies Instruction and Assessment in Preschool and the Primary Grades (three credits)

ECE 517 Science Instruction and Assessment in Preschool and the Primary Grades (three credits)

EDL 500 Phonics Assessment and Instruction (three credits)

EDL 501 Beginning and Intermediate Reading Instruction and Assessment (three credits)

EDL 511 Emergent Literacy (three credits)

EDL 512 Literature-based Reading Methods for Children (three credits)

ESE 515 Assessing Young Children (four credits)

EST 580 Student Teaching in Early Childhood Education (four credits)

PED 316 Health and Physical Education for Classroom Teachers (three credits)

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Exit Requirement

Select one of four options: comprehensive examination, project, advocacy or action research project (ECE 695), or thesis.

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Elementary Education

(33 credits)

Purpose

Designed to provide continued professional development to experienced teachers, the elementary education specialization is intended for individuals who wish to extend their understanding of teaching-learning processes and the situational contexts in which they occur. This specialization offers opportunity for the in-depth study of current theory, research, and practice, particularly related to the design and delivery of effective instruction in the primary and upper elementary or middle school grades. While built around a common College Core, degree requirements are sufficiently flexible to allow for individual needs and interests. For

example, students may use elective hours to expand their knowledge of one or more academic disciplines in the elementary curriculum; investigate new teaching methods and technologies; explore the educational needs of a particular age range or group of learners; or expand their understanding of the cognitive, affective, social, cultural, and motivational dimensions of learning. Students also may develop further skills to assume greater leadership roles in the planning, delivery, management, and evaluation of instructional programs.

For further information, contact the Department of Teacher Education at (216) 687-4600.

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Program of Study

College Core

(11 credits)

Educational Research and Technology

EDB 601 Educational Research (three credits)

ETE 501 Technology Strand (two credits)

Social Foundations

Select one of the following courses:

EDB 604 Social Issues and Education (three credits)

EDB 606 Philosophy of Education (three credits)

EDB 608 School and Society in the American Past (three credits)

EDB 609 Comparative and International Education (three credits)

Human Development

Select one of the following courses:

EDC 501 Child Development (three credits)

EDB 628 Psychology of Learning and Instruction (three credits)

Curriculum and Instruction Core

(three credits)

EDB 612 Curriculum Theory and Instruction (three credits)

Specialization

(19 credits)

EDC 500 Diversity in Educational Settings (three credits)

Select one of the following courses:

EDC 512 Instructional Development in Foreign Language Education (four credits)

EDC 513 Instructional Development in English Language Arts Education (four credits)

EDC 514 Instructional Development in Art Education (four credits)

EDC 515 Instructional Development in Mathematics Education (four credits)

EDC 516 Instructional Development in Social Studies Education (four credits)

EDC 517 Instructional Development in Science Education (four credits)

Electives:

(12 credits minimum, selected with advisor)

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Exit Requirement

Select one of three options: comprehensive examination, project, or thesis.

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Educational Research

[\(32 credits\)](#)

Purpose

The Educational Research specialization is designed for educators who wish to pursue educational issues as a field of inquiry. It permits students to select either a statistical or qualitative approach to problem solving and decision making. The culminating activity in this program is a thesis or project. Thus, it may be an ideal choice for students who intend to pursue doctoral work in curriculum, instruction, or educational foundations.

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Program of Study

College Core

(11 credits)

Educational Research and Technology

EDB 601 Educational Research (three credits)

ETE 501 Technology Strand (two credits)

Social Foundations

Select one of the following courses:

EDB 604 Social Issues and Education (three credits)

EDB 606 Philosophy of Education (three credits)

EDB 608 School and Society in the American Past (three credits)

EDB 609 Comparative and International Education (three credits)

Human Development

Select one of the following courses:

EDC 501 Child Development (three credits)

EDB 620 Psychology of the Adolescent Learner (three credits)

EDB 628 Psychology of Learning and Instruction (three credits)

Curriculum and Instruction Core

(three credits)

EDB 612 Curriculum Theory and Instruction (three credits)

Specialization

(12 credits)

EDB 701 Advanced Educational Research (four credits)

EDB 711 Educational Evaluation and Innovation (four credits)

EDU 715 Applied Programming and Data Analysis with Statistical Packages (four credits)

Culminating Activity

(six credits)

EDB 698 Project or EDB 699 Thesis

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Gifted and Talented Learners (See Addenda - July 15, 2005)

(33 credits)

Purpose

The program is designed for previously certified teachers seeking licensure as intervention specialists who teach gifted and talented learners. The multi-dimensional program provides training in meeting the needs of a broad range of gifted learners, including culturally diverse children, females, disabled youngsters, those with special talents, and underachievers. The program provides opportunities for individuals with an interest in this expanding field to refine and develop professional knowledge and skills.

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Program of Study

College Core

(12 credits)

Educational Research and Technology

EDB 601 Educational Research (three credits)

ETE 501 Technology Strand (two credits)

Social Foundations

Select one of the following courses:

EDB 604 Social Issues and Education (three credits)

EDB 606 Philosophy of Education (three credits)

EDB 608 School and Society in the American Past (three credits)

EDB 609 Comparative and International Education (three credits)

[Human Development](#)

EGT 512 Nature and Developmental Needs of Learners with Gifts and Talents (four credits)

[Curriculum and Instruction Core](#)

(three credits)

EDB 612 Curriculum Theory and Instruction (three credits)

[Specialization](#)

(18 credits)

EGT 513 Curriculum, Teaching Strategies, and Evaluation for Learners with Gifts and Talents (four credits)

EGT 517 Creativity, Inquiry, and Productive Thinking (four credits)

EGT 518 [Working with Students with](#) Gifts and Talents, Their Families, and Other Professionals (three credits)

EGT 519 Using Computers with Students with Gifts and Talents (three credits)

EGT 580 Practicum in Gifted and Talented Education (four credits)

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[Culminating Activity](#)

Select one of three options: comprehensive examination, project, or thesis.

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Health and Physical Education

[\(32 to 35 credits\)](#)

Purpose

The program is designed for health and physical education teachers and coaches in school settings. Focus is placed on instructional development as well as advanced knowledge and skills in general educational principles. A curricular area of specialization is pursued to increase awareness and understanding of current educational trends and issues. The areas of specialization are human performance, school health and exercise psychology, sport and exercise psychology, or physical education pedagogy.

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Program of Study

College Core

(12 to 13 credits)

Educational Research and Technology

HPR 601 Research Methods in Health and Human Performance (four credits)

ETE 501 Technology Strand (two credits)

Social Foundations

Select one of the following courses:

EDB 604 Social Issues and Education (three credits)

EDB 606 Philosophy of Education (three credits)

EDB 608 School and Society in the American Past (three credits)

EDB 609 Comparative and International Education (three credits)

Human Development

For human performance, sport and exercise psychology, and physical education pedagogy areas of

specialization:

HPR 606 Human Development (three credits)

For school health education area of specialization:

HED 550 Theories in Health Education and Health Behavior (four credits)

Curriculum and Instruction Core

(three credits)

EDB 612 Curriculum Theory and Instruction (three credits)

Areas of Specialization

Select one specialization

Human Performance

(18 to 19 credits)

Select five of the following courses:

PED 565 Law and Policy Studies in Sport and Physical Education (four credits)

PED 570 Seminar in Training and Conditioning (three credits)

PED 571 Biomechanics of Sport and Fundamental Skills (three credits)

PED 572 Physiology of Aging (three credits)

PED 675 Physiology of Human Performance I (four credits) (Prerequisites: Courses in human anatomy and physiology, or equivalents)

PED 676 Physiology of Human Performance II (four credits) (Prerequisite: PED 675)

PED 677 Prevention and Rehabilitation of Cardiovascular Disease (three credits)

HED 570 Pathophysiology of Disease (four credits)

School Health Education

(16 to 18 credits)

HED 552 Health Education Program Planning (three credits)

HED 553 Measurement and Evaluation of Health Education Programs (three credits)

HED 560 Foundations of a Coordinated School Health Program (four credits)

Electives. Select two of the following courses:

HED 561 Methods and Materials for Health Education (three credits) (Prerequisite: HED 551 or HED 560, or equivalent)

HED 565 Analyzing Health Data for Grant Writing (three credits)

HED 570 Pathophysiology of Disease (four credits)

HED 571 Substance Abuse Education (three credits)

HED 572 Consumer Health (three credits)

HED 573 Teaching Human Sexuality (three credits)

HED 574 Stress Management (three credits)

HED 575 Nutrition and Physical Activity (three credits)

HPR 606 Human Development (three credits)

PED 677 Prevention and Rehabilitation of Cardiovascular Disease (three credits)

Other approved course (three to four credits)

Sport and Exercise Psychology

(18 to 20 credits)

PED 550 Psychology of Sport and Exercise (four credits)

PED 551 Applied Sport Psychology (three credits)

PED 554 Sport Sociology (three credits)

Electives. Select two or three of the following courses:

PED 565 Law and Policy Studies in Sport and Physical Education (four credits)

PED 570 Seminar in Training and Conditioning (three credits)

HED 574 Stress Management (three credits)

HED 575 Nutrition and Physical Activity (three credits)

EDB 620 Psychology of the Adolescent Learner (three credits)

ALD 605 Psychology of the Adult Learner (three credits)

ALD 631 Group Dynamics for Educational Leadership (four credits)

ALD 645 Organizational Behavior and Change (four credits)

Physical Education Pedagogy

(18 to 21 credits)

Select six of the following courses:

PED 556 Individualized Physical Education for Children with Special Needs (three credits)

PED 565 Law and Policy Studies in Sport and Physical Education (four credits)

PED 571 Biomechanics of Sport and Fundamental Skills (three credits)

PED 652 Curriculum in Physical Education (three credits)

PED 653 Teacher Behavior Analysis (three credits)

PED 657 Principles of Motor Learning (three credits)

PED 658 Seminar in Motor Programming for Special Populations (three credits)

HPR 550 Computer Applications in Health and Physical Education (three credits)

EDB 628 Psychology of Learning and Instruction (three credits)

EDB 675 Productive School and Classroom Discipline (three credits)

ESE 511 Class Management and Intervention for Severe Behavior Problems (four credits)

Other approved course (three to four credits)

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Exit Requirement

Select one of three options: comprehensive examination, project, or thesis.

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Literacy Development and Instruction

(34 to 35 credits)

Purpose

The specialization in literacy development and instruction meets the needs of teachers, clinicians, and others who provide literacy-related services to children or adults. The program also is of interest to those who wish to study reading and writing as language processes. Within this program, the acquisition and development of literate behaviors are viewed as inherent components of language learning in general, including second-language acquisition.

A wide range of available course offerings makes this program an attractive choice for individuals with diverse interests and career goals. Students may pursue concentrations leading to endorsement in either Reading or Teaching English to Speakers of Other Languages

(TESOL) on an existing Ohio teaching license. A third concentration exists for non-school personnel with an interest in Adult Literacy.

In addition to completing all course work in the appropriate concentration, candidates for reading endorsement must pass the Praxis II Specialty Examination, Introduction to the Teaching of Reading. Similarly, candidates for TESOL endorsement must complete all course work in that concentration and pass the Praxis II Specialty Test, Teaching English to Speakers of Other Languages.

For further information, contact the Department of Teacher Education (216) 687-4600.

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Program of Study

College Core

(11 credits)

Educational Research and Technology

EDB 601 Educational Research (three credits)

ETE 501 Technology Strand (two credits)

Social Foundations

Select one of the following courses:

EDB 604 Social Issues and Education (three credits)

EDB 606 Philosophy of Education (three credits)

EDB 608 School and Society in the American Past (three credits)

EDB 609 Comparative and International Education (three credits)

Human Development

Select one of the following courses:

EDC 501 Child Development (three credits)

EDB 620 Psychology of the Adolescent Learner (three credits)

EDB 628 Psychology of Learning and Instruction (three credits)

ALD 605 Psychology of the Adult Learner (three credits)

Curriculum and Instruction Core

(three credits)

EDB 612 Curriculum Theory and Instruction (three credits)

Areas of Specialization

Select one specialization:

Reading Endorsement

(20 credits)

EDL 502 Foundations of Literacy: Theory and Practice (three credits)

EDL 503 Assessment and Evaluation of Diverse Literacy Learners (four credits)

EDL 504 Literacy Development: Meeting the Needs of Diverse Learners (four credits)

EDL 505 Content Area Literacy (three credits)

EDL 695 Seminar in Literacy Research (three credits)

Select one of the following courses:

EDL 511 Emergent Literacy (three credits)

EDL 512 Literature-based Reading Programs for Children (three credits)

EDL 513 Literature-based Reading Programs for Adolescents (three credits)

[Teaching English to Speakers of Other Languages \(TESOL\)](#)

(21 credits)

EDC 500 Diversity in Educational Settings (three credits)

EDL 506 Second Language Learning and Pedagogy (three credits)

EDL 507 TESOL Methods and Materials (three credits)

EDL 508 Applied Linguistics for Teachers (three credits)*

EDL 509 Assessment and Evaluation in the ESL/Bilingual Classroom (three credits)

EDL 510 Pedagogical Grammar (three credits)*

EST 573 Practicum in TESOL (three credits)

*Graduate-level linguistics course (three credits minimum, selected with advisor) can be used in place of EDL 508 or EDL 510

[Adult Literacy](#)

(20 credits)

EDL 502 Foundations of Literacy: Theory and Practice (three credits)

EDL 503 Assessment and Evaluation of Diverse Literacy Learners (four credits)

EDL 504 Literacy Development: Meeting the Needs of Diverse Learners (four credits)

EDL 505 Content Area Literacy (three credits)

EDL 514 Adult Literacy (three credits)

EDL 695 Seminar in Literacy Research (three credits)

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[Exit Requirement](#)

Select one of three options: comprehensive examination, project, or thesis.

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Secondary Education

(33 credits)

Purpose

The secondary education specialization is intended for experienced teachers who wish to extend their understanding of teaching-learning processes and the situational contexts in which they occur. The specialization offers considerable opportunities for the in-depth study of current theory, research, and practice particularly related to the design and delivery of effective instruction in grades seven through 12. While built around the College Core, degree requirements are sufficiently flexible to allow for individual needs and interests. For example, students may use elective hours in the professional specialization sequence to increase their knowledge in their academic discipline; investigate new teaching methods and technologies; or further explore the educational needs of a particular group of learners. Students also may choose to expand their understanding of the cognitive, affective, social, cultural, and motivational dimensions of learning, and/or develop additional skills needed to assume greater leadership roles in the planning, delivery, management, and evaluation of instructional programs.

For further information, contact the Department of Teacher Education at (216) 687-4600.

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Program of Studies

College Core

(11 credits)

Educational Research and Technology

EDB 601 Educational Research (three credits)

ETE 501 Technology Strand (two credits)

Social Foundations

Select one of the following courses:

EDB 604 Social Issues and Education (three credits)

EDB 606 Philosophy of Education (three credits)

EDB 608 School and Society in the American Past (three credits)

EDB 609 Comparative and International Education (three credits)

Human Development

Select one of the following courses:

EDB 620 Psychology of the Adolescent Learner (three credits)

EDB 628 Psychology of Learning and Instruction (three credits)

Curriculum and Instruction Core

(three credits)

EDB 612 Curriculum Theory and Instruction (three credits)

Specialization

(19 credits)

EDC 500 Diversity in Educational Settings (three credits)

Select one of the following courses:

EDC 512 Instructional Development in Foreign Language Education (four credits)

EDC 513 Instructional Development in English Language Arts Education (four credits)

EDC 514 Instructional Development in Art Education (four credits)

EDC 515 Instructional Development in Mathematics Education (four credits)

EDC 516 Instructional Development in Social Studies Education (four credits)

EDC 517 Instructional Development in Science Education (four credits)

Electives

Minimum of 12 credits, selected with advisor

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Exit Requirement

Select one of three options: comprehensive examination, project, or thesis.

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Curriculum and Instruction Urban Secondary Teaching (Initial Licensure)

[\(44 credit hours leading to the Master of Education degree\)](#)

Program Description

This program prepares individuals with bachelor's degrees to teach in urban secondary schools. This intensive, 14-month, full-time program engages a cohort of 25 students in school-based classes and classroom experiences, studying theory and developing essential practices within school settings. Through reflection, collaboration, fieldwork, and inquiry, students develop responsive teaching and classroom management strategies that enhance learning. Students construct a critical perspective of schooling by examining and addressing the effects of race, class, and gender on pedagogy and learning.

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Admission Information

1. Meet all [College of Graduate Studies](#) admission requirements noted in this Catalog.
2. Hold a bachelor's degree in mathematics, science, English, social studies, or a related field with above-average grades.

3. Commitment to a 14-month intensive program to include a nine-month, school-based internship.
4. Interest in working in an urban school environment.
5. No concurrent employment.
6. Agreement to complete an independent teacher research project.
7. Agreement to develop a professional teaching portfolio.
8. Agreement to participate in all cohort activities.
9. Three positive professional recommendations.

To facilitate the admission process, it is strongly recommended that applicants use the online application system at www.csuohio.edu/admissions/gradForm.html. The processing time for paper application forms is longer.

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Program of Study

EDB 502 Psychological Foundations of Education

EDB 505 Teaching and Management in the Secondary School

EDB 601 Educational Research (three credits)

ETE 501 Technology Strand (two credits)

ETE 565 Technology in the Classroom (four credits)

ESE 504 Teaching Students of Varying Abilities (three credits)

One of the following (all four-credit courses):

EDS 513 Secondary Language Arts Instruction and Assessment

EDS 515 Mathematics Education in the Secondary School

EDS 516 Social Studies Education in the Secondary School

EDS 517 Science Education in the Secondary School

Additional Courses (Required):

EDB 604 Social Issues and Education (three credits)

EDL 505 Content Area Literacy (three credits)

EST 572 Practicum in Secondary Education (three credits)

EST 582 Student Teaching in Secondary Education (10 credits)

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Exit Requirement

EDB 595 Seminar on Integrating Theory and Practice (two or three credits)

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Special Education

(37 to 41 credits)

Purpose

The program is designed to provide advanced course work in the education of learners with exceptional needs. Program options permit concentrated study in one of three areas: Early Childhood Special Education, Learners with Mild/Moderate Educational Needs, and Learners with Moderate/Intensive Educational Needs. While all three concentrations include course work and fieldwork that may be applied toward Ohio licensure as an Intervention Specialist, [eligibility](#) for such licensure may require further study depending on the student's previous educational background. In addition, students must successfully complete the appropriate Praxis II examinations required for licensure by the State of Ohio.

If courses were taken previously as part of a Cleveland State baccalaureate degree program, special education courses generally need not be repeated. However, students need to select appropriate graduate elective offerings in consultation with an academic advisor to make up the requisite number of credit hours for the desired concentration. The College of Education and Human Services is committed to preparing special educators to work within diverse educational settings and communities. Therefore, all three program options require that students have a working knowledge of issues related to the education of culturally and linguistically diverse students, gifted children, children with special needs, and gender issues in education. To that end, completion of [EDC 500 Diversity in Educational Settings](#), or its equivalent, is a prerequisite to enrollment in all special education offerings. Additionally, [ESE 500 Introduction to Special Education](#) is a prerequisite for all students seeking a first license as an Intervention Specialist and for all students certified or licensed in another teaching area.

The goal of the Early Childhood Intervention Specialist concentration is to prepare professionals to work with children from birth to age eight who have special needs. In addition to Ohio licensure as an Early Childhood Intervention Specialist, this concentration provides course work and fieldwork needed for the Mental Retardation/Developmental Disabilities (MR/DD) Early Intervention Certificate.

The concentration in Mild/Moderate Intervention Specialist trains teachers to develop, implement, and evaluate individualized programs for children and adolescents ages five through 21 who have special academic and social-adjustment needs. These individuals are typically categorized as having a specific learning disability, mild/moderate retardation, or mild/moderate behavioral disorders. The teacher who completes this concentration of study will demonstrate advanced diagnostic skills used in the assessment of academic and social needs. Emphasis is placed on the development and delivery of instruction in both regular and special education classrooms.

The Moderate/Intensive Intervention Specialist concentration prepares teachers and professionals from related disciplines to work with children and youth ages five through 21 who have moderate, severe, or profound mental retardation; severe emotional disorders; or multiple disabilities. The professional who completes this concentration will demonstrate advanced skills in curriculum design and implementation, interdisciplinary teaming, and working with parents of children with exceptional needs.

For further information, contact the Department of Teacher Education at (216) 687-4600.

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Program of Study

[College Core](#)

(11 credits)

Educational Research and Technology

EDB 601 Educational Research (three credits)

ETE 501 Technology Strand (two credits)

Social Foundations

Select one of the following courses:

EDB 604 Social Issues and Education (three credits)

EDB 606 Philosophy of Education (three credits)

EDB 608 School and Society in the American Past (three credits)

EDB 609 Comparative and International Education (three credits)

ECE 500 Foundations of Early Childhood Education (Early Childhood Special Education majors only) (four credits)

Human Development

EDC 501 Child Development (three credits)

Areas of Concentration

Select one concentration:

Early Childhood Intervention Specialist

(26 credits)

ESE 500 Introduction to Special Education (four credits)***

ESE 501 Nature and Needs of Young Children with Disabilities and Those at Risk (four credits)**

ESE 512 Collaboration and Partnerships among Parents and Professionals in Special Education (four credits)

ESE 513 Supporting Medical and Intensive Educational Needs (four credits)

ESE 514 Curriculum and Interventions for Infants and Young Children with Special Needs (four credits)

ESE 515 Assessing Young Children (four credits)

EST 576 Practicum in Early Childhood-Special Education (two credits)

EST 586 Student Teaching in Early Childhood-Special Education (four credits)

The additional courses listed below represent those required to attain an Early Childhood Intervention Specialist license as a first teaching credential at the graduate level.

EDL 500 Phonics Assessment and Instruction (three credits)

EDL 501 Beginning and Intermediate Reading Instruction and Assessment (three credits)

EDL 505 Content Area Literacy (three credits)

EDL 512 Literature-based Reading Methods for Children (three credits)

ECE 515 Mathematics Instruction and Assessment in Preschool and the Primary Grades (three credits)

ESE 511 Classroom Management and Intervention for Severe Behavior Problems (four credits)

Mild/Moderate Intervention Specialist

(26 credits)

ESE 500 Introduction to Special Education (four credits)***

ESE 502 Introduction to Individuals with Mild/Moderate Disabilities (four credits)**

ESE 511 Classroom Management and Intervention for Severe Behavior Problems (four credits)

ESE 512 Collaboration and Partnerships among Parents and Professionals in Special Education (four credits)

ESE 516 Life Skills and Career Planning in Special Education (two credits)

ESE 517 Assessment of Mild/Moderate Disabilities (four credits) or ESE 521 Assessment for Instructional Needs (four credits) (to be taken by first licensure candidates)

ESE 518 Curriculum and Instruction for Students with Mild/Moderate Disabilities (four credits) or ESE 522 Assessment-Based Curriculum and Instruction for Students with Mild/Moderate Disabilities (four credits) (to be taken by first licensure candidates)

EST 587 Student Teaching for Mild/Moderate Disabilities (four credits)

In order to obtain an Intervention Specialist License in Mild/Moderate as a first teaching credential, previous course work must be completed. The total master's degree must be completed in order to qualify for this license. (Equivalencies must be approved by a licensure advisor; for approval, list course number and attach copy of transcript.)

EDL 500 Phonics Assessment and Instruction (three credits)

EDL 501 Beginning and Intermediate Reading Instruction and Assessment (three credits)

EDL 505 Content Area Literacy (three credits)

EDL 512 Literature-based Reading Programs for Children (three credits) or EDL 513 Literature-based Reading Programs for Adolescents (three credits)

ECE 515 Mathematics Instruction and Assessment in Preschool and the Primary Grades (three credits)

EDB 612 Curriculum Theory and Instruction (three credits)

Moderate/Intensive Intervention Specialist

(30 credits)

ESE 500 Introduction to Special Education (four credits)***

ESE 503 Introduction to Individuals with Moderate and Severe Disabilities (four credits)**

ESE 510 Diagnostic Assessment and Multifaceted Evaluation for Students with Moderate and Severe Disabilities (two credits)

ESE 511 Classroom Management and Intervention for Severe Behavior Problems (four credits)

ESE 512 Collaboration and Partnerships among Parents and Professionals in Special Education (four credits)

ESE 513 Supporting Medical and Intensive Educational Needs (four credits)

ESE 519 Life Skills Assessment, Curriculum, and Instruction (four credits)

ESE 520 Assessment, Curriculum, and Instruction to Meet the Academic and Behavioral Needs of Students with Moderate and Intensive Disabilities (four credits)

EST 588 Student Teaching for Moderate and Intensive Educational Needs (four credits)

The additional courses listed below represent those required to attain a Moderate/Intensive Intervention Specialist license as a first teaching credential at the graduate level.

EDC 501 Child Development (three credits)

EDL 500 Phonics Assessment and Instruction (three credits)

EDL 501 Beginning and Intermediate Reading Instruction and Assessment (three credits)

EDL 505 Content Area Literacy (three credits)

EDL 512 Literature-based Reading Methods for Children (three credits)

ECE 515 Mathematics Instruction and Assessment in Preschool and the Primary Grades (three credits)

ECE 517 Science Instruction and Assessment in Preschool and the Primary Grades (three credits)

** EDC 500 Diversity in Educational Settings, or equivalent (three credits) is a prerequisite for this course.

***ESE 500 Introduction to Special Education (four credits) is a prerequisite course for all first licensure candidates and for all students certified/licensed in another teaching area.

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Exit Requirement

Select one of three options: comprehensive examination, project, or thesis.

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College of Graduate Studies

Program Listings

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Graduate Catalog 2004-2006

Master of Labor Relations and Human Resources (See Addenda)

Department of Management and Labor Relations

Ahuja Hall 433
 (216) 687-4754
[//www.csuohio.edu/cba/academic/graduate/mlr.html](http://www.csuohio.edu/cba/academic/graduate/mlr.html)

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The Faculty

Professors:

Charles H. Brooks, Emeritus
 Tim R. V. Davis
 Kenneth J. Dunegan
 Stuart Klein, Emeritus
 Jan P. Muczyk, Emeritus
 Nels E. Nelson
 Lawrence R. Walker, Emeritus
 Yoash Weiner, Emeritus

Associate Professors:

Mary Wilson Hrivnak
 Harry J. Martin
 Brenda Stevenson Marshall
 Jeffrey C. Susbauer, Emeritus, Chair

Assistant Professors:

William H. Bommer
 George W. Buckingham
 Sung Min Kim
 Doohee Lee
 Bryan J. Pesta

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Introduction

The principal objective of the Master of Labor Relations and Human Resources (M.L.R.H.R.) degree is to help graduates begin careers, or advance their careers, in human resources and labor relations. Specific objectives of the program include:

- To provide education in the fundamental principles of human resources and labor relations.
- To provide a better understanding of human resource data and its use in such areas as testing, program evaluation, selection, and survey research.
- To provide an awareness of the political and legal environments in which human resource and labor relations systems function.
- To provide an interdisciplinary perspective on the field.

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Application Procedure

Applicants must submit to the Office of Graduate Admissions:

1. **GMAT** or **GRE** results submitted to the University by the testing agency, and
2. An official transcript from each college and university attended.

Test registration forms may be obtained from Educational Testing Service, Box 966, Princeton, New Jersey 08540, or from the Testing Center, Cleveland State University, Cleveland, Ohio 44115.

To facilitate the admission process, it is strongly recommended that applicants use the online application system at www.csuohio.edu/admissions/gradForm.html. The processing time for paper application forms is longer.

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Admission Information

Students with a wide range of backgrounds are encouraged to enroll in the program. Examples of undergraduate majors who may be interested in this course of study include:

- Economics
- Political Science
- History
- Communication
- Sociology
- Psychology
- Urban Studies
- Business Administration

In addition to [College of Graduate Studies](#) standards for admission, applicants for the M.L.R.H. R. program must meet the following requirements:

1. A total of at least 950 points based on the formula: 200 times the cumulative undergraduate **grade-point** average plus the Graduate Management Admission Test (**GMAT**) score or the average score of the verbal and quantitative components of the Graduate Record Examination (**GRE**). All applicants for admission are required to take either the **GMAT** or **GRE** and submit results before being considered for admission.
2. Students scoring below the 25th percentile on the quantitative section of the **GMAT/ GRE** are required to take **OMS 500**; those scoring below the 20th percentile on the verbal section of the **GMAT/ GRE** are required to take the following **remedial** courses in business communication: **GAD 502** (16th through 19th percentile); **GAD 501** and **GAD 502** (below the 16th percentile). Students may take a non-credit course to test out of either or both requirements.

The Master's Programs Committee of the College of Business Administration meets periodically to review admission requirements. Please call the Graduate Business Advising Office at (216)687-3730 to obtain additional information.

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Program Design

The M.L.R.H.R. program consists of a minimum of 34 semester hours beyond the baccalaureate degree. The program is designed to accommodate students who are currently working. While a majority of enrollees are part-time students taking courses in the evening, the program also enrolls many full-time students. Full-time students normally take three semesters to complete the degree.

The program is divided into four components:

1. Prerequisite Courses
2. Required Core Courses(25 credits)
3. Elective Courses(nine credits)
4. Practice assessment examination. All students admitted into the M.L.R.H.R. program after Summer 2004 are required to purchase and take the online HRCI assessment examination in their last semester of study. Scores from this practice assessment examination will be used as part of an ongoing M.L.R.H.R. program review. Students documenting current PHR or SPHR certification may have this requirement waived.

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Prerequisite Courses

Students must have demonstrated proficiency in statistics, economics, and organizational behavior. This proficiency must be demonstrated through prior course work. Students lacking relevant prior course work are required to take one or more of the following courses or their equivalents:

ECN 503 Economic Concepts (three credits)

MLR 501 Management and Organizational Behavior (three credits)

OMS 503 Statistical Methods for Business Decisions (three credits)

A student may be admitted without such course work but must remove the deficiency within the student's first two semesters. Students who do not remove the deficiency are not permitted to enroll for further course work.

Required Core Courses(25 credits) (See Addenda - July 29, 2005)

The following are required for all M.L.R.H.R. students:

MLR 522 Labor Law

MLR 531 Employment Practices Law

MLR 601 Human Resources Management and Labor Relations

MLR 602 Advanced Wage and Employment Theory

MLR 640 Performance Appraisal, Compensation, and Benefits

MLR 641 Employment Planning, Personnel Selection, and Training

MLR 645 Information Systems in Human Resource Management

MLR 651 Collective Bargaining

Elective Courses(nine credits)

Students select an additional nine credit hours to complete the requirements of the degree. Elective course selections must be made with the consent of the student's program advisor. **Only one elective course may be at the 500 level.**

Electives offered within the Department of Management and Labor Relations include the following:

MLR 504 Organizational Theory and Design

MLR 511 Labor History

MLR 521 Comparative Labor Systems

MLR 523 Labor Relations in Public Employment

MLR 555 Labor-Management Cooperative Practices

MLR 577 Managerial Skill Development

MLR 604 Interpersonal Relations and Group Dynamics

MLR 605 Organizational Development

MLR 607 Total Quality Management/Continuous Quality Improvement

MLR 690 Professional Internship

MLR 698 Independent Study

Electives offered outside of the department include such courses as:

PSY 518 Personnel Psychology

PSY 522 Organizational Psychology

PSY 523 Assessment Techniques

PSY 538 Intellectual Assessment and Practicum

SOC 588 Sociology of Work and Organization

PAD 630 Public Human Resources Management

CNS 623 Group Process and Practice

ADM 642 Collective Bargaining and Contract Management

ALD 645 Organizational Behavior and Change

LAW 629 Labor Law

LAW 633 Arbitration

LAW 696 Alternative Dispute Resolution

Other elective courses may be selected with the consent of the student's program advisor.

See the M.A. in Psychology, M.A. in Sociology, Master of Public Administration, and College of Education and Human Services Course Descriptions sections of this Catalog and the

Cleveland-Marshall College of Law Catalog for course descriptions.

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Internships

Internships may be available for students to provide an opportunity to gain practical experience in human resources or labor relations.

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Non-Degree Students

Non-degree students are strictly limited to a maximum of 12 credits taken in non-degree status. Non-degree students are permitted to enroll only in the following courses: [MLR 501](#), [MLR 577](#), [OMS 500](#), [OMS 503](#), [GAD 501](#), [GAD 502](#), and [ECN 503](#), and then only with the Department Chair's permission. Admission requirements for non-degree students are the same as stated above, including [GRE/ GMAT](#) requirements. Successful completion of courses within the allowable 12 credit hours does not waive the required admission standard of 950 points.

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Academic Standards

The M.L.R.H.R. student must maintain an average of "B" or better in all course work attempted. Receipt of a grade of less than "B" in three courses and failure to maintain a "B" average, or the receipt of a grade of "F" in two courses, will result in dismissal from the program.

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For More Information

Please contact the Department of Management and Labor Relations for more information by phone, (216) 687-4754; fax, (216) 687-4708; or visit the department web site at [//www.csuohio.edu/cba/mlr/mlr.html](http://www.csuohio.edu/cba/mlr/mlr.html).

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Courses

For a listing of Management and Labor Relations courses and descriptions, see the [College of Business Course Descriptions](#) section of this Catalog.

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Current News & Events

- May 17, The Honorable Louis Stokes to Speak at Graduation; the late Honorable Carl B. Stokes to receive posthumous Honorary Doctor of Laws degree. [\[PDF\]](#)
- Read the Dean's New Newsletter, Letter of the Law Spring 2008 [\[more\]](#)

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College of Graduate Studies

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Graduate Catalog 2004-2006

Master of Science in Chemical Engineering (See Addenda - July 29, 2005)

Department of Chemical and Biomedical Engineering

Stilwell Hall 455

(216) 687-2569

E-mail: che@csuohio.edu

www.csuohio.edu/chemical_engineering/

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The Faculty

Professors:

George A. Coulman, Emeritus
 Jorge E. Gatica
 Bahman Ghorashi
 Edward S. Godleski, Emeritus
 Simon Rekhson, Research Professor
 Dhananjai B. Shah
 Orhan Talu, Chair
 Surendra N. Tewari

Associate Professors:

Joanne M. Belovich
 Rolf Lustig

Assistant Professors:

George P. Chatzimavroudis
 Sridhar Ungarala

Cleveland Clinic Foundation Collaborative Faculty:

Peter Cavanagh, Professor
 Brian Davis, Associate Professor
 Kathleen A. Derwin, Associate Professor
 Aaron Fleischman, Assistant Professor
 Bala Gopakumaran, Assistant Professor
 Sanfra Halliburton, Associate Professor
 Jihnzhi Liu
 Cahir McDevitt, Professor
 Shuvo Roy, Assistant Professor
 Raj Shekhar, Associate Professor
 William A. Smith, Associate Professor
 Antoine J. van den Bogert, [Associate Professor](#)
 Geoff Vince, Assistant Professor

Guang Yue, Assistant Professor

Note: In addition to the Master of Science in Chemical Engineering degree de-scribed below, the Department of Chemical and Biomedical Engineering administers specializations in Chemical Engineering and Applied Biomedical Engineering (ABE) as part of the Doctor of Engineering program in the College of Engineering. For details, see the Doctor of Engineering section of this Catalog.

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Introduction

The graduate program in chemical engineering provides advanced training in core areas and allows the student to take courses on an advanced level in specific areas of interest.

The master's program is designed to meet the needs of both part-time and full-time students. It provides an opportunity for students to hold full-time employment and further their education on a part-time basis. Full-time students can complete the program in one year. The program meets the needs of students planning to continue their studies at the doctoral level as well as students terminating their formal studies at the M.S. level.

Research activities of the faculty provide many opportunities for students to select projects applicable to a Master's Thesis (CHE 699) or a Master's Project (CHE 698). Research areas include reaction engineering, process modeling and control, tribology and surface phenomena, biochemical and biomedical engineering, material synthesis and processing, combustion, adsorption and diffusion in zeolites, transport phenomena, fluid mechanics, separation processes, statistical mechanics, glass forming, thermodynamics, and management of technology. The department is particularly strong in applications involving materials and biomedical engineering.

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Faculty Research and Publications

Excellent facilities are available in support of student and faculty research. Faculty and students have local and remote access to personal and mainframe computer resources. Large-scale computational problems can be solved, via remote log-in, at national centers for supercomputer applications. The department has a number of new instruments and research units. These include a high-temperature TGA/DTA, two Cahn micro balances, two scanning electron microscopes with x-ray dispersion analysis capability, a laser doppler velocimeter, a high-performance Berthy reactor, a fully instrumented bioreactor, a wear-and-friction testing and analysis unit, a high-pressure liquid chromatographic unit, a mercury porosimeter, two surface-area analyzers, FTIR spectrometer, and an atomic force microscope/scanning-tunneling microscope. In addition, each research laboratory has appropriate instrumentation specific to the projects. The support equipment in the department, along with faculty activity, provides outstanding research opportunities for graduate students. Students specializing in biomedical engineering can perform their research at the world-class research laboratories of The Cleveland Clinic Foundation.

External agencies presently provide over \$1,500,000 to support faculty research activities. Ongoing research projects, with the sponsoring agencies noted in parentheses, include:

- Characterization of zeolites (Engelhard Corporation, BOC, Air Products and Chemicals)
- Bioreactors for mammalian cell culture (NASA)
- Modeling of integrated metabolic systems (National Institutes of Health)
- Adsorption and diffusion in zeolites (State of Ohio, National Science Foundation)
- Advanced materials for fuel cells applications (Department of Energy)
- Glass fiber drawing (Department of Energy)
- Cardiovascular Magnetic Resonance Imaging and blood flow mechanics (Siemens, State of Ohio)
- Microsegregation in directionally solidified alloys (NASA)
- Influence of convection on solidification morphology (NASA)
- Multi-functional reactors in the chemical process industry (State of Ohio)

- High-temperature lubrication (NASA)

Faculty members have presented their research at national and international conferences and have published in such prestigious journals as The American Institute of Chemical Engineers Journal, Chemical Engineering Science, Combustion Science and Technology, Zeolites, Metallurgical Transactions, Journal of Colloid and Interface Science, Lubrication Engineering, Industrial Engineering Chemistry Research, Journal of Physical Chemistry, Computers and Chemical Engineering, Chemical Engineering Education, Latin American Applied Research, HVAC&R Research, International Journal of Fluid Mechanics, and International Journal of Engineering Science. Detailed descriptions of ongoing research projects as well as a list of recent faculty publications are available from the department on request or from the department Internet home page at www.csuohio.edu/chemical_engineering/.

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Financial Assistance

Graduate teaching and research [assistantships](#) are available to qualified students. Students receiving assistantships are required to complete a master's thesis. International students who wish to be considered for teaching [assistantships](#) are encouraged to take the Test of Spoken English (TSE). Interested students should check the appropriate square on the Graduate Application form. Policies concerning [assistantships](#) appear in the front section of this Catalog.

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Career Information

The Chemical Engineering program prepares students for careers in design, operation, research, or management. While graduates of this program tradition-ally find employment in the chemical industry, more chemical engineering graduates are being employed in the areas of general manufacturing and computer engineering, including polymer and composite processing and materials engineering. Many companies seek graduate chemical engineers to work in the areas of bioengineering, energy management, and environmental engi-neering.

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Admission Information

Admission to the graduate program in chemical engineering is open to qualified students with a baccalaureate degree in engineering or science, who present satisfactory evidence of ability to pursue graduate studies. A minimum bacca-laureate [grade-point](#) average of 2.75 normally is required. Programs of study may be developed for students with non-chemical engineering backgrounds. Such students are required to take prerequisite courses in chemical engineering, as described under the Preparatory Program section below.

Applicants should make arrangements to have official transcripts sent directly from their undergraduate institutions to the [Graduate Admissions Office](#). Two letters of recommendation from individ-uals familiar with the student's undergraduate or graduate work also are required.

If applicable, the applicant also should request that official test scores for the Test of English as a Foreign Language ([TOEFL](#)) and Graduate Record Examination ([GRE](#)) be sent directly by the testing agencies. The applicant must achieve satisfactory scores in these examinations.

The [GRE](#) General section is required if one or more of the following conditions is true:

- The undergraduate degree was awarded by a college or university outside of the United States, Australia, Canada, Ireland, New Zealand, or the United Kingdom.
- An unaccredited college or university awarded the undergraduate degree.

- The student's undergraduate cumulative **grade-point** average is below 2.75.
- The year of the baccalaureate degree precedes the date of application to the **College of Graduate Studies** by more than six years; however, in this case, the examination requirement may be waived, with program approval, if the applicant's undergraduate **grade-point** average is 3.00 or above.

If the **GRE** is required, a minimum score at the 80th percentile on the Quantitative section is normally required.

International students should refer to the section earlier in this Catalog for information on testing requirements to demonstrate English-language proficiency.

There is a preparatory program designed for students without a sufficient background in chemical engineering to provide them with a common background in engineering science and mathematics.

To facilitate the admission process, it is strongly recommended that applicants use the online application system at www.csuohio.edu/admissions/gradForm.html. The processing time for paper application forms is longer.

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The Preparatory Program

Graduate students who have an undergraduate background in a field other than chemical engineering are required to enroll in the Preparatory Program. This program is intended to prepare students for graduate courses in chemical engineering. The program consists of course work in the following areas:

CHE 300 Chemical Engineering Principles (4-0-4) (Offered fall and spring semesters)

CHE 302 Chemical Engineering Thermodynamics (4-0-4) (Offered fall semester only)

CHE 306 Transport Phenomena (4-0-4)(Offered fall semester only)

CHE 404 Chemical Reactor Design (3-2-4) Prerequi-sites: CHE 302 and CHE 306, or equivalents (Offered spring semester only)

CHE 408 Separation Processes (4-0-4) Prerequisites: CHE 302 and CHE 306 (Offered spring semester only)

Depending on the student's background, additional courses in mathematics and chemistry may be required. Students should call the Chemical Engineering Department at (216) 687-2569 to set up an appointment with the Graduate Program Coordinator prior to registering for classes.

Prior to satisfactory completion of the entire Preparatory Program, no course may be taken toward the fulfillment of the graduate degree program unless authorized by the academic/research advisor.

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Degree Requirements (See Addenda - July 29, 2005)

The graduate program consists of a minimum of 30 credit hours of approved courses. These credits are distributed as follows:

1. Core courses (12 credits):

CHE 502 Advanced Thermodynamics (four credits)

CHE 506 Advanced Transport Phenomena (four credits)

and one of the following:

CHE 504 Advanced Reactor Design (four credits)

or

CHE 508 Advanced Separation Processes (four credits)

2. A minimum of nine credits of graduate elective courses, subject to advisor approval. One of these courses may be in a technical discipline outside of chemical engineering. This course also may be at the 400 level. No courses required in the undergraduate chemical engineering program may be applied for graduate credit.

3. All students are required to present a department seminar on their research. Preferably, this presentation must occur one semester prior to their thesis defense.

4. Students must select either a thesis option or a project option. The requirements for each of the options, in addition to those described above, are as follows:

a. Thesis option (nine credits)

The student plans and completes a research project, which may lead to publication in a peer-reviewed scientific journal, under the direction of a faculty advisor. The student must enroll in at least nine credits of CHE 699 (Master's Thesis). This option is designed for the student who wants extensive research experience and a focus within a particular field.

b. Project option (nine credits)

The student completes a research project under the direction of a faculty advisor. The student must enroll in three credits of CHE 698 (Master's Project) and an additional six credits of chemical engineering graduate electives. This option is designed to provide the student with a broader education in chemical engineering, as well as to give some experience in research techniques.

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Exit Requirements

Students must achieve at least a 3.00 grade-point average to graduate. Thesis students must submit a thesis to their graduate committee following the Thesis and Dissertation Format Guidelines available from the College of Graduate Studies, Keith Building, Room 1150. Acceptance of the thesis by the graduate committee and passing an oral defense of the thesis are required. Non-thesis students must prepare and present a formal report of their research project, and present their results in a public seminar.

Courses

CHE 502 Advanced Thermodynamics (4-0-4). Prerequisite: Graduate standing in chemical engineering or permission of instructor. Principles of chemical engineering thermodynamics applied to advanced problems, first and second law, property relations, equilibrium and stability, mixtures, phase and chemical equilibria, systems under stress, and surface phases. Offered every year.

CHE 504 Advanced Reactor Design (4-0-4). Prerequisite: Graduate standing in chemical engineering or permission of instructor. Flow patterns in ideal and real reactors. Residence time distribution as a reactor design tool. Reactor design for multiple reactions, yield and selectivity concepts. Parametric sensitivity. Reactor dynamics and stability. Introduction to high-temperature non-catalytic reactions.

CHE 506 Advanced Transport Phenomena (4-0-4). Prerequisite: Graduate standing in chemical engineering or permission of instructor. The fundamental theories governing momentum transport, energy, and mass transport are studied with an aim at investigating the analogies that exist among them.

CHE 508 Advanced Separation Processes (4-0-4). Prerequisite: Graduate standing in chemical engineering or permission of instructor. Traditional and developmental advanced separation techniques. Multi-component distillation, multicomponent absorption/stripping, membrane separations, adsorptive separations, and hybrid systems.

CHE 510 Structure of Materials (4-0-4). Prerequisite: Graduate standing in chemical or civil engineering, or permission of instructor. Basic principles determining the atomic and crystal structures of materials. Topics include instrumental and structural analysis techniques, evolution of microstructures (phases/phase diagrams), processing (diffusive, solidification, mechanical working) techniques and their influence on microstructures. Cross-listed with **MME 510**.

CHE 551 Agile Manufacturing (3-0-3). Prerequisite: Graduate standing in engineering or permission of instructor. An interdisciplinary course in agile manufacturing. Emphasis is placed on re-configurable self-directed work teams, flexible structures, adoption of advanced technology, and quality improvements.

CHE 561 Principles of Air Pollution Control (3-0-3). Prerequisite: Graduate standing in chemical engineering or permission of instructor. The application of engineering principles to the analysis and control of air pollution includes techniques of air sampling and analysis, atmospheric chemistry and transport, air-quality standards, and methods of air-pollution abatement.

CHE 566 Biochemical Engineering (3-0-3). Prerequisite: Graduate standing in chemical engineering or biology, or permission of instructor. Introduction to the fundamental concepts in biochemical engineering. Topics include enzyme kinetics, immobilized enzymes, genetic engineering, cell growth kinetics, and batch and continuous reactor design.

CHE 568 Process Modeling (3-0-3). Prerequisite: Graduate standing in chemical engineering or permission of instructor. Review of the basic principles of transport of momentum, heat, and mass with applied problems. Numerical methods for solving more complex problems of transport phenomena and kinetics.

CHE 572 Principles of Adsorption and Catalysis (3-0-3). Prerequisite: Graduate standing in chemical engineering or permission of instructor. An in-depth study of the chemical principles governing the adsorption of molecules onto the chemically active surfaces of catalysts and determining how this adsorptive interaction causes chemical reactions to be promoted. Emphasizes the study of catalysts in industrially significant reactions, such as in petroleum refining.

CHE 574 Multiphase Reactors (3-0-3). Prerequisite: Graduate standing in chemical engineering or permission of instructor. Isothermal and non-isothermal analysis of kinetic data for gas-solid catalytic and non-catalytic reacting systems. Design of packed-bed, fluidized-bed, and moving-bed reactors.

CHE 576 Multicomponent Mass Transfer (3-0-3). Prerequisite: Graduate standing in chemical engineering or permission of instructor. Diffusion and mass transfer as applied to stagewise and continuous operations. Emphasis on multicomponent, non-isothermal, and unsteady-state operations. A considerable amount of time is devoted to computer programs.

CHE 580 Advanced Materials Processing (3-0-3). Prerequisite: Graduate standing in chemical engineering or permission of instructor. Use of fundamental principles in design and analysis of advanced materials processing, such as fabrication of semiconductor devices, optical materials fabricated by sol-gel processes, ceramic-metal composites, and control of morphology at submicron levels. Statistical treatment and analysis of experimental/plant data.

CHE 582 Introduction to Combustion Phenomena (3-0-3). Prerequisite: Graduate standing in chemical engineering or permission of instructor. Develops a foundation in combustion phenomena, including transport and other mechanisms in homogeneous and heterogeneous combustion. Environmental implications of combustion. Elementary modeling and preliminary design calculations in industrial and modern applications of combustion, such as hazardous-waste incineration, gas turbines, catalytic converters, and coal-combustion systems. Regulatory concerns, stoichiometry, thermochemistry, incinerators, and air-pollution control.

CHE 584 Principles and Applications of Rheology (3-0-3). Prerequisite: Graduate standing in chemical engineering or permission of instructor. Rheological models for non-Newtonian fluids. Study of principles of equipment design.

CHE 586 Fundamentals of Polymers (3-0-3). Prerequisite: Graduate standing in chemical engineering or permission of instructor. Emphasis on polymer molecular structure and its relation to physical properties, such as molecular weight distributions, gel point, glass transition, heat capacity, and viscosity. Other topics include polymerization kinetics; condensation esterification; emulsion polymerization; and methods of analysis, such as X-ray diffraction, infrared spectroscopy, and other important basic engineering properties of polymers.

CHE 594 Special Topics (3-0-3). Prerequisite: Graduate standing in chemical engineering or permission of instructor. Courses of current interest in chemical engineering. Offered on sufficient demand. May be repeated for credit with change of topic.

CHE 602 Surface Phase Equilibria (3-0-3). Prerequisite: CHE 502 or equivalent. Equilibrium between surface phases and bulk phases; adsorption; two-dimensional thermodynamics.

CHE 603 Fundamentals of Adsorption (3-0-3). Prerequisites: CHE 502 and CHE 506. Physical and chemical principles of adsorption, thermodynamics of adsorption, single and multicomponent equilibria, kinetics of adsorption, adsorption column dynamics, and a review of industrially important adsorption processes. An emphasis on zeolites and their applications.

CHE 604 Multiphase Reactor Design (3-0-3). Prerequisite: CHE 504 or equivalent. Advanced reaction-engineering principles applied to the design and operation of multiphase reactors. Multiple reactions and heat effects in gas-solid, gas-liquid, and gas-solid-liquid reacting systems. Optimization of chemical reactors.

CHE 605 Advanced Kinetics (3-0-3). Prerequisite: CHE 504 or equivalent. Consideration of the fundamentals of homogeneous and heterogeneous reacting systems. Discussion of kinetic mechanisms, non-isothermal kinetics, enzyme kinetics, and solid-phase reactions.

CHE 606 Advanced Mass Transfer (3-0-3). Prerequisite: CHE 506 or equivalent. Multicomponent diffusion considered in detail; experimental data interpreted by film and penetration theories; discussion of unsteady-state and unconventional diffusional processes such as thermal diffusion.

CHE 607 Advanced Heat Transfer (3-0-3). Prerequisite: CHE 506 or equivalent. Investigation of theory and methods of heat transfer of interest to chemical engineers. Topics include transient conduction, thermal boundary layer, forced convection, free convection, and radiative heat transfer.

CHE 612 Combustion Systems (3-0-3). Prerequisites: CHE 504, CHE 506, and CHE 582, or equivalents. Examination of systems that utilize combustion for generation of mechanical and thermal energy for specific applications. Representative systems, such as turbines and fluid-bed units, are examined in detail.

CHE 614 Turbulent Flow (3-0-3). Prerequisite: CHE 506 or equivalent. In-depth study of fundamentals of turbulent flow. Phenomenological theories of turbulence. Experimental methods of measuring turbulence. Recent topics of research interest in turbulence.

CHE 616 Advanced Numerical Methods (3-0-3). Prerequisite: CHE 506 or equivalent. Modern numerical procedures in approximation theory, matrix eigenvalues, initial and boundary-value problems, and partial differential equations. Skill in selecting appropriate procedures for particular problems is developed. Required projects consist of programming solutions to engineering problems.

CHE 617 Process Optimization Methods (3-0-3). Prerequisite: CHE 616 or equivalent. An introduction to optimization theory and methods. Examination of the application to process design. Study of the formulation of the engineering optimization problem. A design-optimization project is required.

CHE 618 Catalysis (3-0-3). Prerequisites: CHE 502 and CHE 504. In-depth study of solid catalysts and catalytic-process analysis and design. Kinetics of elementary steps and overall reactions. Kinetics of two-step reactions on non-uniform surfaces. Structure-sensitive and structure-insensitive reactions. Parasitic phenomena.

CHE 651 Biomechanical Engineering (3-0-3). Prerequisite: Graduate standing in chemical engineering or permission of instructor. Understanding the terms and concepts of biomechanical engineering as it relates to medical needs and patients, including topics in artificial joints, mechanics and modeling of soft tissue, properties of blood, cardiac valves, heart function and heart-assist replacement, biomechanical issues in rehabilitation equipment and prosthetics, renal function, and oxygen transport.

CHE 653 Tissue Engineering (3-0-3). Prerequisite: Graduate standing in chemical engineering or permission of instructor. Essential concepts and technologies in cellular and molecular biology, as relevant to the design, application, and evaluation of biological constructs in tissue engineering, with preliminary understanding of commercial applications.

CHE 655 Biomaterials (3-0-3). Prerequisite: Graduate standing in chemical engineering or permission of instructor. An introduction to materials in medicine designed to develop an understanding of the terms and concepts that relate basic and applied biomaterials engineering research to medical devices.

CHE 657 Medical Devices and Biomaterials (3-0-3). Prerequisite: Graduate standing in engineering. Comprehensive overview of issues surrounding medical-device design and regulation, including characteristics, function, in vitro testing, evaluation, and intellectual property.

CHE 659 Medical Imaging (3-0-3). Prerequisite: Graduate standing in chemical engineering or permission of instructor. Introduction to the principles of X-rays, ultrasound, radio nuclide imaging, and magnetic resonance imaging; Description of data acquisition and image-reconstruction techniques; Introduction to image-processing techniques; clinical applications and industrial procedures and regulations.

CHE 694 Selected Topics (one to three credits). Prerequisite: Graduate standing in chemical engineering or permission of instructor. Advanced selected topics in chemical engineering. Offered on sufficient demand. May be repeated for credit with change of topic.

CHE 698 Master's Project (one to three credits). Prerequisite: Graduate standing in chemical engineering or permission of instructor. Analysis of a specific problem in an area of mutual interest to the student and instructor. A formal written report is required.

CHE 699 Master's Thesis (one to 12 credits). Prerequisite: Graduate standing in chemical engineering or permission of instructor. The Thesis/Dissertation proposal approval form must be on file in the College of Graduate Studies prior to enrollment. Research under the guidance of a faculty member, culminating in the writing of a thesis.

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College of Graduate Studies

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Graduate Catalog 2004-2006

Master of Public Administration

College of Urban Affairs

Urban Affairs 231

(216) 687-2136

urban.csuohio.edu/academics/graduate/mpa.shtml

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The Faculty

Professors:

William M. Bowen
Edward W. Hill
Sanda Kaufman
Janet Kelly, Levin Chair
Sylvester Murray
Mark Rosentraub, Dean
Michael W. Spicer
Camilla Stivers

Associate Professors:

Jennifer Alexander
David R. Elkins, Political Science
Lawrence F. Keller
Brenda Stevenson Marshall, Health Care Administration
Vera Vogelsang-Coombs, Program Director
Alan C. Weinstein, Director, J.D./M.P.A. Program

Assistant Professors:

Shari Garmise
Jun Koo
Nancy Meyer-Emerick

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Accreditation

The Master of Public Administration program is accredited by the National Association of Schools of Public Affairs and Administration (NASPAA). Additionally, the Maxine Goodman Levin College of Urban Affairs, which houses the M.P.A. program, has been designated a Center of Excellence in Public Administration by Cleveland State University. The M.P.A. program also was ranked second in the nation by U.S. News and World Report in the area of city management/urban policy.

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Mission

The Master of Public Administration program's mission is to advance intellectual and administrative leadership in public administration by preparing students to assume the

challenges of public service. Course work gives students a foundation in general public administration and specialized skills grounded in one of the program's areas of expertise. It also helps students to discover, construct, interpret, and disseminate knowledge and understanding about the practice of public affairs. The M.P.A. program also serves the Northeast Ohio region, including the professional community, by extending intellectual resources and applying knowledge.

The M.P.A. program has built this mission on a commitment to nationally recognized excellence in public administration education and research, to the development of leadership in government, to public service for solutions to urban problems, and to an enhanced understanding of public policy and management in a global society. Through its activities, the Master of Public Administration program supports the educational, research, and public-service missions of the Maxine Goodman Levin College of Urban Affairs and Cleveland State University.

The Master of Public Administration program is multidisciplinary, drawing on the faculties of the James J. Nance College of Business Administration, the Levin College of Urban Affairs, and the Department of Political Science. The program is housed in the Levin College. The principal objective of the program is to prepare its graduates for administrative positions in government, nonprofit, and public-service organizations. The program provides a broad educational base as well as specific administrative techniques as preparation for positions carrying administrative responsibility. The program is designed both for in-service students and recent college graduates seeking careers in government and public-service organizations. Most courses are offered in the **evening** and a few on **weekends**, allowing students to take classes after work hours.

For updated M.P.A. program information, visit the web site at urban.csuohio.edu/academics/graduate/mpa.shtml.

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Research Units

Students have opportunities to work with the faculty and staff in the research, public-service, and training centers of the Levin College. See the Educational Resources section of this Catalog for information on the Levin College facilities.

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College Computing and Technology

To promote computer literacy and to provide computer-based academic resources, the Levin College maintains two student computer labs. The computer labs, located in UR 39 and UR 40, offer software applications for word processing, spreadsheet analysis, database, computer-aided presentation, Geographic Information Systems (GIS), ArcInfo, Internet access, and statistical analysis. The labs provide access to laser printers for high-quality black-and-white output, a color laser printer for GIS maps, and a color scanner for capture of graphics. Each lab is equipped with a permanently mounted LCD projector for teaching computer-based classes. Any student enrolled in a Levin College program or class may apply for a computer-lab account and use the labs during hours in which the College's building is open. In addition, Levin College-lab account holders are provided with disk space on the networked server for conveniently storing class work; an e-mail account for communicating with people on campus and around the world; and disk space for creating personal web pages. The Interactive Media Lab (IML) is available for production of DVDs, CD-ROMs, video/audio streams, and advanced graphics. Digital video/audio capture equipment is available. The IML is equipped with Apple Macintosh G4 dual processor computers and a Quicktime streaming server. Additional computing information may be found at the College web site at urban.csuohio.edu.

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Career Information

The Levin College—through the Office of Student Services and the faculty—provides a variety of services related to career planning to help students and graduates find employment related to their program of study. Current job postings are maintained in the Office of Student Services and on the College web site. Cleveland State's Career Services Center also provides graduate students and alumni with career advice and career-development assistance, including resume review. (See the section on Campus Services and Programs: Career Services in the front of this Catalog).

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Financial Assistance

The Levin College provides [graduate assistantships](#) on a competitive basis to full-time students. Although the deadline for receipt of graduate-assistantship applications is March 1, fullest consideration is given to applicants who have submitted all application materials for the M.P.A. program by February 1.

The College also offers paid internships and tuition grants to eligible degree-seeking students. Application forms are available from the Levin College Office of Student Services. (See also the section on Expenses and [Financial Aid: Graduate Assistantships](#) in the front of this Catalog.)

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Admission Information

Applicants to the Master of Public Administration Program must meet the minimum requirements established by the College of Graduate Studies and the M.P.A. program faculty.

1. A minimum undergraduate [grade-point](#) average of 3.00 or better.
2. Graduate Record Examination ([GRE](#)) scores, with a combined [GRE](#) Verbal and Quantitative score of at least the 40th percentile, and an Analytical Writing score of at least 4.0. Students with a graduate degree from an accredited college or university may be exempted from this requirement.
3. Submit two letters of recommendation.
4. Non-native English speakers must demonstrate English-language proficiency, demonstrated by a minimum score of 525 on the [TOEFL](#); a minimum score of 85 on the Michigan Test; successful completion of the English as a Second Language program level 112 of the ESL Language Centers; or an earned bachelor's degree or higher from an accredited U.S. institution.

To facilitate the admission process, it is strongly recommended that applicants use the online application system at www.csuohio.edu/admissions/gradForm.html. The processing time for paper [application forms](#) is longer.

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Types of Admission

[Regular \(no conditions\)](#) Undergraduate [GPA](#) of 3.00 or better, and Combined [GRE](#) Verbal and Quantitative score of at least the 40th percentile and an Analytical Writing score of 4.0 or better.

[Regular \(with conditions\)](#)

Undergraduate GPA of 3.00 or better, or Combined GRE Verbal and Quantitative score of at least the 50th percentile, and an Analytical Writing score of less than 4.0.

Must complete the PAD 501 Assessment to determine if enrollment in the course is needed.

Must take PAD 501, if necessary, as well as PAD 600 and PAD 601 (three courses).

Maintain a B average.

An assessment of quantitative skills is required for all M.P.A. students. This assessment determines whether students must enroll in PAD 501 Fundamentals of Applied Reasoning.

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Program Requirements

The curriculum for the M.P.A. program consists of 46 to 49 credit hours of study depending on the method of degree completion. The program is divided into core courses, a specialization, electives, and a Public Administration Capstone.

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Core Courses

The core of the M.P.A. curriculum (20 credit hours) is required of all students and consists of the following:

PAD 600 Introduction to Public Administration

PAD 601 Applied Quantitative Reasoning I

PAD 603 Public Finance and Economics

PAD 604 Organizational Behavior

PSC 605 Public Administration and the Political Process

Students in the Economic Development track must also take PAD 602 Applied Quantitative Reasoning II.

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Areas of Specialization

All students complete a minimum of three courses or 12 credit hours in an area of specialization except for the General Public Management option (three courses or nine credit hours minimum). The three areas of specialization and related options are listed below. See the Graduate Programs Advisor for specific curriculum plans.

1. Public Management

General Public Management

Nonprofit Management

Public Safety Management

2. Economic Development

3. Health Care Administration

Health Care Management

Long-term Care Administration

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Elective Credit

All students are required to take elective courses chosen with the approval of the Academic Coordinator of their track specialization. Depending on the student's chosen track and method of degree completion, the combined hours of core, track, and electives must be at least 46 credit hours. The electives are designed to enhance current skills, to fill gaps in substantive areas, or to develop an additional concentration. For example, students may take additional courses in Human Resources Management, Public Finance and Budgeting, Urban Planning, or Environmental Policy. Students in the Health Care Administration specialization may emphasize Public Health Management or Long-term Care Administration. Completion of the option in Long-term Care Administration can be used to fulfill the educational requirements for licensure of the State of Ohio Board of Examiners of Nursing Home Administrators.

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Internship/Research

For students enrolled in the M.P.A. program prior to Spring 2003.

PAD 690 Internship

PAD 698 Research in Public Administration

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Capstone Requirement

PAD 691/692 is a generalist public administration capstone course that provides a final common experience for M.P.A. students. In this course, students integrate learning from the M.P.A. core curriculum with professional practices encountered in public and nonprofit organizations. Students are expected to prepare and defend a capstone paper. This capstone course is a requirement for all M.P.A. students who have entered the M.P.A. program as degree-seeking students Spring 2003 or later. Students who were admitted earlier may enroll in the capstone course (PAD 691/692) in lieu of the requirement to complete PAD 690 (internship) or PAD 698 (exit project) under the old curriculum.

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The J.D./M.P.A. Program

The combined curriculum leading to the degrees of Juris Doctor and Master of Public Administration is designed to permit the student to complete both degrees in four years instead of the five years that would normally be required to complete the two degrees separately.

Entry into the Joint Degree Program can occur in one of two ways. Applicants who are not currently enrolled in either the J.D. or the M.P.A. degree program must apply for admission to both the College of Graduate Studies and the College of Law concurrently and follow the normal procedures of the respective colleges. Application for admission must be specifically for the Joint Degree Program. Students who enroll in this manner spend their first year taking courses exclusively in the J.D. program and their second year taking courses exclusively in the M.P.A. program. In the third and fourth years, students take courses in both degree programs. Applicants who are currently enrolled in either the J.D. or the M.P.A. degree program must apply for admission to the other degree program prior to the completion of 60 credit hours in the J.D. program or 28 credit hours in the M.P.A. program. Students who enroll in this manner are advised as to how to schedule the remainder of their courses in the Joint Degree Program. Under no circumstances will a student be allowed to take more than eight years to complete the

combined program.

The Joint Degree Program requires a total of four academic years. The Juris Doctor requirements are fulfilled by completion of 80 credit hours of work in the College of Law, including all required courses, and the transfer of eight credit hours from courses taken in the Master of Public Administration program. The Master of Public Administration requirements are fulfilled by completion of 36 credit hours of courses in the College of Urban Affairs, including all required courses, and the transfer of the equivalent of eight credit hours from courses taken in the College of Law. In order to ensure that the degree requirements of both programs are fully maintained, while at the same time permitting the saving of a full academic year, students who pursue the Joint Degree Program are not permitted to take courses outside either the College of Law or the Master of Public Administration program for credit toward either degree.

All requirements for both programs must be completed before either degree is awarded. If a student elects to receive one degree before completing the requirements of the other degree, forfeiture of some transfer credit will result and the student will no longer be in the Joint Degree Program.

Submit College of Graduate Studies application materials to the Graduate Admissions Office. Contact the College of Law regarding law application procedures.

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Ohio Certified Public Manager

The Ohio Certified Public Manager (OCPM) program is an accredited training program designed to enhance the skills of practicing public managers who work in state, county, regional, or local agencies of Ohio's governments. The first accredited CPM program was developed in Georgia in 1976. In 2002, 19 states, including Ohio, have accredited CPM programs, along with the federal government and the District of Columbia.

The OCPM program is housed in the Ohio Department of Administrative Services (DAS). The Levin College of Urban Affairs delivers the OCPM Program in the northeast region of the state.

The Levin College's M.P.A. faculty recognizes that the OCPM program is worthy of graduate public-administration credits. The College will award OCPM graduates entering the M.P.A. Program with eight credit hours of elective course work. OCPM graduates applying to the M.P.A. Program must provide documentation from DAS that they have successfully completed the OCPM program.

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Courses (See Addenda)

Cross-listed Courses

Many of the core, track, and elective courses offered in the Levin College are cross-listed in the four master's degree programs (M.S.U.S., M.A.E.S., M.P.A., and M.U.P.D.D.). Please note that courses with the same title may not be repeated for credit. The petitions to this rule are: ENV/PAD/PDD/UST 693, PDD/UST 696, PAD/PDD/UST 697, and PAD 698.

PAD 501 Fundamentals of Applied Reasoning (4-0-4). Prepares students to apply quantitative reasoning in work-setting decisions. The course takes a hands-on approach by using real-life examples to illustrate the use of quantitative tools from algebra, probability, and descriptive statistics in solving concrete problems. Students also acquire computer skills essential for the other quantitative research methods courses and for courses using computers through hands-on instruction of mathematical and statistical packages (such as MathCAD and

SPSS) in the Urban Affairs Computer Lab. Highly recommended as preparation for PAD 601. Cross-listed with PDD 501 and UST 501.

PAD 503 Cartography and Graphics (4-0-4). The principles of map making and the use of presentation graphics in urban planning and research applications. The use of maps and graphics in the analysis of social, economic, and demographic patterns and associations. Hands-on experience with computers and graphic information systems technology. Cross-listed with PDD 503 and UST 503.

PAD 510 Proposal Writing and Program Development (4-0-4). Examination of the structure and content of proposals, sources of funding, foundation decision making, program evaluation, and social/institutional change in the urban environment. Students gain experience through independent preparation of a proposal and application of evaluation procedures. Cross-listed with UST 510.

PAD 512 Managing Urban Diversity (4-0-4). Study of diversity including circumstances faced in urban settings that are exacerbated or affected by diversity factors; exploration of a range of social, political, and economic issues related to diversity. Cross-listed with PDD 512 and UST 512.

PAD 553 Environmental and Natural Resources Economics (4-0-4). Prerequisite: Microeconomic analysis or permission of instructor. Environmental quality as an economic problem; facts about environmental pollution; analysis of environmental externality; policies for environmental protection; cost-benefit analysis. Cross-listed with ECN 574.

PAD 573 Columbus Seminar (4-0-4). Intensive one-week experience in Columbus, Ohio. Examination of the state policy and budgeting processes; the impact of budgeting on public policy and service provision. Cross-listed with UST 573.

PAD 574 Washington Seminar (4-0-4). On-site study of federal urban-policy issues. Two intensive weeks in Washington, D.C., expose students to critical analysis of the federal budget and legislative process, intergovernmental relations problems, and current urban-policy issues; preparatory and follow-up sessions required. Cross-listed with PDD 574 and UST 574.

PAD 594 Levin Chair Seminar (4-0-4). In-depth study of urban policy issues selected by the Albert A. Levin Professor of Urban Studies and Public Service. Cross-listed with PDD 594 and UST 594.

PAD 600 Introduction to Public Administration (4-0-4). Covers the functional areas of public administration, including personnel, budgeting, and planning. Reviews the history of public administration as a discipline. Looks at the legal environment of public management and ethics.

PAD 601 Applied Quantitative Reasoning I (4-0-4). Prepares students to apply quantitative reasoning to public administration, planning, and policy design decisions. Presents the logic of quantitative analysis. Introduction to basic techniques for data description and presentation to lay audiences using computer technology, including spreadsheets, presentation packages, and the Internet; and using a computer package for statistical decisions in the context of public administration and planning. Students learn to identify problems that lend themselves to quantitative analysis; ask questions that can be answered through quantitative reasoning; formulate hypotheses and identify the means to test them; carry out analyses and explorations, understand the meaning of results, and reapply results to the initial or similar problems; present and clarify results for specified audiences; evaluate results of quantitative analyses carried out and reported by others; and apply the new knowledge to decision making. Cross-listed with PDD 601 and UST 601.

PAD 602 Applied Quantitative Reasoning II (4-0-4). Prerequisite: PAD 601 or permission of instructor. Covers the logic of empirical inquiry and the design of research to solve specific urban problems. Among the topics covered are experimental designs, quasi-experimental designs, measurement, validity, reliability, survey design and analysis, performance

measurement, program evaluation, and the ethics of the research process. Students develop an executable research design as a product of the course. Cross-listed with PDD 602 and UST 602.

PAD 603 Public Finance and Economics (4-0-4). The political economy of public spending and alternative methods of financing public spending. Topics include the scope and character of government activities and their economic effects on the private sector, expenditure analysis and evaluation, the budgetary process and politics, the principles and effects of taxation, pricing government services, and the development of basic economic concepts necessary to the understanding of public finance issues. Cross-listed with PDD 603 and UST 603.

PAD 604 Organizational Behavior (4-0-4). Complex formal organizations are the principal social vehicle for the conduct of public affairs. This course is an introductory graduate seminar that examines the principal conceptual and theoretical bases for understanding the behavior of complex formal organizations, especially large-scale public bureaucracies.

PAD 605 Urban Spatial Structures (4-0-4). The manner in which people and places interact in labor, housing, and product markets to produce the urban outcome: cities, housing, employment, and wealth. Cross-listed with PDD 605 and UST 605.

PAD 612 Urban Political Processes (4-0-4). Governmental structure, processes, and problems arising from physical and social structures of contemporary urban areas; examination of emerging political forces and changing governmental institutions. Cross-listed with PSC 612.

PAD 620 Economic Development: Plans and Strategies (4-0-4). Examination of the techniques utilized in developing plans for overall economic growth and development with an emphasis on the industrial sector; actual experience in formulating and testing plans and development strategies. Requires a comprehensive regional analysis. Cross-listed with PDD 620 and UST 620.

PAD 621 Local Labor Market Analysis (4-0-4). Prerequisites: PAD 601, PAD 603, and knowledge of Excel or other spreadsheet program. The relationship between the functioning of national, regional, and urban labor markets, earnings distribution, and poverty; review of the theory of labor markets and the impact of unions on wage setting and employment. Cross-listed with PDD 621 and UST 621.

PAD 622 Economic Development Policy (4-0-4). An examination of the international and national competitive positions of industry; state and national industrial policy proposals; various approaches to economic development and industrial policy. Cross-listed with PDD 622 and UST 622.

PAD 623 Urban Development Finance and Applied Project (4-0-4). Prerequisites: PAD 603 and PAD 610. Financing, deal structuring, and analysis of public subsidy for urban real estate projects using discounted cash-flow analysis. Also includes preparation of a comprehensive report and the presentation of an urban real estate project. Cross-listed with PDD 623 and UST 623.

PAD 624 Anti-Poverty Policy (4-0-4). Prerequisites: PAD 603 or equivalent and PAD 621. Examines the historical development of anti-poverty policy and the economic effectiveness of various welfare-reform efforts. Looks at anti-poverty efforts from the perspective of national macroeconomic policy and national programs, moves to state-based efforts, and concludes with community-development perspectives on asset accumulation for low-income families. Cross-listed with PDD 624 and UST 624.

PAD 625 Strategic Thinking (4-0-4). The theory and practice of strategic thinking for planning and management in the public and nonprofit sectors; concepts and procedures that assist planners and managers in coping with uncertainty; development of analytical skills and

techniques. Cross-listed with PDD 625 and UST 625.

PAD 626 Workforce Development (4-0-4). Prerequisite: PAD 603 or equivalent. Workforce development takes place on both the supply and demand sides of the labor market. The demand side deals with the expressed needs of employers for specific skill types. The supply side is divided into efforts to upgrade the skills of incumbent workers and to inculcate marketable skills to new workers. A practical examination of the state of the art in workforce development strategies, policies, and programs. Cross-listed with PDD 626 and UST 626.

PAD 630 Public Human Resources Management (3-0-3). The issues and public policies that have an impact on the management of human resources in the public sector. Differences between public and private personnel administration; the American civil service system; recruitment, placement, promotion, training, and compensation; performance assessment; rights and duties of public employees.

PAD 631 Law and Public Administration (3-0-3). Administrative law as the body of rules and prescriptions for public agencies. The evolution and development of American administrative law, its substance, and the role of administrative law in the governing process.

PAD 632 Organizations and Management in the Public Sector (4-0-4). Traces the history of public management and how this history can be organized to increase the effectiveness of managing public organizations. An overview of management thought, its cultural context, and its "politics." Cross-listed with UST 632.

PAD 633 Budgetary Policy (4-0-4). Covers the importance of budgeting and finance to public policy makers and public administrators. Sources of city and state finance information; examination of the revenue, expenditure, and debt structure of American cities; also includes examination of budgetary processes, formats, and accounting systems. Cross-listed with PDD 633 and UST 633.

PAD 634 Ethics in the Public Sector (4-0-4). Provides students with an understanding of the ethical dimensions of public administration and helps students develop the awareness, skills, and value framework to act ethically in a public or private-sector management role. Cross-listed with UST 634.

PAD 642 Introduction to Geographic Information Systems (4-0-4). Prerequisite: PAD 501 or permission of instructor. Principles of Geographic Information Systems (GIS) as a computer tool to provide spatial information analysis. Laboratory instruction in the use of GIS software to aid in the analysis of workplace problem situations. Cross-listed with ENV 642, PDD 642, and UST 642.

PAD 643 Advanced GIS (4-0-4). Prerequisites: PAD 642. Students learn to develop and implement various GIS application projects, such as network analysis, polygon overlay, and surface modeling. Students use advanced GIS software tools in completing computer-based analytical exercises. Cross-listed with ENV 643, PDD 643, and UST 643.

PAD 644 GIS Capstone Seminar (4-0-4). Provides an overview of current issues in GIS. Students review and discuss their GIS projects/research in the context of these issues. Students review both the technical/-practical issues encountered as well as the conceptual implications of their projects. The course offers graduate students the opportunity to reflect on the skills learned during their GIS projects and to provide an overview of ongoing development in the field. Cross-listed with ENV 644, PDD 644, and UST 644.

PAD 650 Institutional Development of the Nonprofit Organization (4-0-4). (See Addenda - January 01, 2005) Examines nonprofit organizations as community institutions, and the role of institutional management and leadership in their development. Covers the nature of leadership and management in the nonprofit sector and the differences between them; fund-raising and financial management; governance and the respective roles of board, staff, and volunteers; the political, economic, and inter-governmental environment; community relations;

needs assessment; and planning and performance measurement. A highly interactive, hands-on approach emphasizing discussion, case analysis, and problem solving.

PAD 651 Fund Raising and External Relations for Nonprofit Organizations (4-0-4).

Provides the fundamentals of fund raising and external relations for nonprofit organizations, with special emphasis on the challenges faced by small to mid-sized community -and faith-based organizations. In a climate of devolution and other significant changes in the nonprofit environment, leaders and managers must pay increasing attention to developing a viable strategy for attracting diverse and sustained financial support as well as for developing productive relations with key stakeholder groups, including clients, area residents, members, trustees, legislators, the press, and other important elements. This course is a practical, hands-on exploration of the skills and knowledge needed to equip leaders and managers of nonprofits to position their organizations effectively.

PAD 652 Financial Administration and Control of Nonprofit Organizations (4-0-4).

Provides an understanding of basic financial, budgetary, and accounting concepts, processes, and techniques relevant to managers in nonprofit organizations; develops an appreciation of how and why financial decisions are made and how they affect nonprofit operations; strengthens participants' ability to understand and use financial documents; and develops skills in financial analysis and management.

PAD 656 Capstone Seminar in Nonprofit Leadership and Management (4-0-4). This seminar considers key aspects of leadership and management in the nonprofit sector as they are applied in practice. Integrates significant theory and research results with practical skills. This course is intended as a capstone experience for students pursuing the graduate certificate in nonprofit management and/or the M.P.A. nonprofit specialization.

PAD 670 Introduction to Law and Public Policy (4-0-4). Introduces the basic structures of the American legal system and how that system interacts with such other disciplines as planning, policy analysis, and public administration in the creation of public policy. First course of a two-course sequence, with PAD 683. Cross-listed with UST 670.

PAD 683 Law and Public Policy Clinic (4-0-4). Prerequisite: PAD 670. Provides an opportunity for students to work on legal and public policy issues under the supervision of Law and Urban Affairs faculty. Clients include state and local governments, citizens' groups, and nonprofit agencies who come to the clinic for analysis of and proposed solutions to a variety of critical government and social issues. Cross-listed with UST 683.

PAD 690 Internship (3-0-3). Intended for students without previous administrative experience. The internship requires 300 hours of supervised activity.

PAD 691/692 MPA Capstone (two or four credits). A generalist public administration capstone course that provides a final common experience for M.P.A. students. Students integrate learning from the M.P.A. core curriculum with professional practices encountered in public and nonprofit organizations. Students are expected to prepare and defend a capstone paper.

PAD 693 Special Topics in Public Administration (4-0-4). Special offerings varying with faculty expertise and student interest. Typical subjects include **Affirmative Action in the Public Sector**, **Women as Leaders**, etc. Specific topics listed in the **Course Schedule**.

PAD 697 Readings in Public Administration (variable credit).

PAD 698 Research in Public Administration (4-0-4). Master's-level research on an approved topic pursued and reported under the direction of a faculty member; research requires the application of rigorous analysis to some substantive problem in public administration. Offered every semester.

Political Science Courses (See Addenda)

PSC 596 Individual Research (one to four credits). Prerequisite: Permission of

instructor. Offered every semester.

[PSC 605 Public Administration and the Political Process \(4-0-4\)](#). Political factors that condition the structure and functions of public agencies, including the public interest, agency constituencies, and political influence.

[PSC 612 Urban Political Processes \(4-0-4\)](#). Study of the interrelated nature of urban social systems and interaction of units constituting the metropolitan polity. Cross-listed with [PDD 612](#) and [UST 612](#).

[PSC 635 Public Sector Management \(4-0-4\)](#). Analysis and discussion of public policy management, leadership, and statesmanship.

[PSC 636 Policy Development and Evaluation \(4-0-4\)](#). Prerequisites: [PSC 605](#) and [PAD/PDD/UST 602](#). Examination of contemporary public policy problems and evaluation of the adequacy of governmental programs designed to deal with them.

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Cleveland State University

2121 Euclid Avenue, Cleveland, Ohio 44115

www.csuohio.edu 216.687.2000

Contact Webmanager

Cleveland State University

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2121 Euclid Avenue, Cleveland, Ohio

44115 • 216.687.2000

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College of Graduate Studies

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Graduate Catalog 2004-2006

Doctor of Philosophy in Regulatory Biology

A joint program with The Cleveland Clinic Foundation

Master of Science in Biology

Department of Biological, Geological, and Environmental Sciences
Science Building Room 219

(216) 687-2440

bgesweb.artscipub.csuohio.edu

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The Faculty

Professors:

Peter C. Baker, Emeritus
Lorry J. Brenner, Emeritus
Wentworth B. Clapham
Ronald L. Clise, Emeritus
R. Jeffrey Dean
Frank DeMarinis, Emeritus
F. Paul Doerder
Michael A. Gates, Chair
Cecilie A. Goodrich, Emerita
Kenneth M. Hoff, Emeritus
Donald G. Lindmark
Howard Lo
Tarun K. Mal
Luigi Messineo, Emeritus
Tobili Y. Sam-Yellowe
Mary Jane Saunders
Michael J.S. Tevesz
Mark A. Tumeo
Harry van Keulen

Associate Professors:

Abdolali Babaei
Robert E. Bast
Joseph D. Fontes
Randall J. Gee, Emeritus
A. Ralph Gibson
Madeline M. Hall, Emerita
Robert A. Krebs
Sally Lewis, Emerita
Barbara K. Modney
Jerome B. Senturia, Emeritus
B. Michael Walton
Crystal M. Weyman
James M. Willard, Emeritus

Assistant Professors:

Barsanjit Mazumder
Julie A. Wolin

The Cleveland Clinic Foundation Faculty:

Manjunatha B. Bhat
Martha K. Cathcart
Clemencia Colmenares
Paul E. DiCorleto
L. Allen Ehrhart
Paul L. Fox
S. Jaharul Haque
Stanley Hazen
Philip H. Howe
Donald W. Jacobsen
Andrew Lerner
Xiaoxia Li
Ronald J. Midura
Christine S. Moravec
Miguel E. Quinones-Mateu
George R. Stark
Dennis J. Stuehr
Vincent Tuohy
Qing Wang
Thomas Weimbs
Alan Wolfman

Adjunct Professors:

Ronald E. Blanton
Miles M. Coburn
Jeffrey R. Johansen
Michael Kalafatis
Joe B. Keiper
Daniel R. Petit
Hugh R. Quinn
Tony L. Sahley
Carol A. Stepien

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Graduate Programs

The Department of Biological, Geological, and Environmental Sciences (BGES) offers programs of course work and research leading to the Master of Science degree in Biology, the Master of Science degree in Environmental Science, and the Doctor of Philosophy in Regulatory Biology. The Doctor of Philosophy may include an optional Molecular Medicine Specialization. These programs are open to both full-time and part-time students.

Department faculty and staff members of The Lerner Research Institute (LRI) of The Cleveland Clinic Foundation (CCF) work in cooperation to offer graduate training in a broad range of biological sciences. For example, molecular and cell biologists at both Cleveland State and the LRI study regulation of signal transduction and gene transcription in cell division, programmed cell death, and cell differentiation in the context of normal development and disease states that include cancer, cardiovascular disease, and autoimmune and neurological disorders. Other Cleveland State faculty participate in several programs focusing on local ecological and environmental issues that provide opportunities for graduate research; these include the Cuyahoga River Watershed Project, the OhioView consortium on remote sensing, and the Great Lakes Environmental Genetics Laboratory at Cleveland State's Center for Environmental Science, Technology, and Policy.

As a joint venture with the Cleveland Clinic's Lerner Research Institute, the doctoral program provides a unique opportunity for students to conduct research at one of the nation's top medical-research institutes. The Research Institute is directly connected to the medical facilities of The Cleveland Clinic Foundation, enabling basic-research scientists to address clinically relevant research questions, collaborate with medical practitioners, and utilize clinical material for research. The optional Molecular Medicine Specialization is designed to capitalize on this resource.

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Faculty Research

The BGES graduate faculty includes members of the Cleveland State faculty, staff members of The Lerner Research Institute of The Cleveland Clinic Foundation, and several adjunct faculty members at other local institutions. Through this cooperation, a wide range of specialization is available. Details are available on the BGES web site.

Departmental facilities include a large animal-care facility, cold rooms, darkrooms, fluorescent and light microscopes, environmental chambers, a greenhouse, and an assortment of computers with Internet access. The department also utilizes the newly established DNA Sequencing Facility and space in field stations in the Cuyahoga Valley National Park and in Belize. Most Cleveland Clinic Foundation faculty are located in the new Research and Education Building of The Lerner Research Institute with its state-of-the-art facilities, including a vivarium and core facilities for biotechnology, transgenic mice, flow cytometry, microscopy, protein sequencing, and hybridoma work.

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Career Information

Graduates are employed in research, teaching, and administrative positions in private industry, hospitals, governmental agencies, environmental action groups, and colleges and universities in the Cleveland area, throughout the U.S., and abroad. The graduate program also attracts established teachers, research scientists, and management and staff in diverse businesses with a biological or biomedical focus. The graduate program is open to full-time and part-time students as well as to non-degree students who are preparing themselves for entry into degree programs or are seeking to keep abreast of new developments in their fields of interest.

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Admission Requirements

Applicants must meet College of Graduate Studies admission requirements regarding grade-point average, Graduate Record Examination (GRE) scores, and TOEFL results. Applicants must have submitted official transcripts for all undergraduate and any previous graduate study, the GRE General Test scores, two letters of recommendation, and a statement of personal career goals and research interests. Applicants whose native language is not English must demonstrate English-language proficiency by submitting official scores for the TOEFL, the Michigan Test, or an equivalent examination, unless they hold a degree from a U.S. institution. International students are strongly advised to take the Test of Spoken English (TSE) if applying for a Graduate Assistantship. (See the section on [International Students](#) in this Catalog.)

Applicants must have a minimum of one semester of statistics or calculus, one semester of organic chemistry, one semester of physics, and a strong background in biology that is essentially equivalent to the Cleveland State undergraduate core curriculum. Questions should be directed to the BGES Graduate Program Director.

Submit application materials to the [Graduate Admissions Office](#) (U.S. citizens and permanent residents) or the Center for International Services and Programs (international applicants and current visa holders).

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Graduate Assistantships/ Fellowships

Full-time graduate students pursuing thesis or dissertation research may be supported through teaching assistantships or fellowships by the department for a period that, as a rule, should not exceed three years for the M.S. or five years for the Ph.D. This support includes tuition and a

stipend. Full-time teaching assistants are expected to work 20 hours per week and must enroll as full-time students (currently nine credit hours, including research credits). Research assistantships may be available through the research grants of individual faculty. A limited number of graduate tuition, which carry a service requirement of 10 hours of work per week, can be awarded to students with superior credentials, as funds are available. Requests for assistantships should be indicated on the Application for Graduate Admission or by letter to the BGES Graduate Program Director. Awards are competitive, based on all application materials. Initial decisions usually are made based on completed applications on hand in March for fall semester and, if assistantships are available, in November for spring semester. Required minimums for grade-point average, GRE scores, and TOEFL score are higher than those for admission to the program; non-native English speakers must pass the Test of Spoken English or the University's SPEAK test of verbal proficiency in order to hold a teaching assistantship.

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Cleveland State/Cleveland Clinic Molecular Medicine Specialization

Depending on their research interests, applicants to the Ph.D. program may wish to consider participation in the Molecular Medicine Specialization, an interdisciplinary initiative linking the resources of the three Cleveland State/Cleveland Clinic joint Ph.D. programs: Regulatory Biology, Clinical-Bioanalytical Chemistry, and Applied Biomedical Engineering. Together these units provide unparalleled opportunities for faculty, students, and staff. The Molecular Medicine Specialization is not an independent academic program and does not replace existing doctoral programs. BGES students must fulfill the requirements for the Ph.D. in Regulatory Biology.

The Molecular Medicine Specialization forms a logical interface to coordinate collective efforts of existing programs in four ways: 1) by creating a significant presence in the challenging and exciting new area of Molecular Medicine; 2) by establishing a critical mass of researchers around a topic of national scientific and applied medical interest; 3) by realizing the commitment of Cleveland State and CCF in their long-standing collaboration to become a major contributor in biomedical engineering and biomedical technology; and 4) by expanding the existing doctoral programs beyond their present state of development. As part of its contribution to these efforts, the Molecular Medicine Specialization makes available several graduate assistantships to allow outstanding candidates to concentrate on their research for two years. Additional details can be obtained from the BGES Graduate Program Director or from the Director of the Molecular Medicine Specialization.

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Common Degree Requirements

Before registering for courses, all newly admitted students must meet with the BGES Graduate Program Director. All students are required to enroll in the BGES Graduate Orientation course (BIO 500) and to attend departmental seminars. Students also must comply with all College of Graduate Studies requirements and procedures.

Minimum grade-point averages exist for particular degree options as described below. A student receiving two grades of B- or one grade of C or below is subject to review by the BGES Graduate Committee; dismissal from the Biology graduate program may be recommended. Complete, current program requirements and any changes are described in the BGES Graduate Program Handbook available from the BGES Graduate Program Office.

To facilitate the admission process, it is strongly recommended that applicants use the online application system at www.csuohio.edu/admissions/gradForm.html. The processing time for paper application forms is longer.

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Doctor of Philosophy Degree in Regulatory Biology

The Ph.D. program provides a comprehensive background in biological science with a focus on regulation in biological systems ranging from the molecular to the ecosystem level. Cleveland State University and The Cleveland Clinic Foundation offer the program jointly. Besides course work, a comprehensive exam, and teaching experience, the degree requires a written dissertation based on original scientific research of sufficient quality for publication in a peer-reviewed scientific journal.

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Requirements

1. Selection of a Major Advisor and an Advisory Committee. The Major Advisor typically is the primary supervisor and source of support for the student's dissertation research. Together, the Major Advisor and Advisory Committee supervise the student's plan of study and research proposal, monitor the student's progress, certify that requirements have been met in a timely fashion, and process all petitions, progress reports, and other communications with the BGES Graduate Committee.

2. Completion of a minimum of 90 credit hours—with a minimum grade-point average of 3.00—distributed as follows:

a. Total course work and research

Courses (minimum) 32 credits

Research (minimum) 40 credits

Additional courses or research 18 credits

Total minimum 90 credits

b. Required courses: Each Ph.D. student must complete BIO 700 and BIO 702 (Graduate Orientation), BIO 704 (Biological Chemistry), BIO 740 (Biostatistics) or an equivalent statistics course, and BIO 784 (Writing and Editing Grant Proposals) or an equivalent.

c. Seminars: Each Ph.D. student must complete at least four seminar courses (BIO 888).

d. Remaining courses: Each Ph.D. student formulates an individual plan of study in consultation with the Major Advisor and the Advisory Committee. This includes areas of course-work concentration as well as any additional elective courses needed to fulfill degree requirements described above.

e. Research: The student's individual research project should be of sufficient quality to be published in a refereed scientific journal.

3. Satisfactory fulfillment of a teaching requirement consisting of the following:

a. Two one-hour lectures under the supervision of a professor in (preferably) one introductory and one advanced course.

b. Service as a teaching assistant is not required, but such service in one lower-division and one upper-division laboratory is strongly recommended for students pursuing an academic career.

4. Admission to candidacy. Satisfactory completion of the Doctoral Candidacy Examination admits the student to candidacy for the Ph.D. This oral examination takes as its point of departure an original research grant proposal written by the student in the general area of the student's research. The intent of the examination is to provide a fair appraisal of the student's general knowledge and understanding of biology and in-depth knowledge of the areas relevant to the student's doctoral research and cognate areas indicated by the student's course work and plan of study. Additional study or course work may be required as a result of this examination.

Two unsuccessful attempts to pass this examination shall result in a recommendation for dismissal from the program.

5. Completion of at least one year (i.e., three consecutive terms) in residence as a full-time student (as defined by the University) after admission to candidacy. Degree candidates must be continuously enrolled for a minimum of one credit hour from admission to candidacy until graduation.

6. Exit requirements:

- a. Presentation of the dissertation research at a departmental seminar.
- b. Defense of the dissertation before a faculty committee.

Two unsuccessful attempts to defend the dissertation shall result in dismissal from the program.

c. Submission of the approved dissertation together with an article based on the dissertation, in a format suitable for submission to a refereed scientific journal.

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Master of Science Degree in Biology

The Master of Science degree may be earned via either a thesis or a non-thesis program. A student will be admitted to candidacy when the following requirements are met:

1. Deficiencies in undergraduate preparation are satisfied.
2. Eight graduate hours of course work are completed with a grade-point average of 3.00 or better.
3. A plan of study and, for the thesis option, the research proposal are approved by the Advisory Committee and accepted by the Graduate Committee, and the Cleveland State Thesis Proposal Approval Form is submitted to and approved by the Graduate Dean.

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Thesis Option

Besides course work, the degree requires a thesis based on original scientific research of sufficient quality for publication in a peer-reviewed scientific journal.

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Requirements

1. Selection of a Major Advisor and an Advisory Committee. The Major Advisor typically is the primary supervisor and source of support for the student's thesis research. Together, the Major Advisor and Advisory Committee supervise the student's plan of study and research proposal, monitor progress, certify that requirements have been met in a timely fashion, and process all petitions, progress reports, and other communications with the Graduate Committee.
2. Completion of a minimum of 32 credit hours—with a minimum grade-point average of 3.00—distributed as follows:

a. Total course work and research

Courses (minimum) 23 credits Research (minimum) 8 credits Additional courses or research 1 credit

Total minimum* 32 credits

*College of Graduate Studies regulations specify that all BIO courses must be 500-level or above; not more than seven credit hours of 400-level courses in related areas and not offered by the BGES Department may be included if approved by the Advisory Committee and the BGES Graduate Committee.

- b. Required courses: Each student must complete **BIO 500** and **BIO 502** (Graduate Orientation), **BIO 504** (Biological Chemistry), and **BIO 540** (Biostatistics) or an equivalent statistics course.
- c. Seminars: Each M.S. student must complete at least three seminar courses (**BIO 688**).
- d. Remaining courses: Each student formulates an individual plan of study in consultation with the Major Advisor and the Advisory Committee. This includes areas of course-work concentration as well as any additional elective courses needed to fulfill degree requirements described above.
- e. Thesis research: The student's individual research project should be of sufficient quality to be published in a refereed scientific journal.

3. Continuous enrollment for a minimum of one credit hour from admission to candidacy until graduation.

4. Exit Requirements:

- a. Presentation of the thesis research at a departmental seminar.
- b. Defense of the thesis before a faculty committee. Two unsuccessful attempts to defend the thesis shall result in **dismissal** from the program.
- c. Submission of the approved thesis together with an article based on the thesis, in a format suitable for submission to a refereed scientific journal.

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Non-Thesis Option

Students in the non-thesis option may earn the M.S. degree in Biology by completing a minimum of 32 credit hours of course work and passing a comprehensive examination based on a **Library** Research Paper containing a critical review of original scientific literature on a topic chosen by the student. The Graduate Program Director serves as the Advisor.

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Requirements

1. Completion of a minimum of 32 credit hours—with a minimum **grade-point** average of 3.20—distributed as follows:

a. Total course work* 32 credits

*May not include research credits (e.g., **BIO 691** or **BIO 695**) or BIO/EVS courses below the 500-level; not more than seven credit hours of 400-level courses in related areas and not offered by the BGES Department may be included if approved by the advisor and the BGES Graduate Committee.

b. Required courses: Each M.S. student must complete **BIO 500** (Graduate Orientation), **BIO 504** (Biological Chemistry), **BIO 690** (see Exit requirements), and a course in statistics if not previously taken.

- c. Seminars: Each M.S. student must complete at least three seminar courses (BIO 688).
- d. Remaining courses: Each M.S. student formulates an individual plan of study in consultation with the Graduate Program Director. This includes areas of course-work concentration as well as any additional elective courses needed to fulfill degree requirements described above.
2. Exit requirements: Selection of an Examining Committee to supervise the Library Research Paper. Successful completion of the comprehensive examination (BIO 690) by presenting and defending the Library Research Paper before the Examining Committee. Two unsuccessful attempts to pass the comprehensive examination shall result in dismissal from the program.

Courses (See Addenda)

Courses numbered 500-699 are intended for students seeking the M.S. degree. Courses numbered 700-899 are intended for students seeking the Ph.D. degree. For joint courses, students enrolled at the 700/800 level are expected to make more substantial contributions in papers, presentations, projects, etc., and are graded more stringently than students enrolled at the 500/600 level.

See the Master of Science in Environmental Science section of this Catalog for additional BGES course listings.

BIO 500/700 Graduate Orientation I (1-0-1). Topics include program rules and regulations, research opportunities, scientific writing, and scientific ethics.

BIO 502/702 Graduate Orientation II (1-0-1). Topics include rules and regulations, laboratory and radiation safety, and animal care and handling.

BIO 504/704 Biological Chemistry (3-0-3). Prerequisite: BIO 306 or equivalent. Metabolic reactions of the cell for energy production and storage. Structure and function of proteins, carbohydrates, and lipids. Regulation and control of metabolic pathways.

BIO 506/706 Computer Applications in Biology (3-0-3). Uses of computer methods in the biological sciences. Emphasis is placed on computer applications, including programming languages, statistical analysis software, electronic communication, and text-processing tools. An applications-oriented final project is required, as well as regular, interactive computer exercises.

BIO 510/710 Practice and Theory of Light Microscopy (3-0-3). Prerequisite: Permission of instructor; co-requisite: BIO 511/711. In-depth consideration of principles and diverse modes of light microscopy, which are of major importance in biological research, and aspects of microtechnique.

BIO 511/711 Practice and Theory of Light Microscopy Laboratory (0-2-1). Prerequisite: Permission of instructor; co-requisite: BIO 510/710. In-depth consideration of principles and diverse modes of light microscopy, which are of major importance in biological research, and aspects of microtechnique. Course includes demonstrations and student projects to be undertaken outside scheduled class time.

BIO 512/712 Immunology (2-0-2). Prerequisites: BIO 308/309, BIO 412/413, and BIO 504/704; co-requisite: BIO 513/713. The study of immune cell development, organization and expression of immunoglobulin and T cell receptor genes, including antigen processing and presentation, cytokine regulation, apoptosis, immunity to infections, diseases, and vaccines.

BIO 513/713 Immunology Laboratory (0-4-2). Prerequisites: BIO 308/309, BIO 412/413, and BIO 504/704; co-requisite: BIO 512/712. The laboratory covers antibody production, general immunoassays, tissue culture techniques, and genetic engineering techniques.

BIO 514/714 Parasitology (2-0-2). Co-requisite: BIO 515/715. A basic course in animal

parasitology, including ecology, life histories, host-parasite relationships.

BIO 515/715 Parasitology Laboratory (0-4-2). Co-requisite: **BIO 514/714.** Selected exercises designed to reinforce concepts covered in BIO 514/714.

BIO 516/716 Microbiology (3-0-3). Co-requisite: **BIO 517/717.** Structure, function, and genetics of major groups of microorganisms, with emphasis on bacteria; the role of microbes in the economy of nature and man.

BIO 517/717 Microbiology Laboratory (0-2-1). Co-requisite: **BIO 516/716.** The techniques of identification, manipulation, and quantification of microbes.

BIO 518/718 Histology (3-0-3). Co-requisite: **BIO 519/719.** Structure of mammalian cells, tissues, and organs with emphasis on relations of structure and function.

BIO 519/719 Histology Laboratory (0-2-1). Co-requisite: **BIO 518/718.** Laboratory study of mammalian cells, tissues, and organs with emphasis on relations of structure and function.

BIO 520 Explorations in Biology: Inquiry-Based Investigations of Urban Ecosystems (1-2-2). A weeklong introduction to the ecology of human-dominated ecosystems. Lectures and laboratories consider biodiversity, human impacts on ecosystems and vice versa, and ecological monitoring programs and their integration into school curricula. Intended for upper elementary, middle, and high school teachers. Held at the Woodlake Environmental Field Station, Peninsula, Ohio.

BIO 522/722 Mammalian Physiology (3-0-3). Co-requisite: **BIO 523/723.** Physiology of major organ systems of vertebrates, with an emphasis on mammalian physiology.

BIO 523/723 Mammalian Physiology Laboratory (0-2-1). Co-requisite: **BIO 522/722.** Exercises that emphasize modern methods of physiological measurement, and the analysis and presentation of physiological data.

BIO 526/726 Neurobiology (3-0-3). Prerequisite: **BIO 302** or equivalent. Exploration of the relation of behavior to neural function; topics include basic neurophysiology and properties of sensory and motor systems illustrated with human and non-human examples.

BIO 527/727 Neurobiology Laboratory (0-4-2). Prerequisite or co-requisite: **BIO 526/726,** or equivalent and permission of instructor. Classical invertebrate experiments that provide an introduction to standard neurobiological techniques for studying neural activity, including simple dissection, stimulating and recording neural activity, and analyzing data.

BIO 528/728 Endocrinology (3-0-3). Introduction to functions of hormones and endocrine glands, including mechanisms controlling hormone secretion; mammalian systems are emphasized.

BIO 530/730 Bioinformatics (3-0-3). Prerequisites: **BIO 306** and **BIO 310,** or equivalents, or permission of instructor. A course in either statistics or computer science is highly recommended. Introduction to the tools and techniques of bioinformatics, with emphasis on computational techniques to analyze genomic and proteomic data. Topics include searching of databases, sequence alignment and analysis, phylogenetic methods, and computer programming to analyze database information. A project using original or Internet bioinformatics tools is required.

BIO 534/734 Elements of Pharmacology (3-0-3). Prerequisite: **BIO 306,** and **BIO 422** or **BIO 424,** or permission of instructor. An analysis of the basic principles of the pharmacokinetics and pharmacodynamics of selected therapeutic agents. Emphasis is on the experimental basis of drug discovery, design, and clinical use.

BIO 535/735 Techniques in Molecular Biology (1-6-4). Prerequisite: Permission of instructor. A lecture/laboratory course in the fundamentals of modern biotechnology with emphasis on the techniques and procedures of molecular biology. Students work together to

complete a project.

BIO 536/736 Evolutionary Genetics (3-0-3). An introduction to the modern theory of evolutionary genetics, including development of the concepts of genetic diversity, natural selection, random genetic drift, population substructure, infinite-alleles models, and the neutral theory of molecular evolution.

BIO 540/740 Biostatistics (3-0-3). Introductory course in biostatistics, including probability, statistical inference, hypothesis testing, regression, and other analytical statistical methods applicable to biology.

BIO 542/742 Morphometrics (3-0-3). Application of mathematical and statistical methodology to problems of biological structure and functional form. Individual projects involve detailed morphometric analyses of real data.

BIO 550/750 Evolutionary Biology (3-0-3). Prerequisite: BIO 304 or equivalent. Advanced lectures on evolution that consider traits, genes, and their interaction with environmental variation. Topics include the basic quantitative methods required to interpret evolutionary change, the consequences of population structure, molecular approaches to phylogenetic studies, and the changes in genetic variation under different models of selection, drift, migration, and mutation.

BIO 552/752 Marine Ecology (3-0-3). Prerequisites: BIO 300 or BIO 301, and BIO 304, or equivalents. An advanced ecology course that encompasses marine biology, ecological adaptations of organisms to the marine environment, and interspecific interactions. This course covers marine habitats and the specializations of organisms that live in them.

BIO 554/754 Ecology (3-0-3). Prerequisite: BIO 304 or equivalent. Study of interactions of organisms within their environment, including growth and regulation of populations, communities, energetics of organisms and ecosystems, life-history evolution, and systems ecology.

BIO 555/755 Ecology Laboratory (0-4-2). Prerequisite: BIO 304 or equivalent. Selected exercises designed to reinforce concepts covered in BIO 554/754 and to provide field experience in ecology. The laboratory includes a few one-day field trips on weekends.

BIO 558/758 Behavior (3-0-3). An introduction to and survey of animal behavior from an evolutionary perspective.

BIO 562/762 Evolutionary Ecology of Sexual Reproduction (3-0-3). Prerequisite: BIO 300 or BIO 302 or permission of instructor. Although organisms spend huge amounts of energy in carrying out activities related to sexual reproduction, it is by far the most dominant mode of reproduction. But why? This course explores that question and examines various modes of sexual reproduction in diverse organisms in an evolutionary context.

BIO 564/764 Developmental Biology (3-0-3). Prerequisite: A course in embryology or developmental biology; co-requisite: BIO 565/765. An experimental analysis of the mechanisms of development with emphasis on events at the molecular, cellular, and tissue levels of organization.

BIO 565/765 Developmental Biology Laboratory (0-2-1). Prerequisite: A course in embryology or developmental biology; co-requisite: BIO 564/764. An experimental analysis of the mechanisms of development with emphasis on events at the molecular, cellular, and tissue levels of organization.

BIO 570/770 Protozoology (3-0-3). Prerequisite: A course in microbiology; co-requisite: BIO 571/771. Classification, morphology, and physiology of protozoa.

BIO 571/771 Protozoology Laboratory (0-2-1). Prerequisite: A course in microbiology; co-requisite: BIO 570/770. Laboratory methods for isolation, examination, manipulation, and experimentation with protozoa.

BIO 572/772 Wetland Ecology (3-2-4). Prerequisites: BIO 300 and BIO 304 or equivalent, or permission of instructor. A study of the interaction of physical, geochemical, and biological components of wetland ecosystems. Adaptations of organisms in wetland ecosystems and community interactions are emphasized. Field and laboratory study give students experience in inquiry-based activities involving data collection and analyses used in wetland ecology. Techniques in wetland characterization and delineation are covered.

BIO 574/774 Stream Ecology (3-2-4). Prerequisite: BIO 300 or 302 or 304 or equivalent. A study of the interaction of physical, geochemical, and biological components in stream ecosystems. Adaptations of organisms in aquatic environments, community interactions, and ecosystem energetics are emphasized. Field and laboratory study give students experience in inquiry-based activities involving data collection and stream ecosystem analyses. Techniques in stream habitat and water-quality assessment are covered. An eight-week summer course held at Woodlake Environmental Field Station, Peninsula, Ohio.

BIO 576/776 Plant Biochemistry (3-0-3). Co-requisite: BIO 577/777. Basic physiological processes in plants; photosynthesis, uptake of nutrients, respiration, growth, and the role of hormones and enzymes involved in these processes.

BIO 577/777 Plant Biochemistry Laboratory (0-2-1). Co-requisite: BIO 576/776. Selected exercises designed to reinforce concepts covered in BIO 576/776.

BIO 578/778 Morphology of Flowering Plants (3-0-3). Prerequisite: Any botany course for biology majors, or permission of instructor; co-requisite: BIO 579/779. Study of the overall form, the development, and to a minor extent, the microscopic structure of the vegetative and reproductive structure of flowering plants (angiosperms).

BIO 579/779 Morphology of Flowering Plants Laboratory (0-2-1). Prerequisite: Any botany course for biology majors, or permission of instructor; co-requisite: BIO 578/778. Study of the overall form, the development, and to a minor extent, the microscopic structure of the vegetative and reproductive structure of flowering plants (angiosperms).

BIO 580 Biology Content for Middle School Teachers (3-4-5). Enrollment is restricted to in-service middle school teachers without science specialty and students enrolled in the M.Ed. Middle School Science program. No credit towards completion of a graduate degree in biology. Biological concepts relevant to teaching middle-school-level biology are discussed and related to timely issues. Lectures coordinate with laboratory exercises and inquiry-based activities.

BIO 584/784 Writing and Editing Grant Proposals (1-0-1). The fundamentals of preparing grant proposals to private, state, and federal agencies. Key topics include formulating specific experimental aims, experimental design, critique, and re-submission.

BIO 593 Special Topics in Biology (3-0-3). Prerequisite: Permission of instructor. Study of a particular topic in biology. Topics to be announced in semester Course Schedule. May be repeated for credit with change of topic.

BIO 594 Special Topics in Biology (4-0-4). Prerequisite: Permission of instructor. Study of a particular topic in biology. Topics to be announced in semester Course Schedule. May be repeated for credit with change of topic.

BIO 595 Environmental Seminar (1-0-1). Prerequisite: Permission of instructor. An interdisciplinary seminar addressing the scientific, technological, and policy aspects of environmental issues. Primarily for students seeking the M.S. degree in Environmental Science.

BIO 596/796 Independent Study in Biology (0-4-2). Prerequisite: Permission of Graduate Program Director. Special research problem or independent study course. May be repeated for credit with change of topic.

BIO 597/797 Independent Study in Biology (0-8-4). Prerequisite: Permission of Graduate Program Director. Special research problem or independent study course. May be repeated for

credit with change of topic.

BIO 602/802 Enzymology (3-0-3). Prerequisite: BIO 504/704 or equivalent. General consideration of enzyme nomenclature, purification, assay, introductory kinetics and mechanisms, cofactors, active sites, sub-unit structure, allosteric and regulatory properties, and the control of multi-enzyme systems.

BIO 604/804 Cell Biology (3-0-3). Examination of basic cellular processes, including structure and function of organelles and biomembranes, intracellular transport, cell motility and shape, and cellular signaling events as they relate to proliferation, differentiation, apoptosis, and integration of cells into tissues. Consideration of experimental basis with extensive use of the primary literature.

BIO 606/806 Pharmacology (3-0-3). The study of specific drug actions with regard to organ systems; covers specific drugs, their mechanisms of action as well as their pharmacological effects; therapeutic actions of drugs are stressed.

BIO 608/808 Pharmacodynamics (3-0-3). Principles of the interaction between drugs and tissues.

BIO 610/810 Molecular Biology and Genetics (3-0-3). Prerequisite: BIO 504/704 or equivalent. Structure and function of nucleic acids. Replication, modification, and recombination of DNA. Transcription, translation, and regulation of transcription and translation.

BIO 612/812 Microbial Physiology (3-0-3). Prerequisites: BIO 416 and BIO 504/704, or equivalents. Microbial growth and reproduction considered at the molecular level; discussions of structure, growth kinetics, synthesis of DNA, RNA, and protein, regulation of metabolism, and other biological molecules; physiology; metabolic pathways of bacteria, fungi, and protozoans.

BIO 616/816 Proliferative Signal Transduction (3-0-3). Prerequisite: BIO 504/704. A general overview of the cell cycle and consideration of factors involved in proliferative signal transduction at the cell surface.

BIO 622/822 Advanced Vertebrate Physiology (3-0-3). Prerequisites: BIO 200/201 and BIO 202/203 or equivalents, and suitable background in chemistry and physics. Physiology of major organ systems of vertebrates, with an emphasis on mammalian physiology and a major focus on system characteristics, including concepts of homeostasis, feedback regulation, stability, and dynamics.

BIO 624/824 Foundations of Biomedical Physiology (3-0-3). Prerequisite: BME doctoral student status or permission of instructor. A graduate-level introduction providing a foundation for applied and basic research in human and mammalian physiology, including basic information and current active research.

BIO 630/830 Recombinant DNA Techniques (3-0-3). Prerequisite: BIO 504/704. Theoretical background and practical application of plasmids, restriction and modifying enzymes, lambda phage, and vectors. Discussion of genomic and DNA libraries and a variety of detection systems for isolating and characterizing cloned DNA, including hybridization techniques and DNA sequence analysis.

BIO 632/832 Population Genetics (3-0-3). Prerequisite: Permission of instructor. Theoretical analysis of the mechanisms and consequences of allele frequency changes in populations of organisms.

BIO 634/834 Developmental Genetics (3-0-3). Prerequisite: BIO 504/704. A molecular genetics course. Genetics of development in single and multicellular systems, with emphasis on programmed and differential gene expression.

BIO 638/838 Advances in Cell Biology (3-0-3). Prerequisite: Permission of instructor. In-depth study of significant, recent conceptual or methodological advances in cell biology. Topic

varies with instructor. May be repeated for credit with change of topic.

BIO 640/840 Molecular Evolutionary Genetics (3-0-3). Prerequisite: Permission of instructor. Theoretical and practical analyses of genomic evolution at the molecular level. Individual projects involve quantitative studies of nucleotide and protein sequences.

BIO 651/851 Advanced Research in Field Biology (0-6-3). Prerequisite: Previous course work in ecology, evolution, behavior, or conservation biology, or permission of instructor. Examines field techniques for the analysis of biodiversity and ecological relationships through participation in field research projects. Some study sites are in remote, primitive locations and may involve international travel. See instructor for location, costs, and preparations necessary for the course.

BIO 653/853 Advanced Research in Field Biology (0-8-4). Prerequisite: Previous course work in ecology, evolution, behavior, or conservation biology, or permission of instructor. Four-credit version of BIO 651/851.

BIO 656/856 Environmental Physiology (3-0-3). Prerequisite: BIO 424/425 or equivalent. Physiological adaptations to environmental problems; major environmental variables considered: food and energy, light, temperature, oxygen, water, and salinity; adaptations to daily and seasonal changes in the environment.

BIO 670/870 Advances in Biology (2-0-2). Prerequisite: Permission of BGES Graduate Committee. In-depth study of significant, recent conceptual or methodological advances in modern biology explored through lectures, discussion, and readings of the primary literature. Topic varies with instructor. May be repeated for credit with change of topic.

BIO 672/872 Advances in Molecular Biology (3-0-3). Prerequisite: Permission of BGES Graduate Committee. In-depth study of significant, recent conceptual or methodological advances in molecular biology. Topic varies with instructor. May be repeated for credit with change of topic.

BIO 674/874 Advances in Ecology (3-0-3). Prerequisite: Permission of BGES Graduate Committee. In-depth study of significant, recent conceptual or methodological advances in ecology. Topic varies with instructor. May be repeated for credit with change of topic.

BIO 676/876 Advances in Physiology (3-0-3). Prerequisite: Permission of BGES Graduate Committee. In-depth study of significant, recent conceptual or methodological advances in physiology. Topic varies with instructor. May be repeated for credit with change of topic.

BIO 678/878 Advances in Evolution (3-0-3). Prerequisite: Permission of BGES Graduate Committee. In-depth study of significant, recent conceptual or methodological advances in evolution. Topic varies with instructor. May be repeated for credit with change of topic.

BIO 684/884 Research Seminar (1-0-1) (See Addenda - January 01, 2005)

BIO 688 Graduate Seminar (M.S.) (1-0-1). Topic varies with instructor. May be repeated for credit with change of topic.

BIO 690 Qualifying Examination (non-thesis M.S.) (1-0-1). Prerequisite: Permission of BGES Graduate Committee. Examinations in selected areas of biology. Graded S, F, I.

BIO 691 M.S. Research (one to 12 credits). Prerequisite: Approval of BGES Graduate Program Director. Research prior to approval of the Cleveland State Thesis Research Proposal Approval Form for students seeking the M.S. degree. Graded S, NS, F, T.

BIO 693 Graduate Project (M.S.) (0-4-2). Prerequisite: Approval of project supervisor. An independent research project terminating with a written report. May be repeated for credit to a limit of six credit hours. Graded S, F, I.

BIO 694 Graduate Project (M.S.) (0-6-3). Three-credit version of BIO 693. Graded S, F, I.

BIO 695 M.S. Thesis Research (one to 12 credits). Prerequisite: Approval of BGES Graduate Program Director. Research following submission of the Cleveland State Thesis Research Proposal Approval Form for students seeking the M.S. degree. Graded S, NS, F, T.

BIO 888 Ph.D. Seminar (1-0-1). Topic varies with instructor. May be repeated for credit with change of topic.

BIO 891 Ph.D. Research (one to 12 credits). Prerequisite: Approval of BGES Graduate Program Director. Research prior to approval of the Cleveland State Dissertation Research Proposal Approval Form for students seeking the Ph.D. degree. Graded S, NS, F, T.

BIO 895 Ph.D. Dissertation Research (one to 12 credits). Prerequisite: Approval of BGES Graduate Program Director. Dissertation research following submission of the Cleveland State Dissertation Research Proposal Approval Form for students seeking the Ph.D. degree. Graded S, NS, F, T.

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Cleveland State University

2121 Euclid Avenue, Cleveland, Ohio 44115

www.csuohio.edu 216.687.2000

Contact Webmanager

Cleveland State University

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2121 Euclid Avenue, Cleveland, Ohio

44115 • 216.687.2000

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College of Graduate Studies

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Graduate Catalog 2004-2006

Master of Science in Environmental Science

This degree is part of the Environmental Studies Program coordinated by the Cleveland State University Center for Environmental Science, Technology, and Policy

Department of Biological, Geological, and Environmental Sciences

Science Building Room 219

(216) 687-2440

bgesweb.artscipub.csuohio.edu

Professors:

Peter C. Baker, Emeritus
 Lorry J. Brenner, Emeritus
 Wentworth B. Clapham
 Ronald L. Clise, Emeritus
 R. Jeffrey Dean
 Frank DeMarinis, Emeritus
 F. Paul Doerder
 Michael A. Gates, Chair
 Cecilie A. Goodrich, Emerita
 Kenneth M. Hoff, Emeritus
 Donald G. Lindmark
 Howard Lo
 Tarun K. Mal
 Luigi Messineo, Emeritus
 Tobili Y. Sam-Yellowe
 Mary Jane Saunders
 Michael J.S. Tevesz
 Mark A. Tumeo
 Harry van Keulen

Associate Professors:

Abdolali Babaei
 Robert E. Bast
 Joseph D. Fontes
 Randall J. Gee, Emeritus
 A. Ralph Gibson
 Madeline M. Hall, Emerita
 Robert A. Krebs
 Sally Lewis, Emerita
 Barbara K. Modney
 Jerome B. Senturia, Emeritus
 B. Michael Walton
 Crystal M. Weyman
 James M. Willard, Emeritus

Assistant Professors:

Barsanjit Mazumder
 Julie A. Wolin

Adjunct Professors:

Ronald E. Blanton
 Miles M. Coburn
 Jeffrey R. Johansen
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 Joe B. Keiper
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Hugh R. Quinn
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Introduction

The Master of Science degree in Environmental Science is offered by the Department of Biological, Geological, and Environmental Sciences (BGES) as one of three interdisciplinary graduate programs coordinated by the Center for Environmental Science, Technology, and Policy (CESTP). The degree program prepares students for a wide range of professional careers that require knowledge of biology, chemistry, or earth sciences in order to address environmental issues. The program is open to both full-time and part-time students.

The program is administered by the department's [graduate faculty](#), which includes Cleveland State faculty, research scientists at The Lerner Research Institute of The Cleveland Clinic Foundation, and several Cleveland State University adjunct faculty members from other local institutions.

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Faculty Research

Faculty research in the environmental science area includes plant and animal ecology, species evolution, urban ecology and geology, remote sensing, local flora and fauna, microbiology, population genetics, ecological physiology, parasitology, modeling, pollution, waste management, and aquatic biology. The department is active in several cooperative projects that provide additional research opportunities for graduate study. The Cuyahoga River Watershed Project, supported by a group of local institutions including several colleges and universities and the Ohio EPA, is an interdisciplinary study of the ecology of an urban river. The OhioView consortium studies the application of remote sensing to a variety of environmental issues. The Great Lakes Environmental Genetics Laboratory at Cleveland State's Center for Environmental Science, Technology, and Policy applies modern molecular methods to problems of basic and applied interest.

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Career Information

The M.S. degree program with its research thesis focus prepares students conceptually and technically for careers in applied or basic research in academic, government, or business settings. The graduate program attracts teachers, environmental scientists, and management and staff in diverse businesses with an environmental focus. The graduate program is open to full-time and part-time students as well as to non-degree students who are preparing themselves for entry into a degree program or are seeking to keep abreast of new developments in their field of interest.

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Admission Information

Applicants must meet the [College of Graduate Studies](#) admission requirements regarding [grade-point average](#), [Graduate Record Examination \(GRE\)](#) scores, and [TOEFL](#) results. A bachelor's degree is preferred in a science appropriate to the student's area of concentration (biology, chemistry, or geology). Transcripts must be submitted for all undergraduate and any previous graduate study. Scores for the [GRE General Test](#) must be submitted by ETS, and two letters of recommendation and a statement of personal career goals and research interests must be submitted by the applicant. Scores on the [GRE](#) must average at the 50th percentile or above. Applicants whose native language is not English must demonstrate English language

proficiency by submitting official scores for the TOEFL, the Michigan Test, or an equivalent examination, unless they hold a degree from a U.S. institution. International students are strongly advised to take the Test of Spoken English (TSE), if applying for a Graduate Assistantship. (See the section on [International Students](#) in this Catalog.)

Applicants must have a minimum of one year of calculus, one year of physics, one year of either biology, geology, or chemistry, and one term of a computer course or demonstrated proficiency in computer usage. Questions should be directed to the BGES Graduate Program Director.

Submit application materials to the [Graduate Admissions](#) Office (U.S. citizens and permanent residents) or the Center for International Services and Programs (foreign applicants and current visa holders).

To facilitate the admission process, it is strongly recommended that applicants use the online application system at www.csuohio.edu/admissions/gradForm.html. The processing time for paper application forms is longer.

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Graduate Assistantships/ Fellowships

Full-time graduate students pursuing thesis research may be supported by the department through teaching [assistantships](#) or fellowships for a period that, as a rule, should not exceed three years. This support includes tuition and a stipend. Teaching assistants are required to work 20 hours per week and must enroll as full-time students (currently nine credit hours, including research credits). Research [assistantships](#) may be available through the research grants of individual faculty. A limited number of [graduate tuition](#), which carry a service requirement of 10 hours of work per week, can be awarded to students with superior credentials as funds are available. Requests for [assistantships](#) should be indicated on the Application for Graduate Admission or by letter to the BGES Graduate Program Director. Awards are competitive and are based on all application materials. Initial decisions usually are made based on completed applications on hand in March for fall semester and, if [assistantships](#) are available, in November for spring semester. Required minimums for [grade-point](#) average and for [GRE](#) and [TOEFL](#) scores are higher than those used for admission to the program; non-native English speakers must pass the Test of Spoken English or the University's SPEAK test of verbal proficiency in order to hold a teaching assistantship.

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Degree Requirements

Besides course work, the M.S. in Environmental Science degree requires a thesis based on original scientific research of sufficient quality for publication in a peer-reviewed scientific journal.

Before registering for courses, all newly admitted students must meet with the BGES Graduate Program Director. All students are required to enroll in the BGES Graduate Orientation course (BIO 500) and to attend departmental seminars. Students also must comply with all [College of Graduate Studies](#) requirements and procedures.

A student is admitted to candidacy when the following requirements are met:

1. Deficiencies in undergraduate preparation are corrected.
2. Eight graduate hours of course work are completed with a [grade-point](#) average of 3.00 or better.
3. A plan of study and the research proposal are approved by the Advisory Committee and accepted by the Graduate Committee and the Cleveland State Thesis Proposal Approval Form

is filed.

Students in the M.S. program in Environmental Sciences must maintain a minimum **grade-point** average of 3.00. A student receiving two grades of B– or one grade of C or below is subject to review by the BGES Graduate Committee; dismissal from the graduate program may be recommended.

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The Program

Following are specific requirements for the M.S. in Environmental Science degree. Complete, current program requirements and any changes are described in the BGES Graduate Program Handbook available from the BGES Graduate Program Office.

1. Selection of a Major Advisor and an Advisory Committee. The Major Advisor typically is the primary supervisor and source of support for the student's thesis research. Together, the Major Advisor and Advisory Committee supervise the student's plan of study and research proposal, monitor the student's progress, certify that requirements have been met in a timely fashion, and process all **petitions**, progress reports, and other communications with the Graduate Committee. In keeping with the program's interdisciplinary focus, the Advisory Committee must include one member of the Cleveland State **graduate faculty** from outside of BGES.

2. Completion of a minimum of 32 credit hours—with a minimum **grade-point** average of 3.00—distributed as follows:

a. Total course work and research

Courses (minimum) 22 credits

Thesis research (minimum) 8 credits

Additional courses or research 2 credits

Total minimum* 32 credits

*College of Graduate Studies regulations specify that all EVS or BIO courses must be 500-level or above; not more than seven credit hours of 400-level courses in related areas and not offered by the BGES Department may be included if approved by the Advisory Committee and BGES Graduate Committee.

b. Required courses: Each student must complete **BIO 500** (Graduate Orientation) and **BIO 540** (Bio-statistics) or an equivalent graduate-level statistics course.

c. Required core competencies: Technical writing (e.g., **ENG 509**), Law/Policy (e.g., **LAW 671** Environmental Law or **UST 652** Environmental Policy), and Technology (e.g., **CVE 450** Environmental Technology). Core competency requirements can be satisfied with the indicated Cleveland State courses or equivalent courses taken before or after entry into the program.

d. Seminars: Each student must complete an Environmental Seminar (**BIO 595**).

e. Environmental Field Experience: Each student must complete six credit hours of course work chosen to provide experience in field research. This requirement may be met by courses like **BIO 651** or **BIO 653** (Advanced Research in Field Biology) that emphasize field methods or by supervised individual research (**BIO 695**) conducted in a field setting.

f. Concentration area: Each student formulates an individual plan of study in consultation with the Major Advisor and the Advisory Committee. The student chooses one of three areas of concentration: Environmental Biology, Environmental Chemistry, or Environmental Earth Sciences. The plan of study must include at least nine credit hours of course work in the area of

concentration as well as any additional elective courses needed to fulfill degree requirements described above.

g. Thesis research: The student's individual research project should be of sufficient quality to be published in a refereed scientific journal.

3. Continuous enrollment for a minimum of one credit hour from admission to candidacy until graduation.

4. Exit Requirement:

a. Presentation of the thesis research at a departmental seminar.

b. Defense of the thesis before a faculty committee. Two unsuccessful attempts to defend the thesis shall result in dismissal from the program.

c. Submission of the approved thesis together with an article based on the thesis, in a format suitable for submission to a refereed scientific journal.

Courses (See Addenda)

See the Master of Science in Biology section of this Catalog for additional course listings.

EVS 506 Ecosystem Science (3-0-3). Introduction to the science of ecosystems. Substantive materials from geology, biology, and chemistry are used to create a picture of the complex systems underlying the natural world and human society, and how society can manage these systems.

EVS 510 Environmental Geology for Teachers (3-0-3). Detailed examination of geologic hazards and the constraints placed by regional geology and geography on the problems facing modern, urban, industrial societies. Intended for working teachers in area school systems. Involves development of curricular materials for use in participants' own classes. Credit does not count toward the M.S. in Environmental Science degree.

EVS 512 Geological History of the Cleveland Area for Teachers (3-0-3). Illustrates the relation of regional geology to the physical, economic, and social development of the Cleveland area. Emphasis on laboratory experimentation and field trips. Intended for working teachers in area school systems. Involves development of curricular materials for use in participants' own classes. Credit does not count toward the M.S. in Environmental Science degree.

EVS 514 Ecosystem Science for Teachers (3-0-3). Introduces the science of ecosystems. Draws on geology, biology, chemistry, and other sciences to examine the function of complex systems underpinning the natural world and human society, and to consider how society manages these systems. Intended for working teachers in area school systems. Involves the development of curricular materials for use in participants' own classes. Credit does not count toward the M.S. in Environmental Science degree.

EVS 520 Rivers and Watersheds of Northeast Ohio (2-0-2). Prerequisite: EVS 523 or permission of instructor. Theoretical introduction to the study of watersheds.

EVS 521 Rivers and Watersheds Laboratory (0-4-2). Prerequisite: EVS 523 or permission of instructor. Introduction to the practical study of watersheds. Students examine chemical, biological, and habitat aspects of area streams; study the watersheds of those streams; and carry out limited watershed-modeling exercises designed to help them understand the dynamics of watersheds and the streams that drain them.

EVS 523 Map Interpretation and the Visualization of Space (1-4-3). Practicum on using topographic, geologic, and specialized maps, aerial photographs, and satellite imagery to interpret and communicate information on landscape details, geologic and geographic hazards, and land-use planning. Review of physical geology to enable students to read the literature in

applied geology for environmental applications.

EVS 525 Introduction to Geographic Information Systems and Remote Sensing (2-4-4). Prerequisite: **EVS 523** or equivalent. Introduction to remote sensing, Geographic Information Systems, and the use of computerized techniques for assessing geographically distributed data, including analysis and presentation of data, and the use of satellite imagery and aerial photography, and commercial and Internet data sets. Lectures are scheduled within lab hours.

EVS 527 Advanced Topics in Remote Sensing and Geographic Information Systems (1-6-4). Prerequisite: **EVS 525**. Intensive investigation of the techniques and problems associated with using remotely sensed data for GIS-based analyses in geology, biology, and environmental science.

EVS 550 Applied Ecology (3-0-3). Prerequisite: **BIO 300** or **BIO 302** or **BIO 304** or permission of instructor. Our lives have been increasingly touched by questions pertaining to environmental degradation at local, regional, and global scales. Students examine ways in which ecological principles can be applied to solving some of these crucial environmental problems. Topics include global climate change, sustainability, agroforestry, biodiversity and conservation, invasive species, ecotoxicology, biomonitoring and bioremediation, and restoration ecology.

EVS 560 Geomorphology (3-2-4). Prerequisite: **EVS 523** or equivalent. Study of the surface forms of the earth, with emphasis on erosional or depositional processes in different climates, the landforms they produce, and their environmental implications. Includes self-paced laboratory exercises outside of scheduled lectures.

EVS 570 Aquatic Ecosystems (3-0-3). Prerequisites: **BIO 200**, **BIO 202**, and **CHM 261**, or equivalents. A study of aquatic ecosystems, including lakes, streams, rivers, and wetlands. Commonalities and differences between the physical-chemical and biological components of these ecosystems are discussed. The impacts of human activities on these ecosystems are covered, as well as water quality assessment techniques, pollution control, and regulation. This course includes three required Saturday field trips.

EVS 580 Earth System Science for Middle School Teachers (3-4-5). Prerequisite: **GEO 100/101** or permission of the instructor. Enrollment is restricted to in-service middle school teachers without science specialty and students enrolled in the M.Ed. Middle School Science program. Concepts of earth system science relevant to teaching middle-school-level earth science are discussed and related to timely issues. Lectures coordinate with laboratory exercises and inquiry-based activities. Credit does not count toward the M.S. in Environmental Science degree.

EVS 581 OhioView Prerequisite Remote Sensing (1-4 credit hours). (See Addenda - January 01, 2005)

EVS 582 OhioView Introductory Remote Sensing (1-4 credit hours). (See Addenda - January 01, 2005)

EVS 585 OhioView Advanced Remote Sensing (1-4 credit hours). (See Addenda - January 01, 2005)

EVS 588 OhioView Research in Remote Sensing (1-4 credit hours). (See Addenda - January 01, 2005)

EVS 593 Special Topics in Environmental Science (3-0-3). Prerequisite: Permission of instructor. Study of a particular topic in environmental science. Topics to be announced in semester course schedule. May be repeated for credit with change of topic.

EVS 594 Special Topics in Environmental Science (4-0-4). Prerequisite: Permission of instructor. Study of a particular topic in environmental science. Topics to be announced in semester course schedule. May be repeated for credit with change of topic.

[EVS 596 Independent Study in Environmental Science \(0-4-2\)](#). Prerequisite: Permission of BGES Graduate Program Director. Special research problem or independent study course. May be repeated for credit with change of topic. Students should make arrangements with an instructor concerning topic, format, and grading criteria before registering for this course.

[EVS 597 Independent Study in Environmental Science \(0-8-4\)](#). Prerequisite: Permission of BGES Graduate Program Director. Special research problem or independent study course. May be repeated for credit with change of topic. Students should make arrangements with an instructor concerning topic, format, and grading criteria before registering for this course.

[EVS 680 Issues in Environmental Science \(3-0-3\)](#). In-depth study of significant, conceptual, or methodological issues in environmental science from geological and biological perspectives. Topic varies with instructor. May be repeated for credit with change of topic.

[EVS 691 M.S. Research in Environmental Science \(one to 12 credits\)](#). Prerequisite: Approval of the BGES Graduate Program Director. Research prior to submission of the Cleveland State Thesis Research Proposal Approval Form for students seeking the M.S. in Environmental Science degree. Graded S, NS, F, T.

[EVS 695 M.S. Thesis Research in Environmental Science \(one to 12 credits\)](#). Prerequisite: Approval of the BGES Graduate Program Director. Research following submission of the Cleveland State Thesis Research Proposal Approval Form for students seeking the M.S. in Environmental Science degree. Graded S, NS, F, T.

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College of Graduate Studies

Program Listings

- Education
 - College of Education and Human Services Course Descriptions
 - Curriculum and Foundations Courses
 - Health, Physical Education, Recreation, and Dance
 - Teacher Education Courses
 - Environmental Science Courses
 - Modern Languages Courses

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College of Education and Human Services Course Descriptions (See Addenda)

Related courses in Environmental Science and Modern Languages (French, German, and Spanish) are found at the end of this section.

Descriptions for nursing courses and economics courses are found in the respective degree program chapters of this Catalog. For MLR and HCA courses, see the College of Business Administration Course Descriptions section.

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Curriculum and Foundations Courses

Foundation Courses

[EDB 502 Psychological Foundations of Education \(three credits\)](#). Provides prospective teachers with an understanding of the theories and research of human development and learning, and teaching practices based on these theories and research studies. Topics addressed include cognitive, social, emotional, and psychomotor development, individual differences, theories of [teaching and learning](#), inclusion, motivation, instructional strategies, and evaluation. Offered annually.

[EDB 505 Teaching and Management in the Secondary School \(three credits\)](#). Combines educational theory with actual classroom practice. Students identify and plan appropriate instructional strategies for diverse learners and secondary school contexts and identify appropriate classroom management skills and techniques for secondary students. Students examine a variety of classroom management techniques and develop a disciplinary unit of instruction to implement. Provides students with an opportunity to reflect on their own teaching. Offered annually.

[EDB 555 Women and Education \(four credits\)](#). Examination of sexist beliefs, attitudes, and values in schools and society, and their effects on the aspirations and autonomy of women; multidisciplinary examination of effects of socialization process on women; consideration of possible school-based remedies to sexism. Women's Studies course.

[EDB 595 Seminar on Integrating Theory and Practice \(two or three credits\)](#). Exit seminar for initial licensure programs in secondary and middle childhood education. Students complete and present a professional teaching portfolio and action research project.

[EDB 601 Educational Research \(three credits\)](#). Prerequisite or co-requisite: [ETE 501](#). An introduction to quantitative and qualitative methods used in educational research. Emphasis on understanding, interpreting, and critiquing research studies. The role of the socio-cultural context in research is considered. Offered every semester.

[EDB 604 Social Issues and Education \(three credits\)](#). Focuses on the relationship of crucial issues in society to educational questions. Alternative purposes of education in light of the changing intellectual, social, and technological climate of modern America are considered. Offered every semester.

EDB 606 Philosophy of Education (three credits). Familiarizes students with persisting issues in the philosophy of education by examining selected topics from both historical and contemporary perspectives. Focuses on relating theories of knowledge and learning to current educational practices, and exploring questions of value in light of various philosophies. Offered annually.

EDB 608 School and Society in the American Past (three credits). Historical examination of changing perceptions of the purpose and nature of education, the relationship of schools to social and economic forces, substance and impact of major school-reform movements, experience of minorities in schools, the role of schooling in social mobility, and development of urban schools. Offered annually.

EDB 609 Comparative and International Education (three credits). Examines selected foreign educational systems with emphasis on the historical, sociological, philosophical, and cultural influences that have shaped their development. Special attention is given to educational practices and innovations of interest to American educators. Offered annually.

EDB 612 Curriculum Theory and Instruction (three credits). Overview of theoretical perspectives on the development, organization, implementation, and evaluation of curriculum. Topics include philosophical, social, technological, economic, and political influences on curricular decision making; identification of curricular and instructional aims; the relationship between curriculum theory and instructional methodology; current issues in curriculum reform; issues of diversity and equity; the role of federal and state standards. Offered every semester.

EDB 620 Psychology of the Adolescent Learner (three credits). Emphasis on basic principles of human growth and the development of learners from early to late adolescence; social and school environment and the total school program as it relates to principles of human development; and the implications of research findings in the behavioral sciences.

EDB 628 Psychology of Learning and Instruction (three credits). Development of cognitive-affective processes; review and evaluation of current research in attentional processes, concept formation, motivational behavior, perception, and problem solving.

EDB 651 Individual Projects in Education (one or two credits). Prerequisite: Permission of department chair. Individual study at the graduate level under the supervision of a graduate faculty member.

EDB 671 History of Minority Education (three credits). Examines the experience of minority groups, including Native Americans, African Americans, European Americans, Asian Americans, and Hispanic Americans, in American education in a historical context.

EDB 675 Productive School and Classroom Discipline (three credits). Examines four major theoretical approaches to problems of management and discipline, including 1) behavior management and practices that emerge from theories of operant conditioning; 2) socio-emotional designs based on humanistic theories; 3) group-process designs with a basis in social psychology; and 4) group-management designs based on research and systematic observation of classroom teachers. Familiarizes teachers with these approaches and improves their skill in applying them in the classroom.

EDB 691 Individual Projects—Comprehensive Examination (one credit). Designed for M.Ed. candidates taking the comprehensive examination who have completed all course requirements. M.Ed. candidates must be registered for one credit to take the examination and to graduate. Offered every semester.

EDB 693 Special Topics in Curriculum and Foundations (one to four credits). Prerequisites: Undergraduate methods course in content area and permission of instructor. Exploration of a special topic through individual and group work under graduate faculty supervision.

EDB 698 Project (one to three credits). May be repeated for a total of six credits. Registration by permission of advisor.

EDB 699 Thesis (one to three credits). May be repeated for a total of six credits. Registration by permission of advisor.

EDB 701 Advanced Educational Research (four credits). Prerequisite: **EDB 601**. Continuation and extension of **EDB 601**. Alternative approaches to educational research, both quantitative and qualitative. Basic principles include sampling, validity, placing self in research, reductionism, hermeneutics, and interpretation. Theoretical assumptions, sources of research questions, data collection and analysis, and rhetoric are addressed.

EDB 711 Educational Evaluation and Innovation (four credits). Prerequisite: **EDB 601**. Provides knowledge and skills to conduct educational evaluations. Also focuses on research findings concerning the process of innovation and the evaluator's role in it. Offered once a year.

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Gifted Courses

EGT 512 Nature and Developmental Needs of Learners with Gifts and Talents (four credits). Study of the multi-dimensionality of giftedness—history, identification, assessment, affective and cognitive characteristics—with an emphasis on the diversity of learners. Topics include gender, ethnicity, race, language, underachievement, socio-economic status, and learners with handicapping conditions.

EGT 513 Curriculum, Teaching Strategies, and Evaluation for Learners with Gifts and Talents (four credits). Prerequisites: **EGT 512** and **EDB 612**, or permission of instructor. Exploration of classroom organization and curriculum modifications to meet the needs of a diverse group of learners with gifts and talents. Programming structures, varied teaching strategies, and multiple evaluation methods are developed.

EGT 517 Creativity, Inquiry, and Productive Thinking (four credits). An advanced course for teachers of students with gifts and talents. Examination of the construct of creativity and of curriculum materials and teaching strategies that promote creative thinking and problem solving. An inquiry approach is modeled and examined for classroom implementation.

EGT 518 Working with Students with Gifts and Talents, Their Families, and Other Professionals (three credits). Prerequisites: **EGT 512** and **EGT 513**. Intensive exploration of recent research literature regarding guidance needs and effective practices with students and their families. Also examines collaborative teaching techniques and models for working with other professionals. Special attention is given to the acquisition of productive interview techniques and heightened interpersonal skills for teachers. The special needs of students due to gender, ethnicity, race, language, underachievement, socio-economic status, and handicapping conditions are explored.

EGT 519 Using Computers with Students with Gifts and Talents (three credits). Prerequisites: **EGT 512** and **EGT 513**, or permission of instructor. Exploration of a variety of technology-based activities with particular emphasis on their applicability to curriculum for the gifted/talented audience. Topics include common curriculum paradigms in gifted education, as well as explicit, hands-on instruction with computer tools, including specialized peripherals and use of the Internet.

EGT 580 Practicum in Gifted and Talented Education (two to four credits). Prerequisites: **EGT 512**, **EGT 513**, and permission of instructor. Specialized field experience in an approved classroom setting for gifted and talented learners, under the supervision of a qualified teacher. Incorporates observation of classes with the planning and implementation of instruction for gifted and talented pupils.

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Technology Courses

ETE 501 Technology Strand (two credits). Introduces students to the basic concepts and skills of computer technologies useful for educational settings and graduate study. An overview of user interface and file handling on both Macintosh and Windows 95/98 operating systems is presented. The use of the World Wide Web for information retrieval is discussed and practiced. Communication via electronic mail and attachments is introduced. Concepts and standard procedures in the use of common word processors and spreadsheets are addressed. Once mastery is achieved among the five topics of OS (Operating Systems), the Internet, e-mail, Word, and Excel, students are expected to combine their skills to produce a comprehensive final project demonstrating the use of their skills in an educational context. Credit by examination available. For more information, visit wang.ed.csuohio.edu/ete501.

ETE 565 Technology in the Classroom (four credits). Prerequisite: **EDB 601**. Course is aimed at classroom teachers in all subject areas and at all levels. Provides an overview of and hands-on experience with major instructional uses of technology in the classroom; familiarizes students with current research in the area; and builds a moderate level of competence and confidence in designing instructional applications of technology within a given setting.

ETE 566 Technological Change and Schools (four credits). Prerequisite: **EDB 601**. Focuses on technological change in society and its impact on schools. Emphasizes the effective integration of technology into teaching and learning as change occurs. Students investigate major technologies and create the essential components of a school technology plan.

ETE 567 Telecommunications in Education (four credits). Prerequisite: **EDB 601**. Topics include advanced techniques in the use of electronic mail; procedures for searching and retrieving information from the Internet; publishing educational materials via the World Wide Web; procedures for establishing and maintaining microcomputer-based servers; simple videoconferencing; and Internet-based communications methodologies, such as avatars and online shared virtual realities.

ETE 568 Programming the Computer (four credits). Prerequisite: **EDB 601**. "Programming" in this context means instructing the computer to conduct complex tasks related to instruction. Focuses on the creation and use of complex macros, hypermedia, and intelligent agents. Programming languages, such as Logo and HTML, are addressed, but are not the primary focus.

ETE 595 Seminar in Computer Uses in Education (three credits). Prerequisites: **ETE 565, ETE 566, ETE 567, and ETE 568**. A culminating experience in the Educational Technology program. Integrates and extends content of other specialization courses; incorporates the use of distance education technologies; requires the creation of a retrospective professional portfolio.

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Counseling, Administration, Supervision, and Adult Learning Courses

Adult Learning Courses

ALD 603 Lifespan Development (three credits) An overview of the various theories of human development and their implications for counselors. The primary focus is on the contributions of each of the theories to individual development at all levels as well as the applications of these principles and concepts in counseling and education. Course material covers genetic/biological, physical, social/cultural, emotional, and intellectual bases of human development.

ALD 605 Psychology of the Adult Learner (three credits). An analysis of the

developmental, social, and psychological characteristics of adults who are involved in post-secondary education and counseling. Attention is given to lifespan developmental theories, principles of human growth, and learning with special emphasis on this age group.

ALD 606 Modern Higher Education in a Changing Society (four credits). Assessment of the development of post-secondary education from colonial times to the present. Special focus on current trends as institutions adjust to demographic changes and other societal forces related to meeting the needs of an adult population.

ALD 607 Adult Education in a Changing Society (four credits). Overview of the field of adult education; study of the philosophies of adult education; discussion of historical development, future alternatives, and contemporary issues and trends as they affect adult education in diverse settings.

ALD 631 Group Dynamics for Educational Leadership (four credits). Application of the principles of group dynamics to work teams; task and maintenance roles in working with groups; leadership approaches in working with groups; creating a productive group climate; factors influencing group development and cohesion; group problem solving and conflict resolution.

ALD 645 Organizational Behavior and Change (four credits). Prerequisite: ALD 605 or ALD 607 or permission of instructor. An exploration of the organizational context of training and staff-development programs in higher education, business and industry, and social service organizations. Discussion of administration, legal constraints on organizational behavior, and interrelationships of the individual, groups, organizations, and the environment. The organizational significance of leadership, motivation, decision making, conflict resolution, culture, and change theory.

ALD 646 Human Resource Development for Adult Educators (four credits). Prerequisite: ALD 605 or ALD 607 or permission of instructor. An elective course for graduate students in the Adult Learning and Development program. Addresses the complex skills, concepts, and strategies relating to the adult teaching/learning component of human resource development in business, education, industry, government, and voluntary organizations.

ALD 653 The Two-Year College (four credits). Examines the history and development of two-year colleges, as well as current and future problems. Discussion of the administration and funding of two-year colleges.

ALD 663 Planning and Implementing Programs for Adult Learners (four credits). Prerequisite: ALD 605 or ALD 607 or permission of instructor. Theoretical and practical approaches to designing, planning, promoting, implementing, and evaluating programs, workshops, and curriculum for adult learners. Analysis and practice of theories, principles, and methods of planning programs, assessing needs, establishing program objectives, and critically designing and evaluating programs in various facets of adult education in business, educational, and social service organizations.

ALD 664 Instructional Principles for Adult Learners (four credits). Participants focus on teaching strategies, group methods, and factors that influence ways in which adults respond to and participate in learning activities. Relevant concepts, principles, and theories concerning adult education are analyzed and applied to teaching methodology. Emphasis is placed on the practical application of instructional strategies for planning and conducting educational experiences for adult learners.

ALD 665 Student Personnel Services in Higher Education (four credits). Overview of the philosophy, organization, administration, and current practices in student personnel with reference to orientation, housing, health services, advising, student affairs, student development, and other services.

ALD 679 Planning, Marketing, and Budgeting in Nonprofit Organizations (four credits). Provides an overview of available resources and basic concepts relevant to planning,

marketing, budgeting, and proposal writing for nonprofit organizations.

ALD 688 Internship in Adult Learning and Development (four credits). Prerequisite: Completion of at least 16 hours in ALD program, including **ALD 605** and **ALD 607**, and admission to ALD program. Field-based course providing an opportunity for advanced students in the Adult Learning and Development program to engage in supervised work in colleges, business organizations, and agencies.

ALD 689 ALD Portfolio Development (four credits). Prerequisite or co-requisite: **ALD 688**. A capstone experience for students in the ALD program that allows them to reflect on and demonstrate their comprehensive knowledge, skills, and experiences in adult education through the development and presentation of a professional portfolio. Students who choose this course do not take comprehensive examinations. This course does not require extra hours of students in the ALD master's program but instead becomes one of the students' electives within the program.

ALD 700 Issues in Multicultural Foundations of Urban Adult Education (four credits). Prerequisite: **ALD 605** or **ALD 607** or admission to the Ph.D. in Urban Education Program. An elective course for graduate students in the Adult Learning and Development program or for doctoral students enrolled in the Leadership and Lifelong Learning specialization in the Ph.D. in Urban Education program. Addresses cultural (racial, ethnic, linguistic) diversity in the adult educational context. Topics include cultural self-awareness, demographic changes and projections, problems/issues in inter-cultural educational setting(s), theoretical perspectives of multicultural education, adult education practical problems, and related strategies in handling diversity in adult education settings.

ALD 800 Leading Continuing Education for Professionals (four credits). Prerequisite: Standing in the Doctoral program. Students examine and analyze the nature and function of programs for developing human resources in business, education, industry, government, social services, and voluntary organizations. Theoretical and research literature related to **continuing education** for professionals is analyzed and discussed. Topics include professionalization, professional practice, professionals as learners, developing and evaluating educational programs, and the institutional context of continuing professional education.

ALD 801 Adult Learning Theory and Research (four credits). Prerequisite: Standing in the Doctoral program. Students in this course analyze research and theory concerning adult learning, including social and psychological aspects of adult learning, development, participation and motivation, self-directed learning, transformative learning, and recent and emerging theoretical perspectives.

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Administration Courses (See Addenda)

ADM 613 School Law (four credits). Prerequisite: **ADM 614** or equivalent. Areas of law that particularly affect schools, including the education law of Ohio, constitutional law as it relates to school problems, and the law of torts as it applies to educational institutions.

ADM 614 Administration Principles and Practice (four credits). Overview of educational administration, including the administration process. Also includes an early field experience to familiarize students with the implementation of administrative theory in the school setting.

ADM 615 Instructional Leadership and Pupil Personnel Administration (four credits). Development of leadership skills necessary to assist teachers in developing, implementing, and assessing instructional programs. Development of institutional policies, decision-making processes, and administrative behavior affecting students in the school.

ADM 618 Staff Personnel Administration (2-0-2). Prerequisite: **ADM 614** or equivalent. Addresses economic, legal, and ethical principles that govern the way in which administrators relate to faculty and staff. Topics include planning, recruitment, selection, induction,

compensation, and the laws and regulations relating to each of these administrative functions.

ADM 642 Collective Bargaining and Contract Management (two credits). Familiarizes prospective administrators with Ohio's Public Employee Collective Bargaining Law and the collective bargaining process. Students learn to develop collective bargaining provisions in light of current law, to research and do contract comparisons, and to use collective bargaining to achieve school and community goals.

ADM 643 School Finance and Economics (four credits). Overview of sources of public school funding with focus on state taxing and allocation issues. Analysis of federal and state legal issues pertaining to the provision of funds for public education.

ADM 652 School Business Management and School Facilities (four credits). A comprehensive overview of school business management and techniques and problems in planning and renovating educational facilities. Includes all aspects of the delivery of business-support services to all segments of the school system. Study of trends in school plant design and the examination of all school facilities, including the involvement of architects, engineers, and superintendents.

ADM 674 Special Education Law (four credits). Prerequisite **ADM 613**. Discussion and analysis of court decisions, statutes, and regulations relevant to individuals with disabilities in education.

ADM 676 Clinical Supervision and Professional Development (four credits). Presents several approaches for effectively supervising teachers and school personnel involved in all aspects of the teaching/learning process. Also provides an array of plans for giving school personnel personalized, professional-growth opportunities.

ADM 677 Legal and Policy Issues in Education (four credits). Prerequisite **ADM 613**. Discussion and analysis of major legal and policy issues in education. Emphasis on judicial interpretations of relevant statutes and regulations in order to better understand the risks in education management and possible strategies to reduce those risks.

ADM 680 Supervision Practicum (two semesters, two credits per semester).
Prerequisites: Completion of a minimum of 20 semester hours; applications must be submitted and approved before registration. Each student plans and implements a field project or series of projects in the work environment.

ADM 681 Elementary School Administration: Theory and Practicum II (two credits).
Prerequisites: Completion of a minimum of 24 semester hours, including **ADM 614**, and approved application. Students review administrative practices and procedures in elementary schools, and plan and implement a practical project or projects in their work environment.

ADM 682 Middle School Administration: Theory and Practicum II (two credits).
Prerequisites: Completion of a minimum of 24 semester hours, including **ADM 614**, and approved application. Students review administrative practices and procedures in middle schools, and plan and implement a practical project or projects in their work environment.

ADM 683 Secondary School Administration: Theory and Practicum II (two credits).
Prerequisites: Completion of a minimum of 24 semester hours, including **ADM 614**, and approved application. Students review administrative practices and procedures in secondary schools, and plan and implement a practical project or projects in their work environment.

ADM 811 The School Superintendency (four credits). A focus on the current problems facing superintendents in their relationship with the board of education, district staff, the community, and state and federal agencies. Field experience at the district level is an important aspect of the course.

ADM 830 Evaluating Educational Policy Making at the Federal and State Levels (four credits). Explores the political factors influencing the development of policy affecting schools and universities at the federal and state levels through the study of the legislative histories of

specific policies.

[ADM 831 Implementing Public Policy in Schools and Universities \(four credits\).](#)

Analyzes court decisions that deal with the implementation of laws and regulations at the local level. Attention is directed to the role of courts in shaping policy and how that role interacts with the goal of schools and universities to deliver educational services.

[ADM 832 Managing Change in Schools and Universities \(four credits\).](#) Covers the principles of managing change and individual leadership as they apply to colleges and universities. Fundamentals, such as obstacles to change, culture, empowerment, leadership challenges in bringing about change, the role of technology in transforming schools, future trends for education, adapting the workplace, and a systems approach to making change happen are discussed. Other topics include changing systems, shared decision making, and the development of new programs.

[ADM 833 Seminar in Urban Education \(four credits\).](#) Explores social, economic, political, and organizational factors in urban school settings that inhibit the academic development of students. Students become familiar with changing community paradigms/structures in urban settings and corresponding changes in the education process that may lead to enhanced student achievement.

[ADM 880 Internship \(two semesters, two credits per semester\).](#) Prerequisite: Permission of instructor. Provides an opportunity for participants to engage in planned field experiences at the district level. Field activities are supervised by University staff in cooperation with district personnel.

[ADM 889 Advanced Seminar in Administration \(four credits\).](#) Prerequisites: Open only to students in the administration track of the Ph.D. program in Urban Education who have completed a minimum of 12 hours in the doctoral specialty or who have successfully completed the core and specialty comprehensive examinations. Discussion of major areas in school and non-school administration. Participant investigation and presentation of theory and research in administration based on assessment of prior learning. Practical exploration of leadership approaches and models.

[EDA 593 Current Issues in Counseling \(one to four credits\).](#) Specific topic is included in the [course schedule](#). Provides students with the opportunity to investigate a designated topic in-depth and/or to carry out a supervised investigation within the limits of the seminar title. Group meetings enhance discussion and problem exploration. May be repeated with change of topic. Offered infrequently.

[EDA 651 Individual Projects in Education \(one to four credits\).](#) Prerequisite: Permission of department chair. An independent project in a selected area of education; project must be approved by and arrangements made with permission of department chair, the advisor, and a supervising faculty member. Offered every semester.

[EDA 693 Current Issues in Administration \(one to four credits\).](#) Specific topic is included in the [course schedule](#). Provides students with the opportunity to investigate a designated topic in-depth and/or to carry out a supervised investigation within the limits of the seminar title. Group meetings enhance discussion and problem exploration. May be repeated with change of topic. Offered infrequently.

[EDA 698 Project \(one to four credits\).](#) May be repeated for a total of four credit hours. Registration by permission of advisor. Offered every semester.

[EDA 699 Thesis \(one to four credits\).](#) May be repeated for a total of four credit hours. Registration by permission of advisor. Offered every semester.

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[Counseling Courses](#) (See Addenda - July 29, 2005)

CNS 558 Mediation and Dispute Resolution (two credits). Trains participants to resolve disputes as trained mediators. Review of a six-phase process of mediation in which disputing parties isolate critical issues, identify commonalities, generate alternatives, and reach consensus. Focuses on practical skill and the understanding of theoretical and empirical bases of the technique. Includes lectures, demonstrations, skill-building exercises, role-playing, and group activities. Application of the procedure to varied settings is discussed.

CNS 604 Cultural and Social Foundations in Counseling (two credits). Provides a foundations background in current social/cultural issues, including multiculturalism, alcohol/drug use and dependency, and issues related to our pluralistic society.

CNS 611 Appraisal in Counseling (two credits). An introductory study of the psychological tests most widely used in the fields of school and clinical counseling. Includes an introduction to the practical use of psychological tests as well as material on test construction, validation, reliability, ethics, and testing in a culturally diverse society. Designed to train the counselor as a responsive, reflective professional who is a partner in the counseling process.

CNS 617 Ethical and Legal Issues in Counseling (three credits). Introduction to ethical standards for the profession and to the research relevant to ethical behavior of counselors in mental health and school settings. Study of important legal developments related to confidentiality, testing, research, and supervision. Application of ethical and legal standards to complex cases. Examination of emerging ethical issues and models of ethical decision making.

CNS 620 Laboratory in Counseling Techniques (three credits). Prerequisite: Admission to one of the counseling programs. Practicum in individual counseling with a focus on skill development and the establishment of a trusting counseling relationship. Students conduct actual counseling sessions with other class participants. Orientation to the role of the professional counselor in school and non-school settings is included. Must be taken in the first semester of enrollment in the counseling program. Graded on an S/F basis.

CNS 622 Individual Counseling: Theory and Process (three credits). Prerequisite: Admission to counseling program or permission of instructor. An overview of the stages of the counseling process and major theories of counseling. Humanistic, psychodynamic, behavioral, and cognitive theories are discussed with attention to research literature and application to diverse populations. Focus is on evaluating the strengths and weaknesses of the theories and building counseling skills through class exercises and role plays.

CNS 623 Group Process and Practice (three credits). Prerequisites: CNS 620 and CNS 622. Overview of group dynamics, leadership, and procedures. Examines the use of interactive groups to reach the goals of a school or agency guidance program. Students are required to participate in group activities.

CNS 624 Career Development and Information Services (three credits). Intensive study of the psychological and social factors in career development, as well as major theories of career development and how they influence the use of career and educational information in schools and agencies. Includes a review of major assessment tools and computer packages to assist in career decision making. Discussion of the relationship of career to other facets of development.

CNS 629 Community Agency Counseling (three credits). Historical development of the community mental health services movement; analysis of current trends, practices, and issues in mental health service delivery.

CNS 632 Seminar in Counseling: Selected Topics in Counseling (three credits). Prerequisite: Permission of instructor. Presentation of counseling innovations; critical examination of theory and/or research. Offered occasionally.

CNS 633 Women and Mental Health (three credits). (See Addenda - July 29, 2005) Provides counselors and other mental health professionals with an understanding of the changing nature of treatment modalities for women in counseling and psychotherapy.

Introduces feminist theories of counseling and special topics such as victimization, dual careers, gender discrimination, reproductive issues, and mid-life transition. Offered every other summer (odd years).

CNS 634 Counseling and Spirituality (two credits). Provides an overview of the relationship of spirituality to counseling and psychotherapy. Covers the theoretical and applied aspects of integrating spiritual issues into clinical work with clients in both school and agency settings. The course material also includes diagnostic issues, related clinical techniques, and how spirituality is also an aspect of client diversity. Offered in the summer every other year (even years).

CNS 650 Case Studies and Interventions (three credits). Prerequisites: Admission to the graduate program in counseling and CNS 620, CNS 622, and CNS 624. Designed to help counseling students use diagnostic information in planning appropriate counseling interventions with clients. Students become familiar with major treatment modalities and learn to make effective choices among them for individual clients. The role of cultural, social, and individual variables in treatment planning is emphasized. Case studies are utilized frequently.

CNS 670 Counseling Children and Adolescents (three credits). Prerequisite: CNS 622 or equivalent. Major theories and interventions in counseling children and adolescents in schools and community settings. Topics include psychoanalytic, humanistic, play-therapy, behavioral, and cognitive models of counseling children and adolescents, and issues in multicultural counseling for this population.

CNS 678 Foundations of School Counseling (three credits). Prerequisite: Admission to counseling program or permission of instructor. Survey of the history, philosophy, and current trends in school counseling. Role, function, and identity of the school counselor. Developmental approaches to assist students at points of educational and personal transition. Collaborative work and consultation with other school personnel such as teachers, administrators, school social workers, and nurses.

CNS 679 Techniques in School Counseling (three credits). Prerequisite: CNS 678. Use management, analysis, and presentation of data from school-based information to design a comprehensive developmental school-counseling program. Individual, group, and classroom guidance approaches that assist students to be successful academically. Addresses career and personal/social concerns. Approaches to peer facilitation as an intervention strategy.

CNS 680 Counseling Practicum (three credits). Prerequisites: Admission in the school or community counseling program, and CNS 620, CNS 622, CNS 623, CNS 624, and CNS 617, or equivalents. Offers students field placements in schools or community agencies in which they provide individual and group counseling to clients under the supervision of a qualified professional. Placement requires a minimum of 100 hours on site, 40 of which must be in direct service to clients. Students also meet on campus for individual and/or group supervision weekly.

CNS 685 Internship in School Counseling (two semesters; three credits per semester). Prerequisites: CNS 604, CNS 679, CNS 680, CNS 706, and approval of application two semesters in advance. Supervised field experience in school counseling, development of skills in counseling students, consulting with school personnel, interaction with parents and guardians. Emphasis on the development of individual counseling skills. Application for internship must be submitted two semesters in advance and enrollment must begin in fall semester.

CNS 686 Practicum/Internship in Community Agency Counseling (three credits). Prerequisites: CNS 680, CNS 706, and approval of application two semesters in advance. Supervised field experience in community counseling with emphasis on the development of skills in individual counseling. First part of a two-course sequence, offered fall semester only.

CNS 687 Advanced Internship in Community Agency Counseling (three credits). Prerequisite: CNS 686. Supervised field experience in community counseling with emphasis

on the development of skills in individual counseling. Second part of a two-course sequence, offered spring semester only.

CNS 701 Assessment for Counselors (three credits). Prerequisite: CNS 611 or equivalent. Further educates students about assessment instruments that can be used as part of the diagnostic and counseling process. Includes content focusing on selection, administration, scoring, and interpretation of several commonly used clinical assessment devices. Students also learn about inherent cultural biases in those instruments and develop skill in incorporation of test data into their counseling.

CNS 702 Individual Intelligence Testing (three credits). Prerequisites: Admission into graduate program in counseling and CNS 611. Presents the current versions of the Wechsler Adult Intelligence Scale and the Wechsler Intelligence Scale for Children, and the Adaptive Behavior Scale, the psychological test commonly used to assess individual intelligence and adaptive behavior in mental health settings. Instruction for competent administration, scoring, and reporting of test results is included. Also discussed are the history of intelligence testing, differential diagnosis, issues in use of these measures with culturally diverse populations, and ethical and legal issues.

CNS 703 Personality Assessment for Counselors (three credits). Prerequisites: Admission into graduate program in counseling and CNS 611. Reviews the psychological tests commonly used to assess individual personality functioning in mental health settings. The role of tests in assessing psychological dysfunction and treating mental and emotional disorders is discussed. Legal and ethical issues and the limitations of personality testing are examined.

CNS 706 Psychopathology and Diagnosis for Counselors (three credits). Prerequisite: CNS 622 or equivalent, or permission of instructor. A review of major categories of psychopathology with emphasis on the behavioral, cognitive, and affective components of human dysfunction. Emphasis on the assessment of psychopathology, research evidence, and controversies about the appropriate role of the diagnosis of mental and emotional disorders in a multi-cultural society. Introduction to the current diagnostic manual in use in mental health settings. Review of testing concepts and the use of testing in diagnosing psychopathology.

CNS 709 Psychopharmacology for Counselors (three credits). Prerequisite: CNS 706. Psychological and physiological effects of the five major classes of psychotropic drugs are examined to assist counselors in understanding the ways these drugs affect their clients. Examples of commonly used drugs in mental health settings are included with review of their effects, side effects, and impact on the counseling process. Provides knowledge essential for counselors to understand drug impact and raise informed questions when seeking psychiatric consultation. Special attention is given to medications used to treat disorders of anxiety, depression, and psychosis.

CNS 712 Theories of Personality and Counseling (four credits). Prerequisite CNS 622 or equivalent. A systematic and intensive examination of the philosophy, process, and technique of the major theories of personality, including theories of counseling and psychotherapy. Research findings related to these theories also are discussed along with their practical application.

CNS 725 Advanced Career Development: Theory and Practice (four credits). Prerequisites: CNS 624 and current doctoral standing, or permission of instructor. Further educates students on career theory, research, and practice. Content focuses on convergence of career theory, integrating theory into practice, current topics in career counseling, special populations, and assessment practices.

CNS 726 Fundamentals of Supervision and Consultation (four credits). Prerequisite: Current doctoral standing or permission of instructor. Provides students with the theory base and skill background to be effective clinical supervisors or mental health clinicians. Focus on the social context of urban agencies and organizations, and how supervision practice interfaces with the social and political aspects of institutional functioning. Emphasis on contrasting models of supervision and comparison of strategies between models, and how each of those models facilitates supervisee development. There also is a component on effective

consultation, through which students acquire the skills necessary to assess an organization's needs, and help the organization to meet those needs.

CNS 727 Advanced Family Issues in Counseling (four credits). Prerequisite: Current doctoral standing or permission of instructor. Prepares students to understand and treat family counseling situations that require an in-depth knowledge of research data relating to family issues in an urban setting, family life cycles, and family systems and their process of change. Challenging cases that family practitioners frequently face in clinical and school situations are discussed. Presentations, readings, and assignments are keyed to issues experienced by class members, especially those that focus on urban populations and their unique needs.

CNS 728 Advanced Counseling Theory Seminar (four credits). Prerequisites: CNS 622 and CNS 706 or equivalents, or permission of instructor. Provides an in-depth study of one theoretical approach to counseling and psychotherapy. In a discussion, experiential, seminar format, students learn advanced concepts and applications of either psychoanalytic/psychodynamic, cognitive behavioral, Gestalt, humanistic, family systems, or contemporary brief therapy models.

CNS 732 Seminar in Leading Interactive Groups (three credits). Prerequisites: CNS 622, CNS 623, and permission of instructor. Group leadership for advanced counselor education students and practicing counselors. Includes at least 30 hours of field placement as a group leader along with class instruction in group-process theory and practice, philosophy of group processes, and practical approaches for implementing group programs in schools and community agencies.

CNS 738 Family Counseling (three credits). Prerequisite: CNS 622 or equivalent. Review of major theories of family development and family counseling with special attention to families in crisis. Examines research data and applications to families in a multicultural society.

CNS 771 Using the Current Diagnostic and Statistical Manual of Mental Disorders (two credits). Prerequisite: CNS 706 or equivalent. Includes an understanding of each category of mental disturbance, criteria used to identify specific forms of disturbance, training in differential diagnosis, case studies illustrating different forms of pathology, and discussion of how treatment plans and interventions are linked to specific diagnoses.

CNS 781 Internship in Counseling (three credits). Prerequisites: Admission into the Educational Specialist degree program and successful completion of Ed.S. basic core requirements in counseling and human behavior, or permission of instructor. Field-based internship in counseling for post-master's students to refine diagnostic and counseling skills, expand areas of competency, and develop abilities in counseling clients with mental and emotional disorders. Students are required to gain experience in the appropriate use of standardized tests. Field supervision is complemented by University faculty. May be repeated once.

CNS 782 Internship in Diagnosis and Testing (three credits). Prerequisites: Admission into graduate program in counseling, CNS 702, CNS 703, and CNS 706. The purpose of this 220-hour internship is to gain supervised experience in diagnosis of mental and emotional disorders using the DSM or related diagnostic systems and to administer and interpret personality inventories and individual intelligence tests in field settings. It is designed to help counselors understand the relationship between diagnosis, testing, and treatment planning in counseling. Interns are expected to comply with all ethical and legal standards in diagnosis and testing and to demonstrate understanding of the special considerations with culturally diverse clients.

CNS 888 Research and Evaluation in Counseling (four credits). A critical analysis of the current research data on the counseling process and outcome, and a review of models for effective evaluation of counseling programs. Acquaints students with the history and current status of counseling research and helps students develop competencies in critically analyzing and designing counseling research and evaluation projects. Discussion of the ethical issues in

counseling research also is included.

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Health, Physical Education, Recreation, and Dance

Program Core and Emphasis Courses

HPR 550 Computer Applications in Health and Physical Education (three credits).

Designed to help health and physical education professionals learn efficient and effective use of computers in instruction, record keeping, planning, and analysis. Focus on the identification and use of appropriate, user-friendly software packages.

HPR 601 Research Methods in Health and Human Performance (four credits). An introduction to research methods with a focus on the principles and application of the research process, critically evaluating published research, and appropriate selection, use, and interpretation of statistical tests. Students develop proficiency in using SPSS (Statistical Package for the Social Sciences) computer software for statistical analyses.

HPR 606 Human Development (three credits). Study of physical, psychological, social, and moral development with attention to life-span events; emphasis on practical application of theory relative to understanding human abilities and how theory affects programming across the life span.

HPR 679 Practicum for School Nurses (two credits). Specialized field experience in an appropriate setting that provides extensive exposure to the field of school nursing. Includes a seminar and the development of a professional portfolio.

HPR 680 Practicum (three credits). Specialized field experience in an appropriate setting that provides extensive exposure to one of the following professional fields: community health education, sports management, exercise science, or school nurse. Includes a seminar and the development of a professional portfolio.

HPR 681 Practicum (four credits). Specialized field experience in an appropriate setting that provides extensive exposure to one of the following professional fields: community health education, sports management, exercise science, or school nursing. Includes a seminar and the development of a professional portfolio.

HPR 682 Practicum (five credits). Specialized field experience in an appropriate setting that provides extensive exposure to one of the following professional fields: community health education, sports management, or exercise science. Includes a seminar and the development of a professional portfolio.

HPR 691 Individual Project: Comprehensive Examination Only (one credit). Designed for M.Ed. candidates in HPERD taking the comprehensive examination who have completed all course requirements and are not registered for any other course. M.Ed. candidates must be registered for at least one credit hour to take the examination and to graduate. Offered on a no-credit basis for a grade of N/C.

HPR 696 Individual Projects (one or two credits). Prerequisite: Permission of department chair. Independent project in a selected area of HPERD. Project must be approved by and arrangements made with permission of project supervisor and department chair. May be repeated for a maximum of four credit hours.

HPR 698 Master's Project (one or two credits). May be repeated for a total of six credits. Registration by permission of advisor and department chair.

HPR 699 Master's Thesis (one or two credits). May be repeated for a total of six credits. Registration by permission of advisor and department chair.

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Health Education Courses

HED 550 Theories in Health Education and Health Behavior (four credits). Provides the student with a broad theoretical base for the analysis of healthy/unhealthy behaviors. Research and theoretical literature are reviewed in areas such as sociocultural and environmental factors associated with health behaviors, communication, and behavior--change strategies in health education.

HED 551 Organization and Administration of Community Health Education Programs (four credits). Provides students with basic knowledge of the principles, foundations, problems, and trends in the organization and administration of community health education. Explores trends and issues relevant to health education, such as roles, ethics, applications, settings, professional standards, credentialing, and accreditation of programs.

HED 552 Health Education Program Planning (three credits). Stages in the design, implementation, and management of health education/health promotion programs for various populations and settings. Examines the components of a comprehensive health education program and special problems and issues related to health program development.

HED 553 Measurement and Evaluation of Health Education Programs (three credits). Examines the rationale and procedures used to evaluate health education programs. Topics include planning evaluations, the politics and ethics of evaluation, measurement, sampling, logistics, data analysis, and the development of an ongoing evaluation project.

HED 560 Foundations of a Coordinated School Health Program (four credits). Explores the basic principles and practices underlying the organization and administration of a comprehensive school health program. Involves an evaluation of the student's chosen school system in order to compare practice with theory. The role of the school health program in relation to the school, community, and the family is explored.

HED 561 Methods and Materials for Health Education (three credits). Prerequisite: HED 551 or HED 560, or equivalent. Introduces students to productive, creative, and innovative methods needed to implement comprehensive school health education at the grade levels. Students become familiar with organizing and presenting health content, health materials, health curricula, community resources, and technology.

HED 565 Analyzing Health Data for Grant Writing (three credits). Emphasis on terms, phrases, and sources frequently used to design, analyze, and interpret existing health data with a focus on epidemiological investigative procedures and the development of grant proposals.

HED 570 Pathophysiology of Disease (four credits). Provides students with essential concepts of pathogenesis and disease processes. Deals with progression, diagnosis, and treatment. Focuses on the body's immune defense mechanisms for both chronic and communicable diseases; applies basic principles to a variety of examples. Some anatomy and physiology course work recommended.

HED 571 Substance Abuse Education (three credits). Provides students with basic knowledge of the physiological, psychological, and sociological effects of substance use, misuse, and abuse. Examines factors that influence substance use, misuse, and abuse, as well as their attitudes and behaviors. Drug prevention and intervention programs are examined and evaluated.

HED 572 Consumer Health (three credits). Examines health products and services, advertising, marketing, quackery and government control, and guidelines for consumer action when deception, misrepresentation, or fraud is encountered. Students become more informed consumers of health products and services. Implications for health education are considered.

HED 573 Teaching Human Sexuality (three credits). Provides concepts and information about comprehensive sexuality education, including moral, physiological, psychological, and

social aspects. Emphasis on methodology and organization of human sexuality programs for school and community settings.

HED 574 Stress Management (three credits). Examines the role and function of stress in everyday life from physiological, psychological, and sociological perspectives. Personal, situational, and environmental sources of stress are explored along the continuum from distress to eustress. Stress management techniques are examined.

HED 575 Nutrition and Physical Activity (three credits). Study of the relationship between nutrition, physical activity, and health. Topics include macronutrients, micronutrients, water, the role of proper nutrition for optimal physical performance, the role of nutrition and physical activity for weight control, and prevention and treatment of disease.

HED 576 Teaching Nutrition (three credits). Explores various instructional materials and strategies available for teaching concepts of nutrition in school and community settings; provides experience in designing and implementing appropriate instructional strategies. Previous knowledge of basic nutritional concepts is recommended.

HED 577 Social Issues and Needs in Nutrition (three credits). Study of the relationship between nutrition and the sociocultural environment. Topics include nutrition and mass media; cancer and diet; nutrients as chemopreventive agents; drug/nutrient interactions; safety and adequacy of U.S. food supply; and world hunger.

HED 696 Individual Projects in Health Education (one or two credits). Prerequisite: Permission of department chair. Independent project in a selected area of health education. Project must be approved by and arrangements made with permission of project supervisor and department chair. May be repeated for a maximum of four credits.

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Sports Management, Physical Education, and Exercise Science Courses

PED 550 Psychology of Sport and Exercise (four credits). Reviews research in the areas of sport and exercise psychology. The major theories and research approaches in these areas are discussed with a focus on quantitative, qualitative and applied research in the field.

PED 551 Applied Sport Psychology (three credits). Reviews the application of performance enhancement strategies in sport and exercise settings. The focus is on the application of mental skills strategies (e.g., goal setting, imagery, attentional focus) to improve performance in sport, exercise, or other performance settings. Also explores the role of group dynamics, leadership, nutrition, and drugs on performance.

PED 554 Sport Sociology (three credits). Examines the effects of social change on the structure and function of sport. Explores the popular concept that sport mirrors society through topics such as sport and politics, economics, racism, sexism, violence, deviance, youth sport, academic integrity and sport, and the impact of the media on sport.

PED 556 Individualized Physical Education for Children with Special Needs (three credits). Study of evaluative procedures used to identify the unique needs of students with disabilities in physical education; development of annual goals and benchmarks for helping students acquire motor skills; enables special educators to establish themselves as resource people. Includes a clinical experience.

PED 560 Program Development and Management (four credits). Provides decision makers with knowledge and skills essential to the development and management of programs. Emphasis on the principles and processes of program design, implementation, and assessment.

PED 561 Sport Governance (three credits). Governance structures used in amateur and professional sports are explored. Emphasis on the International Olympic Committee, the

United States Olympic Committee, the National Governing Bodies; the National Collegiate Athletic Association; high school leagues; professional team sports leagues; and individual sport organizations.

PED 565 Law and Policy Studies in Sport and Physical Education (four credits). An overview of the legal and social policy issues most often encountered in sport and physical activity; emphasizes tort and selected areas of constitutional, commercial, contract, labor, and intellectual property law. The law is applied to the amateur and professional sport environments, recreation and leisure activities, and to instruction and rehabilitation. Leading court decisions are explained and guide students in an in-depth study of their choice and a comprehensive risk-management presentation.

PED 566 Sport Facility Management (three credits). Provides an overview of sports facility planning and management, and the relationship between sport stadiums and professional sports. Planning, design, construction, operation, maintenance, security, scheduling, evaluation, and risk management of facilities are presented in detail.

PED 567 Sports Marketing (three credits). Identification of the sport product and an overview of marketing applied to the sport industry, including consumer behavior, the role of research in marketing and marketing management, segmentation, pricing, promotion, place, and public relations.

PED 570 Seminar in Training and Conditioning (three credits). Study of the principles of physical fitness and conditioning programs. Focuses on methods to enhance physical fitness and/or sport performance for a variety of individuals including athletes and clinical populations. Practical experience in assessing physical fitness is obtained.

PED 571 Biomechanics of Sport and Fundamental Skills (three credits). Introduction to the study of human movement. Focuses on balance, buoyancy, leverage, force, angles of rebound, projectiles, motion, and kinesthesia. Students analyze fundamental movement and create specialized sport skills. These factors are related to learning theory, coaching techniques, and individualization of instruction. The course enables sport management personnel to recognize efficient movement in visual media and to describe sport skills accurately; coaches and teachers learn to identify error in sport skills.

PED 572 Physiology of Aging (three credits). Develops an understanding of the physiological, social, and emotional changes, which accompany the aging process. Emphasis on evaluation of physical, sensory, motor, and cognitive changes. Special attention is paid to developing programs for the elderly in exercise, prevention of falling, improvements in strength, and sense of well-being.

PED 593 Special Topics in Sport Education (two to four credits). Study of current topics of interest in the discipline of sport and sport education. Specific topics and credits are based on analysis of need at the time each course is scheduled.

PED 652 Curriculum in Physical Education (three credits). Presents the total curriculum in physical education at all levels with special attention given to the process of curriculum construction, current trends in curriculum organization, planning for instruction, and curriculum evaluation.

PED 653 Teacher Behavior Analysis (three credits). Study of alternative teaching styles and the implications for applying each style; examination of current research on teacher-role behavior; review of methods for observing and analyzing teacher behavior to increase teaching effectiveness; systems designed for teacher-student interaction in physical activity classes with emphasis on nonverbal communication.

PED 657 Principles of Motor Learning (three credits). Study of the information-processing capacities of the learner and the relevant properties of the environment in an attempt to understand motor-skill acquisition.

PED 658 Seminar in Motor Programming for Special Populations (three

credits). Analysis and application of applied behavioral principles in the instructional process in movement-oriented activities with individuals with disabilities; development of evidential bases for improvement of instructional practice using applied behavioral analysis.

PED 675 Physiology of Human Performance I (four credits). Prerequisites: Courses in human anatomy and physiology, or equivalents. Study of human physiological function during acute and chronic exercise; emphasis on energy metabolism, neuro-muscular, and cardiorespiratory functions. Laboratory experiences focus on mastery of laboratory techniques and the measurement of the acute responses to exercise.

PED 676 Physiology of Human Performance II (four credits). Prerequisite: PED 675. Study of human physiological function during acute and chronic exercise with emphasis on gender differences, environmental factors, aging, endocrine function, ergogenic aids, and research in human performance. Laboratory experiences focus on laboratory techniques and the measurement of acute responses to exercise and performance.

PED 677 Prevention and Rehabilitation of Cardiovascular Disease (three credits). Overview of the methods by which coronary artery disease may be prevented and rehabilitated. Topics include disease process, diagnostic techniques, risk-factor modification, electrocardiographic interpretation, exercise testing, and prescription. Program planning and design are addressed with emphasis on policy and procedure.

PED 696 Individual Projects in Physical Education (one or two credits). Prerequisite: Permission of department chair. Independent project in a selected area of physical education; project must be approved by and arrangements made with permission of project supervisor and department chair. May be repeated for a maximum of four credits.

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Teacher Education Courses

Early Childhood Education

Courses numbered from 500 to 510 are core-course offerings within specializations. Whenever possible, they should be completed prior to enrollment in higher-level courses and may actually serve as prerequisites for same.

ECE 500 Foundations of Early Childhood Education (four credits). Prerequisite: EDC 501. Historical, philosophical, and theoretical introduction to contemporary early childhood education; overview of early childhood models and programs in the United States and other countries; survey of current issues and trends; examination of the role of early childhood models and education in the lives of children between birth and age eight and their families. Required for early childhood teaching license and pre-kindergarten endorsement.

ECE 501 Developmental Curriculum for Early Childhood Education (four credits). Prerequisites: ECE 500 and EDC 501. Study of curriculum development for educational settings that serve children from age three through the primary grades including typically developing children and children with mild/moderate disabilities. Attention is given to developmental considerations; national and state subject-matter standards; and different curricular theories and models as well as their implementation. Required for early childhood teaching license.

ECE 502 Teaching Methods in Early Childhood Education (four credits). Prerequisites: ECE 500, ECE 501, and EDC 501. Study of teaching methods for educational settings that serve children from age three through age eight. Attention is given to strategies for planning, teacher-child interactions, guiding children's behavior, organizing the learning environment, conducting lessons/activities, caregiving, and supporting play, projects, and integrated curriculum. Required for early childhood teaching license.

ECE 503 Teaching Children with Mild and Moderate Disabilities (three credits).

Prerequisites: **ECE 500** and **EDC 501**. Introduction to educational issues related to working in regular early childhood settings with young children who have mild and moderate disabilities. Attention is given to characteristics, etiology, classification, and legal and interdisciplinary issues, as well as to curricular and pedagogical approaches for the inclusive classroom. Required for early childhood teaching license.

ECE 511 Infant and Toddler Development and Education (three credits). Focuses on the development, care, and education of children from birth through age three. Attention is given to developmental needs, staffing considerations, individualized care, responsive environments, and home-center coordination.

ECE 512 Collaboration with Families and Professionals in Early Childhood Settings (four credits). Prerequisites: **ECE 500** and **EDC 500**. Explores the relationships between early childhood professionals and families as well as with other professionals. Strategies for communicating and collaborating with others and for fostering home-school connections are examined. History, philosophy, and issues related to collaboration and family involvement, including diversity, are discussed.

ECE 514 Expressive Arts in Early Childhood Education (three credits). Prerequisites: **ECE 500** and **EDC 501**. Emphasis on the integration of music, rhythmic movement, arts and crafts, dramatics, and literature into preschool, kindergarten, and primary school curricula as a means of discovering and developing children's creative abilities and aesthetic interests.

ECE 515 Mathematics Instruction and Assessment in Preschool and the Primary Grades (three credits). Prerequisites: **EDC 501** and either **ECE 500** or **ESE 500** (note: **EDC 501** is not a prerequisite for special education second license students). Aimed at developing a philosophy and justifiable rationale for **teaching and learning** mathematics in preschool and the primary grades that takes into account the interrelationships among curriculum, instruction, and assessment. Includes exploration of constructive processes involved in developing mathematical understanding in young children, with particular attention given to the acquisition of numeracy and problem-solving strategies. Current standards, methods, and materials for **teaching and learning** mathematics during early childhood are examined and evaluated.

ECE 516 Social Studies Instruction and Assessment in Preschool and the Primary Grades (three credits). Prerequisites: **ECE 500**, **EDC 500**, and **EDC 501**. Explores objectives, principles, trends, materials, and current practices for teaching social studies and fostering social development through early childhood education. Focuses on developmentally appropriate content and strategies for introducing young children to the study of history, geography, economics, and other social sciences.

ECE 517 Science Instruction and Assessment in Preschool and the Primary Grades (three credits). Prerequisites: **ECE 500** and **EDC 501**. Covers the nature, scope, and role of science experiences in the learning and development of young children. Emphasis is given to a constructivist, inquiry-oriented approach consistent with national standards. Discussions, demonstrations, and experiments draw from physical, biological, and earth sciences.

ECE 518 Administration and Management of Early Childhood Education Programs (three credits). Prerequisites: **ECE 500** and **EDC 501**. Students develop specialized administration and leadership skills for use in early childhood care centers or other settings serving young children and their families. Emphasizes licensing regulations, NAEYC center accreditation; proposal writing; lobbying/advocacy; and such management functions as housing, equipping, financing, budgeting, and staffing centers.

ECE 695 Seminar in Early Childhood Education (four credits). Prerequisite: 28 hours of graduate course work in early childhood education or permission of instructor. Final course in the early childhood master's degree sequence. Provides opportunities for in-depth exploration of selected topics and application of knowledge to professional settings.

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Elementary and Secondary Education Courses

Courses numbered from 500 to 510 are core-course offerings within specializations. Whenever possible, they should be completed prior to enrollment in higher-level courses and may actually serve as prerequisites for same.

EDC 500 Diversity in Educational Settings (three credits). Focuses on issues related to the education of culturally and linguistically diverse children, gifted children, and children with special needs. Gender issues in education and the relation of diversity to all areas of the teaching-learning process are discussed. Course work involves the development of effective strategies for teaching all children about diversity and for promoting positive relationships among teachers, parents, and children. Required for early childhood teaching license, pre-kindergarten endorsement, and TESOL endorsement.

EDC 501 Child Development (three credits). Emphasis on various aspects and phases of human growth and development from conception to adolescence, including physical/motor, socio-emotional, moral, and cognitive development. Attention is given to relationships among aspects of development and between development and school learning. Human Development option in the College core; required for early childhood teaching license.

EDC 511 Instructional Design and Delivery (three credits). Explores theories, methods, and procedures underlying the development and design of instruction, with particular attention given to selected models of teaching and their practical application, strengths, and limitations. Other topics include the systematic analysis, design, implementation, and evaluation of instruction as a continuous integrated process; the importance of audience awareness and the learning environment in instruction planning; and the use of instructional technologies to enhance student learning and develop curricular materials.

EDC 512 Instructional Development in Foreign Language Education (four credits). Aids practicing elementary and secondary educators in developing curriculum, objectives, classroom materials, and appropriate teaching methods. Students critically review current research and trends in relation to national and state standards for foreign language instruction.

EDC 513 Instructional Development in English Language Arts Education (four credits). Aids practicing elementary and secondary educators in developing curriculum, objectives, classroom materials, and appropriate teaching methods. Students critically review current research and trends in relation to national and state standards for instruction in the English language arts.

EDC 514 Instructional Development in Art Education (four credits). Aids practicing elementary and secondary educators in developing curriculum, objectives, classroom materials, and appropriate teaching methods. Students critically review current research and trends in relation to national and state standards for instruction in the visual arts.

EDC 515 Instructional Development in Mathematics Education (four credits). Aids practicing elementary and secondary educators in developing curriculum, objectives, classroom materials, and appropriate teaching methods. Students critically review current research and trends in relation to national and state standards for mathematics instruction.

EDC 516 Instructional Development in Social Studies Education (four credits). Aids practicing elementary and secondary educators in developing curriculum, objectives, classroom materials, and appropriate teaching methods. Students critically review current research and trends in relation to national and state standards for social studies instruction.

EDC 517 Instructional Development in Science Education (four credits). Aids practicing classroom teachers by providing strategies and tools for modifying commercial curricula, enhancing teaching methods, and adapting instructional technologies. Students critically review research and trends related to continuing issues in science education.

EDC 518 Teaching Basic Physical Science (three credits). Considers topics from the areas of physics, chemistry, and earth/space science. Emphasis is given to enhancement of the science-content knowledge of future and practicing teachers. Combines lecture, discussion, and laboratory activities, thereby modeling appropriate instructional practices.

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Literacy Development and Instruction Courses

Courses numbered from 500 to 510 are core-course offerings within specializations. Whenever possible, they should be completed prior to enrollment in higher-level courses and may actually serve as prerequisites for same.

EDL 500 Phonics Assessment and Instruction (three credits). Focuses on the nature and role of word recognition in proficient reading and spelling. Provides the background necessary for teaching and assessing phonics, phonemic awareness, and word recognition.

EDL 501 Beginning and Intermediate Reading Instruction and Assessment (three credits). Survey of methods and materials used to teach reading in elementary, middle, and junior high school settings. Includes overview of the reading process, critical examination of related theory and research, how beliefs of reading relate to reading instruction, and introduction to classroom-based assessment of reading development.

EDL 502 Foundations of Literacy: Theory and Practice (three credits). Explores the linguistic, psychological, social, cultural, philosophical, and historical bases of literacy acquisition and its development. Particular emphasis is given to current research and classroom practice. Required for reading endorsement.

EDL 503 Assessment and Evaluation of Diverse Literacy Learners (four credits). Prerequisite: EDL 502. Assessment and evaluation of literacy development, with a focus on reading, writing, and complementary language-arts processes for students of all ages. Linguistic, affective, cognitive, and physical factors that may influence encoding, decoding, comprehension, and composition and their evaluation are considered. The construction, administration, and interpretation and critique of formal and informal assessment procedures are addressed. Course includes supervised, practical experience with a client resulting in the development of a case study. Required for reading endorsement.

EDL 504 Literacy Development: Meeting the Needs of Diverse Learners (four credits). Prerequisite: EDL 503. Includes a supervised practice in teaching reading and writing with emphasis given to the preparation, analysis and evaluation of individualized instructional programs based on case-study evaluation. Approaches of developing positive attitudes toward and strategies aimed at overcoming difficulties in reading and writing development. Includes a supervised practical teaching experience with a client and preparation of a progress report. Required for reading endorsement.

EDL 505 Content Area Literacy (three credits). Critique and analysis of current theory, research, and practice as they relate to content-area reading instruction. Particular attention is given to the development of comprehension, metacognitive awareness, and effective studying strategies. Also stressed are internal and external textbook-thinking skills, the integrated use of reading and writing across the curriculum, and materials and methods to promote lifelong learning. Other topics include media literacy, inquiry learning, authentic assessment, action research, and diversity issues. Required for reading endorsement.

EDL 506 Second Language Learning and Pedagogy (three credits). The first of a two-course sequence in ESL/EFL pedagogy, this course covers theories of second-language acquisition, competing methods for teaching English to speakers of other languages, psycholinguistics, sociolinguistics, and issues involving language learning in multicultural settings. Required for TESOL endorsement.

EDL 507 TESOL Methods and Materials (three credits). Prerequisite: EDL 506. The second of a two-course sequence in ESL/EFL pedagogy, this course provides critical exploration and analysis of current approaches for teaching English to speakers of other languages. Emphasis on the development of communicative competence. Consideration of the role of assessment in instructional design, student placement and advancement, as well as related legal issues. Required for TESOL endorsement.

EDL 508 Applied Linguistics for Teachers (three credits). Designed for practicing and prospective teachers, this course provides an introduction to linguistic theory as it relates to the language development of native and non-native speakers of English. Emphasis is given to the practical application of linguistic knowledge in phonetics, phonology, syntax, morphology, and semantics to classroom practice. Required for TESOL endorsement.

EDL 509 Assessment and Evaluation in the ESL/Bilingual Classroom (three credits). Explores the notion of second-language proficiency and helps students develop an understanding of how they can assess or evaluate LEP (limited English proficiency) students' progress in the development of proficiency. Addresses topics of formal and informal methods of assessing language proficiency, test preparation, and interpretation of test results. Students practice creating authentic assessment tasks.

EDL 510 Pedagogical Grammar (three credits). This experiential, discussion-based course provides foundational knowledge of the history and structure of the English language and explores a variety of approaches to teaching grammar in the ESL/EFL classroom. Reviews the historical development of English and explains many of the irregular aspects of the language. Major focus is on the grammatical structures of English and their functions in communication. Required for TESOL endorsement.

EDL 511 Emergent Literacy (three credits). Examines theory, research, and practice as it pertains to the processes by which young children learn to read and write in day care, preschool, and primary classrooms. Consideration of language and of literacy and concept development, with emphasis on factors that influence children's growth in these areas. Addresses the relationships between thought and language, as well as instructional practices that build on these relationships and contribute to the acquisition of literacy during early childhood.

EDL 512 Literature-based Reading Methods for Children (three credits). Focuses on techniques for using classic, contemporary, and multiethnic children's literature of all genres to support reading acquisition and instruction in preschool, primary and elementary grades, with particular attention given to teaching methods using literature. Other topics for discussion include the evaluation and selection of appropriate trade and picture books for classroom use and the role of children's literature in family literacy and recreational reading.

EDL 513 Literature-based Reading Programs for Adolescents (three credits). Familiarizes language arts teachers and other school personnel with contemporary and multi-ethnic literature and nonfiction appropriate to the needs of middle and secondary school students. Emphasizes the developmental nature of reading preferences and comprehension, the application of reader-response theory to the selection and design of teaching strategies and materials, the potential use of adolescent literature across the curriculum, and criteria for selecting and evaluating trade books for young adults.

EDL 514 Adult Literacy (three credits). Designed for teachers of adult learners, program providers, and others who have an interest in adult literacy. Participants examine the current research and theory that informs the teaching of adult learners from multiple perspectives (e.g., socio-cultural, historical, and political). Particular emphasis on the roles of teachers and learners in reading and writing instruction. Addresses elements of successful literacy programs, the selection of appropriate materials, effective instructional strategies, and techniques for authentic evaluation. Resources are shared.

EDL 580 Reading Recovery Internship (six credits). Prerequisites: Permission of the department chair and a minimum of three years experience as a kindergarten, first-grade, or

remedial reading teacher. Teachers learn to use Reading Recovery diagnostic and intervention procedures to accelerate first graders' learning. Year-long practicum during regular school day and school district support are required.

[EDL 695 Seminar in Literacy Research \(three credits\)](#). Prerequisite: 18 hours of graduate course work in reading or permission of the instructor. Concluding seminar for the master's degree in literacy education. Provides synthesis of program content and exploration of the implications of current theory and research for practice.

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Middle Childhood Education Courses

[EDM 513 Teaching and Assessing Language Arts in the Middle School \(four credits\)](#). Critical exploration and analysis of student-centered methods that encourage integrated study of the language arts. Areas of study include pragmatic and theoretical aspects of reading, writing, listening, and oral language development during early adolescence—especially as they apply the selection of objectives, strategies, and materials for instruction and the evaluation of pupil progress.

[EDM 515 Teaching and Assessing Mathematics in the Middle School \(four credits\)](#). Materials and strategies for teaching mathematics to all pupils; stresses the importance of assessment to provide for individual differences in abilities and needs. Includes activities for developing students' problem-solving, reasoning, and communication skills; fostering mathematical connections; and applying technology.

[EDM 516 Teaching and Assessing Social Studies in the Middle School \(four credits\)](#). Prerequisites: Minimum of 75% of social studies content courses completed, and completion of all education foundation and curriculum courses. Explores concepts, purposes, and underlying assumptions of teaching the social sciences; develops activities to improve children's understanding of democratic citizenship in a pluralistic society; addresses interdisciplinary curriculum linkages.

[EDM 517 Teaching and Assessing Science in the Middle School \(four credits\)](#). Introduction to the structure and function of science instruction in upper elementary, middle, and junior high school settings. Provides background and principles of science education, including instructional planning, methods, materials, and a philosophy for teaching science.

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Secondary Education Courses

[EDS 513 Secondary Language Arts Instruction and Assessment \(four credits\)](#). Co-requisite: [EST 572](#). Critical exploration and analysis of current developments in the teaching of secondary English with emphasis on student-centered methods that encourage integrated study of the language arts. Pragmatic and theoretical aspects of language, literature, and composition instruction are considered—especially as they apply to the selection of objectives, strategies, and materials for instruction and evaluation. Areas of study include reading and writing development, the writing process, the processes involved in reading literary works, oral language and listening-skill development, as well as formative and summative techniques for assessing pupil progress.

[EDS 515 Mathematics Education in the Secondary School \(four credits\)](#). Co-requisite: [EST 572](#). Traces the historical development of various fields of mathematics and provides opportunities for the prospective mathematics teacher to gain experience in preparing and teaching problem-centered lessons. Focuses on materials and strategies for teaching mathematics at the intermediate and secondary level. Also considered are student characteristics, teaching and learning styles, issues of equity and diversity, and constructivist theories of learning. Topics for discussion include issues associated with inquiry learning and

changing instructional practices that provide a problem-rich environment for learning and the use of technology.

EDS 516 Social Studies Education in the Secondary School (four credits). Prerequisites: Minimum of 75% of social studies content courses completed, and completion of all education foundation and curriculum courses; co-requisite: **EST 572**. Explores concepts, purposes, and underlying assumptions of teaching social sciences; develops activities to improve intermediate and secondary students' interest and competence in democratic citizenship in a pluralistic society; addresses interdisciplinary curriculum linkages.

EDS 517 Science Education in the Secondary School (four credits). Co-requisite: **EST 572**. Introduction to structure and function of science instruction in the secondary schools; provides background and principles of science education, including instructional planning, methods, assessment, materials, and philosophy for teaching science.

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Special Education Courses

Courses numbered from 500 to 503 are core-course offerings within specializations. Whenever possible, they should be completed prior to enrollment in higher-level courses and may actually serve as prerequisites for same.

ESE 500 Introduction to Special Education (four credits). An introduction to information regarding the characteristics of individuals with the various disabilities included in IDEA. Historical and legal issues regarding special education are addressed. Students identify, plan, and implement a variety of instructional strategies. Introduction to the concepts of Praxis II and to the profession.

ESE 501 Nature and Needs of Young Children with Disabilities and Those at Risk (four credits). Prerequisites: **EDC 500** or equivalent, and **ESE 500**. Exploration of characteristics of young children from birth through age eight who are at risk or disabled, along with their varying needs for early intervention and educational services. Examines historical and current issues and trends in the field of early childhood special education. Required for licensure as an Early Childhood Intervention Specialist.

ESE 502 Introduction to Individuals with Mild/Moderate Disabilities (four credits). Prerequisites: **EDC 500** or equivalent, and **ESE 500**. History, theoretical foundations, and practices related to the social, emotional, and learning characteristics of individuals with mild/moderate disabilities. Includes presentations of diagnostic approaches and educational and social policies relative to these exceptionalities. Required for licensure as a Mild/Moderate Intervention Specialist.

ESE 503 Introduction to Individuals with Moderate and Severe Disabilities (four credits). Prerequisites: **EDC 500** or equivalent, and **ESE 500**. Examination of the learning and behavioral characteristics of individuals with moderate and severe disabilities from birth through adulthood; exploration of implications for a comprehensive service-delivery system and trends in the best practices, both current and historical. Required for licensure as a Moderate/Intensive Intervention Specialist.

ESE 504 Teaching Students of Varying Abilities (three credits). Survey of educational issues related to serving individuals with disabilities as well as those considered to be gifted and talented. Includes an introduction to the characteristics, etiology, classification, incidence, and learning potential of students with special needs, as well as the legal aspects involved in teaching these students. Addresses methods for accommodating learners of varied ability within the regular classroom through alteration of the environment, curriculum, and instruction.

ESE 510 Diagnostic Assessment and Multifactorial Evaluation for Students with Moderate and Severe Disabilities (two credits). Prerequisite: **ESE 503**. Students acquire

competencies associated with norm and criterion-referenced assessment and understand the conditions under which assessments should be planned and conducted. Students gain competency with the interpretation and analysis of assessment information. Required for licensure as a Moderate/Intensive Intervention Specialist.

ESE 511 Classroom Management and Intervention for Severe Behavior Problems (four credits). Prerequisites or co-requisites: ESE 501, and ESE 502 or ESE 503. Includes approaches to classroom management that foster productive social interactions and are most compatible with instructional goals. Also examines the characteristics and causes of various severe behavior problems and research-based techniques for intervention. Required for Intervention Specialist licenses in special education.

ESE 512 Collaboration and Partnerships among Parents and Professionals in Special Education (four credits). Prerequisites or co-requisites: ESE 501, and ESE 502 or ESE 503. Highlights research and productive strategies for establishing successful collaborative relationships with parents of children with disabilities, paraprofessionals, and other professionals. Fosters sensitivity to the needs of culturally and linguistically diverse families. Emphasis on collaboration and partnerships with other professionals, paraprofessionals, and parents as team members designing, implementing, and evaluating appropriate educational experiences for individuals with disabilities. Required for all Intervention Specialist licenses in special education.

ESE 513 Supporting Medical and Intensive Educational Needs (four credits). Prerequisite: ESE 501 or ESE 503. Overview of medical disabilities and the educational implications for children with medical and/or health care needs. Analysis of strategies for cross-disciplinary assessment, planning, technology use, and program implementation, including such disciplines as physical, occupational, and speech therapy; psychology; and other health-related fields. Required for Intervention Specialist licenses in Early Childhood and Moderate/Intensive.

ESE 514 Curriculum and Interventions for Infants and Young Children with Special Needs (four credits). Prerequisite: ESE 501. Examination of developmentally and exceptionality appropriate approaches to early intervention services as well as preschool and primary grade special education. Content includes general and individualized (e.g., IFSPs and IEPs) curricular issues, intervention strategies, and instructional approaches. Required for licensure as an Early Childhood Intervention Specialist.

ESE 515 Assessing Young Children (four credits). Prerequisite: ECE 503 or ESE 501. Provides a basic understanding of the components of developmental screening, child assessment, child identification, and program evaluation for children at-risk and those with disabilities from birth through age eight. Assessment and evaluation focus on child and family variables. Construction of Individualized Education Programs (IEPs) and Individualized Family Service Plans (IFSPs) are stressed. Required for licensure as an Early Childhood Intervention Specialist.

ESE 516 Life Skills and Career Planning in Special Education (two credits). Prerequisite: ESE 502. Study of appropriate curriculum, instructional techniques, methods, and materials for the development of vocational, career, and functional living skills in students with mild/moderate disabilities. Addresses planning for the transition from secondary education to work, post-secondary education, and community involvement. Required for licensure as a Mild/Moderate Intervention Specialist.

ESE 517 Assessment of Mild/Moderate Disabilities (four credits). Prerequisite: ESE 502. Examination of principles, procedures, and instruments of assessment used in the diagnosis of individuals with mild/moderate disabilities. Emphasizes the administration and interpretation of formal and informal assessment tools to identify academic and social difficulties. Students work with an individual client in a clinical setting. Required for licensure as a Mild/Moderate Intervention Specialist, for students who possess a certification or license in another teaching area.

ESE 518 Curriculum and Instruction for Students with Mild/Moderate Disabilities

(four credits). Prerequisites: ESE 502 and ESE 517. Study of appropriate curriculum, materials, instructional techniques, and use of technology with emphasis on academics, social development, and functional skills in educational planning. Explores instructional accommodations for students with mild/moderate disabilities in the regular education setting. Required for licensure as a Mild/Moderate Intervention Specialist, for students who possess a certification or license in another teaching area.

ESE 519 Life Skills Assessment, Curriculum, and Instruction (four credits).

Prerequisite: ESE 503. Exploration of issues related to assessment, functional curriculum theory, Individualized Education Program (IEP) development, choice of teaching objectives, use of technology, and procedures for implementation of quality educational programs for individuals with severe disabilities. Topics include task analysis, prompting procedures, classroom structure, and monitoring of ongoing progress. Required for licensure as a Moderate/Intensive Intervention Specialist.

ESE 520 Assessment, Curriculum, and Instruction to Meet the Academic and Behavioral Needs of Students with Moderate and Intensive Disabilities (four credits).

Prerequisite: ESE 503. Exploration of issues related to assessment, curriculum theory, IEP development, use of technology, and educational approaches for individuals with severe disabilities. Emphasis on teaching academic skills, social and emotional behaviors, and career and life skills. Required for licensure as a Moderate/Intensive Intervention Specialist.

ESE 521 Assessment for Instructional Needs (four credits). Prerequisite: ESE 502. Focus is on the administration and interpretation of formal and informal assessment tools for students with mild/moderate disabilities. Emphasizes the direct link between assessment and the design of appropriate instruction. Assignments require students to make decisions in selecting and administering assessments as well as developing appropriate educational plans for children with disabilities based on assessment outcomes. Clinical or field experience required. Required for first licensure as a Mild/Moderate Intervention Specialist.

ESE 522 Assessment-Based Curriculum and Instruction for Students with Mild/Moderate Disabilities (four credits). Prerequisites: ESE 502 and ESE 521. Focus is on the development and utilization of appropriate assessment-based curriculum and instruction for individuals with mild/moderate educational needs. Participants develop an understanding of the relationships among assessment issues, learning environments and instructional practices employed in learning environments for students with disabilities. Clinical or field experience required. Required for first licensure as a Mild/Moderate Intervention Specialist.

ESE 695 Seminar in Special Education (one to four credits). Prerequisite: 24 hours of graduate course work in special education or permission of instructor. In-depth exploration of selected topics in special education and application of knowledge to professional settings. May be repeated for a maximum of nine credit hours.

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Specialized Study and Field Experience Courses (See Addenda - July 29, 2005)

Without exception, appropriate authorization for enrollment in any course with an EST prefix must be obtained in advance of registration. Moreover, failure to adhere to the following policies and deadlines may result in the delay of graduation by one or more semesters.

Student Teaching and Practicum Requirements: At least two full semesters prior to anticipated registration for any field experience, students should consult their faculty advisor or the Office of Field Services, Rhodes Tower 1344, (216) 687-4616 to determine the required due date for submitting a practicum or student-teaching placement application. Please note that these deadlines are strictly enforced and that placements are only given to students who have achieved a 2.75 cumulative grade-point average for all courses taken at the graduate level.

Exit Requirements: In order to be eligible to take the comprehensive examination, the student

must apply for graduation by the relevant deadline set by the Graduation Office, Fenn Tower, Room 410, (216) 687-3870, and he or she must register for at least one credit hour of course work during the semester in which the examination is to be taken. EST 691 or any other course may be employed for this purpose. Similarly, completion of a master's degree thesis or project assumes registration for a least one credit hour of EST 698 or EST 699 as appropriate.

EST 570 Practicum in Early Childhood Education (three credits). Prerequisite: Prior application and approval of the Office of Field Services. Requires four half-days per week for one semester, typically in a preschool setting, observing and teaching under the direction of a cooperating teacher and a University supervisor. Practicum and/or student teaching (EST 580) must be in an urban setting. Placement may be made in a setting that provides for the inclusion of children with special needs. Includes a seminar. Required for early childhood teaching license.

EST 571 Practicum in Middle Childhood Education (three credits). Prerequisite: Prior application and approval of the Office of Field Services; must be taken concurrently with methods courses as specified by program. Structured field experience designed to accompany specific methods courses and to prepare middle childhood education majors for student teaching; stresses practical application of methods and theory with emphasis on the various roles of a teacher. Students begin formulating a personal philosophy for teaching while working four half-days per week in an upper elementary, middle, or junior high school classroom under the direction of a cooperating teacher and a University supervisor; includes seminar. Required for middle childhood teaching license.

EST 572 Practicum in Secondary Education (three credits). Prerequisite: Prior application and approval of the Office of Field Services; must be taken concurrently with EDS 513, EDS 515, EDS 516, or EDS 517. Structured field experience designed to accompany secondary methods courses in English, science, mathematics, or social studies education. Prepares students for student teaching; stresses the practical application of theory and research to the planning, delivery, and evaluation of instruction. Students explore the various roles of a teacher and begin formulating a personal philosophy for teaching while working in a junior or senior high school classroom under the direction of a cooperating teacher and a University supervisor; includes seminar. Required for secondary teaching license.

EST 573 Practicum in Teaching English to Speakers of Other Languages (three credits). Prerequisite: Prior application and approval of the Office of Field Services. University-supervised field experience designed to provide guided practice in the application of current theory and research in ESL/EFL instruction. Students spend four half-days per week under the direction of a cooperating teacher in a classroom that serves ESL students.

EST 575 Practicum in Speech and Hearing Therapy (four credits). Prerequisite: Prior application and approval of the Office of Field Services. Five days a week for one semester observing and teaching under the direction of a cooperating teacher and college supervisor; weekly seminar required.

EST 576 Practicum in Early Childhood-Special Education (two credits). Prerequisite: Prior application and approval of the Office of Field Services. University-supervised practicum experience in one of three settings: early intervention, preschool programs for children with disabilities, or primary grade special education programs; 100 hours over a prescribed number of weeks, observing and teaching or providing early intervention services under the direction of a cooperating teacher. Required for licensure as an Early Childhood Intervention Specialist.

EST 580 Student Teaching in Early Childhood Education (four credits). Prerequisite: Prior application and approval of the Office of Field Services. University-supervised student teaching experience, typically in a kindergarten or primary grade classroom. Practicum (EST 570) and/or student teaching must be in an urban setting. Placement may be made in a setting that provides for the inclusion of children with special needs. Five full days per week for one semester under the direction of a cooperating teacher. Includes a seminar. Required for early childhood teaching license.

EST 581 Student Teaching in Middle Childhood Education (10 credits). Prerequisite: Prior application and approval of the Office of Field Services; must be taken concurrently with **EDB 595**. Five full days a week for one semester in an upper elementary, middle, or junior high school classroom observing and teaching under the direction of a cooperating teacher and a University supervisor. Required for middle childhood teaching license.

EST 582 Student Teaching in Secondary Education (10 credits). Prerequisite: Prior application and approval of the Office of Field Services; must be taken concurrently with **EDB 595**. Five full days a week for one semester in a secondary school classroom observing and teaching under the direction of a cooperating teacher and a University supervisor. Required for secondary teaching license.

EST 586 Student Teaching in Early Childhood-Special Education (four credits). Prerequisite: Prior application and approval of the Office of Field Services. University-supervised student teaching experience in one or two settings (different from experience in **ESE 576**): preschool programs for children with disabilities and/or primary grade special education programs, observing and teaching or providing early intervention services under the direction of a cooperating teacher. For initial licensure students, student teaching must be completed during the fall or spring semesters. Those seeking a second credential may be able to complete student teaching during the summer with a minimum experience of 200 hours. Successful completion requires demonstration of competencies necessary for licensure as an Early Childhood Intervention Specialist.

EST 587 Student Teaching for Mild/Moderate Disabilities (four credits). Prerequisite: Prior application and approval of the Office of Field Services. University-supervised student teaching experience in a state-approved unit serving students with mild/moderate disabilities; five days per week under the guidance of a teacher certified in the area of mild/moderate disabilities. Successful completion requires demonstration of competencies necessary for licensure as a Mild/Moderate Intervention Specialist. Summer placement may be available, but is limited to students with two or more years of prior teaching experience.

EST 588 Student Teaching for Moderate and Intensive Educational Needs (four credits). Prerequisite: Prior application and approval of the Office of Field Services. University-supervised student-teaching experience in two separate educational settings: one for students with mental retardation and multiple disabilities, and one for students with serious emotional disturbance; five days a week for one semester observing and teaching under the direction of a mentor teacher. Successful completion requires demonstration of competencies necessary for licensure as a Moderate/Intensive Intervention Specialist. Summer student teaching may be available, but is limited to students with one or more years of prior teaching experience with students who have moderate and intensive needs.

EST 593 Special Topics in Curriculum and Instruction (one to four credits). Prerequisite: May require permission of instructor. Opportunity for in-depth exploration of a topic of a special nature with a group having a similar interest; individual and group work in the classroom, library, or community under the direct supervision of at least one graduate faculty member and other resource professionals as necessary. In many instances, the topic explored may be under consideration as a new course or program to assure student participation in this process and will be included in the seminar title. May be repeated for a maximum of nine credits.

EST 596 Independent Study in Education (one to four credits). Prerequisites: Permission of instructor and department chair. Independent project in a selected area of education; approval by and arrangements made with permission of the supervising instructor and the department chair. While no limit is imposed on repetition, only six hours of independent study credit may be applied to the completion of any master's degree program in the College of Education and Human Services.

EST 691 Comprehensive Examination (one credit). Prerequisite: Permission of academic advisor. Designed for M.Ed. candidates taking the comprehensive examination who have

completed all course requirements. Students must be registered for one credit to take the examination and to graduate. Non-graded.

[EST 698 Master's Project \(one to four credits\)](#). Prerequisite: Permission of academic advisor. Culminating project to be undertaken at the completion of master's program under the direction of a faculty committee chaired by the student's academic advisor. May be repeated for a maximum of six credit hours.

[EST 699 Thesis \(one to four credits\)](#). Prerequisite: Permission of academic advisor. Supervised research under the direction of a committee of [Graduate Faculty](#) chaired by the student's academic advisor; culminates in submission of an acceptable thesis. May be repeated for a maximum of six credit hours.

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Environmental Science Courses

The Department of Biological, Geological, and Environmental Sciences offers graduate courses in support of the Master of Education program in Curriculum and Instruction. These courses include [EVS 510](#), [EVS 512](#), [EVS 514](#), [EVS 520](#), [EVS 580](#), [BIO 520](#), and [BIO 580](#). The additional EVS courses listed below are designed for students in the Master of Science programs in Environmental Science and in Biology. Education students should consult their advisor regarding taking these courses or other discipline-specific courses for elective credit in the M.Ed. program. See the Master of Science in Biology and in Environmental Science sections of this Catalog for course descriptions.

[EVS 506 Ecosystem Science \(three credits\)](#).

[EVS 510 Environmental Geology for Teachers \(three credits\)](#).

[EVS 512 Geological History of the Cleveland Area for Teachers \(three credits\)](#).

[EVS 514 Ecosystem Science for Teachers \(three credits\)](#).

[EVS 520 Rivers and Watersheds of Northeast Ohio \(two credits\)](#).

[EVS 523 Map Interpretation and Visualization of Space \(three credits\)](#).

[EVS 560 Geomorphology \(four credits\)](#).

[EVS 580 Earth System Science for Middle School Teachers \(five credits\)](#).

[EVS 593 Special Topics in Environmental Science \(three credits\)](#).

[EVS 594 Special Topics in Environmental Science \(four credits\)](#).

[EVS 680 Issues in Environmental Science \(three credits\)](#).

[BIO 520 Explorations in Biology: Inquiry-based Investigations of Urban Ecosystems \(two credits\)](#).

[BIO 580 Biology Content for Middle School Teachers \(five credits\)](#).

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Modern Languages Courses (See Addenda)

The Modern Languages Department provides courses in support of the Master of Education degree in the Curriculum and Instruction Program with a specialization in foreign languages.

[French \(See Addenda\)](#)

[FRN 534 Studies in Language and Linguistics \(3-0-3\)](#). Prerequisite: Permission of instructor. Topics to be announced in the [Course Schedule](#); may be repeated for credit with change of topic. Linguistics Studies course.

[FRN 540 Field Experience Abroad \(one to eight credits\)](#). Prerequisites: Permission of instructor and departmental approval. Specially arranged field experience abroad, providing intensive exposure to students' target countries and languages; may be preceded by a special preparatory course; examples include supervised individual or group work-study experience in the target country followed by a period of travel and supervised two- to six-week group travel for students interested in a language or culture-oriented project. See the [Course Schedule](#) and contact the department office for further information.

[FRN 592 Special Topics: Study Abroad \(1 to 6 credits\)](#).(See [Addenda - January 01, 2005](#))

[FRN 593 Special Topics in Culture and Civilization \(4-0-4\)](#). Prerequisite: Permission of instructor. Topics to be announced in the [Course Schedule](#). May be repeated for credit with change of topic.

[FRN 594 Special Topics in Literature \(one to six credits\)](#). Prerequisite: Permission of instructor. Intensive study of a particular period, theme, or author. Topics to be announced in the [Course Schedule](#). May be repeated for credit with change of topic.

[FRN 596 Independent Study \(one to eight credits\)](#). Prerequisites: Permission of instructor and departmental approval. Student-initiated, supervised projects involving French language or literature; examples include in-depth study of a particular writer or specialized readings in linguistics. May be used to cover the materials of a listed course not offered in a given year. Projects arranged between individual students and instructor; title of project appears on the student's transcript.

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German (See [Addenda](#))

[GER 534 Studies in Language and Linguistics \(4-0-4\)](#). Topics to be announced in the [Course Schedule](#); may be repeated with change of topic. Linguistics Studies course.

[GER 540 Field Experience Abroad \(variable credit\)](#). Prerequisites: Permission of instructor and departmental approval. Specially arranged field experience abroad, providing intensive exposure to students' target countries and languages; may be preceded by a special preparatory course; examples include supervised individual or group work-study experience in the target country followed by a period of travel, supervised two- to six-week group travel for students interested in a language, or culture-oriented project. See the [Course Schedule](#) and contact the department office for further information.

[GER 592 Special Topics: Study Abroad \(1 to 6 credits\)](#).(See [Addenda - January 01, 2005](#))

[GER 593 Studies in Culture and Civilization \(4-0-4\)](#). Topics to be announced in the [Course Schedule](#). May be repeated for credit with change of topic.

[GER 594 Studies in Literature \(4-0-4\)](#). Topics to be announced in the [Course Schedule](#). May be repeated for credit with change of topic.

[GER 596 Independent Study \(variable credit\)](#). Prerequisites: Permission of instructor and departmental approval. Student-initiated, supervised projects involving German language or literature; examples include in-depth study of a particular writer or specialized readings in linguistics. May be used to cover the materials of a listed course not offered in a given year. Projects arranged between individual students and instructor; title of project appears on the student's transcript.

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Spanish

See the Master of Arts in Spanish section of this Catalog for course descriptions.

[SPN 501 Research Methods \(two to four credits\).](#)

[SPN 502 Advanced Grammar and Stylistics \(four credits\).](#)

[SPN 534 Studies in Language and Linguistics \(four credits\).](#)

[SPN 540 Field Experience Abroad \(two to four credits\).](#)

[SPN 545 Studies in Spanish Civilization \(four credits\).](#)

[SPN 546 Studies in Spanish-American Civilization \(four credits\).](#)

[SPN 564 Studies in Culture and Civilization \(four credits\).](#)

[SPN 583 Studies in Spanish Literature \(four credits\).](#)

[SPN 584 Studies in Spanish-American Literature \(four credits\).](#)

[SPN 589 Studies in Literature \(four credits\).](#)

[SPN 592 Special Topics: Study Abroad \(one to six credits\).](#)

[SPN 593 Special Topics in Spanish\(one to four credits\).](#)

[SPN 596 Independent Study \(one to eight credits\).](#)

[SPN 616 Seminar in Spanish Language \(four credits\).](#)

[SPN 631 Teaching College Spanish \(four credits\).](#)

[SPN 665 Seminar in Hispanic Culture \(four credits\).](#)

[SPN 685 Seminar in Spanish Literature \(four credits\).](#)

[SPN 686 Seminar in Latin American Literature \(four credits\).](#)

[SPN 696 Independent Study \(one to eight credits\).](#)

[SPN 699 Thesis \(one to four credits\).](#)

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Modern Languages (See Addenda)

[MLA 500 Practicum in Language \(one to four credits\).](#) Prerequisites: Permission of instructor and departmental approval. Specially arranged projects or supervised experiences using non-native languages, conducted in the University and the community. Project arranged between individual instructors and students; title of the project appears on the student's transcript.

[MLA 540 Field Experience Abroad \(one to six credits\).](#) Prerequisites: Permission of instructor and departmental approval. Specially arranged field experience abroad providing intensive exposure to students' target countries and languages. See semester [Course Schedule](#) and contact the department for further information.

[MLA 592 Special Topics: Study Abroad \(1 to 6 credits\)](#).(See Addenda - January 01, 2005)

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Cleveland State University

2121 Euclid Avenue, Cleveland, Ohio 44115

www.csuohio.edu 216.687.2000

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2121 Euclid Avenue, Cleveland, Ohio

44115 • 216.687.2000

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College of Graduate Studies

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Graduate Catalog 2004-2006

Master of Science in Physics

Department of Physics

Science Building 112

(216) 687-2425

www.csuohio.edu/physics/Grad/Grad.html

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The Faculty

Professors:

Miron Kaufman, Chair
James A. Lock
Jearl Walker

Associate Professors:

Paul D. Hambourger
Thomas W. Taylor
G. Theodore Wood

Assistant Professors:

Kiril Streletzky
Jacqueline Vitali
Ulrich Zürcher

Adjunct Faculty (The Cleveland Clinic Foundation):

William Davros
Christopher Deibel
Toufik Djemil
Gennady Neyman
Martin Weinhaus
Douglas Wilkinson

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Introduction

Currently there is tremendous growth in optics, condensed matter, and medical physics caused by rapid developments in the fields of superconductivity, electro-optic materials, optical, acoustical, and NMR imaging, semiconductor devices, tomography, holography, and image processing. The Physics Department of Cleveland State University offers an M.S. degree in physics with emphasis on optics and condensed matter physics or on medical physics designed for applied scientists and engineers who wish to develop competence in these rapidly advancing fields. In 2001, the American Physical Society classified the Master of Science in Physics program at Cleveland State as a "strong professional master's degree program."

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Current Research

[Macromolecular Crystallography](#)

X-Ray studies of crystallized biologically and chemically interesting molecules, for designing molecules with specific biological activities for developing drugs.

Experimental Solid State Physics

Current topics in the electronic properties and possible applications of novel materials include intercalated graphite fibers, conductor-insulator composites, and thin-film materials. Most measurements involve low-temperature and/or high-pressure techniques.

Experimental Optics

Laser spectroscopy is being used to study diffusional processes. Presently, aggregation processes that result in the formation of fractal aggregates and phase transitions in liquid mixtures and microemulsions are under investigation. The optical properties of various polymer materials also are being studied using laser techniques.

Optoelectronics

Investigation of basic physics and applications of transparent electronic materials.

Theoretical Optics

Mie scattering calculations presently are being undertaken on artificially produced and natural aerosols for the purpose of understanding a number of atmospheric and basic scattering phenomena. The structure of optical caustics produced by liquid droplet lenses also is being investigated both experimentally and theoretically.

Statistical Physics

Phase transitions in liquid mixtures, glasses, polymers, superconductors, and magnets are studied by applying modern techniques such as the renormalization group. Statistical physics methods are applied to cognitive science, health sciences, and polymer processing.

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Admission Information

To be considered for admission to the master's program in physics, students must meet [College of Graduate Studies](#) requirements for admission (see the Admission chapter of this Catalog) and have a B.S. degree in physics, mathematics, engineering, or an allied field. Students with deficient backgrounds will be required to register for additional courses to remove deficiencies.

To be considered for admission to the Master of Science in Physics with a specialization in Medical Physics, applicants must meet [College of Graduate Studies](#) admission requirements and hold a B.S. degree in physics, chemistry, electrical engineering, chemical engineering, mechanical engineering, or nuclear engineering.

To facilitate the admission process, it is strongly recommended that applicants use the online application system at www.csuohio.edu/admissions/gradForm.html. The processing time for paper application forms is longer.

Undergraduate Deficiencies: For students applying to the Medical Physics program, the following courses must be taken if there are deficiencies in the applicant's undergraduate preparation.

PHY 330 Introduction to Modern Physics

PHY 350 Electricity and Magnetism

PHY 360 Electronics Laboratory

PHY 474 Thermal Physics

BIO 266 Human Anatomy and Physiology

BIO 267 Human Anatomy and Physiology Laboratory

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Degree Requirements

A minimum of 32 credit hours approved by the Physics Graduate Committee is required for graduation. The following courses constitute a typical program with emphasis on optics and materials: [PHY 520](#), [PHY 550](#), [PHY 555](#), [PHY 560](#), [PHY 565](#), [PHY 570](#), [PHY 580](#), and [PHY 598](#).

The medical physics program includes the following: [PHY 515](#), [PHY 520](#), [PHY 530](#), [PHY 535](#), [PHY 565](#), [PHY 570](#), and [PHY 598](#) (two semesters). The medical physics emphasis also requires knowledge of electronics laboratory and anatomy.

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Courses (See Addenda)

[PHY 510 Holography \(2-4-3\)](#). Laboratory course in holography. Production of single- and multiple-beam transmission and reflection holograms and three-dimensional cylindrical holograms.

[PHY 515 Introduction to Biological Physics \(4-0-4\)](#). As the body of knowledge in physics expands and diffuses into the life sciences, the need for instruction in biological physics increases. Students learn how to use the concepts of physics to analyze and understand important aspects of biological systems. The course is appropriate for graduate students majoring in physics, chemistry, biology, or engineering.

[PHY 516 Macromolecular Crystallography \(4-0-4\)](#). Macromolecular crystallography is at the heart of the genomics age allowing the determination of the three-dimensional structures of the proteins for which the genomes code. This information is used to determine and understand their function and to develop new drugs that cure diseases. This course teaches students the fundamentals of diffraction theory, crystal properties, and the basic concepts of solving the structures of macromolecular crystals. The course is appropriate for advanced undergraduate and graduate students majoring in physics, chemistry, and biology.

[PHY 520 Computational Physics \(4-0-4\)](#). Numerical simulations such as Monte Carlo and visualizations of complex physical systems; examples from fractals, chaos, and cellular automata.

[PHY 530 Introduction to Medical Physics \(4-0-4\)](#). Prerequisites: [PHY 241](#) (or [PHY 243](#)) and [PHY 242](#) (or [PHY 244](#)), or permission of the instructor. An introduction to the medical applications of radiation and imaging physics. Topics include interactions of radiation with biological tissues, production and properties of radionuclides, radiation therapy physics, dosimetry, diagnostic radiology, nuclear medicine, and issues of radiation safety.

[PHY 535 Radiation Therapy Physics \(4-0-4\)](#). Prerequisite: [PHY 430](#) (or [PHY 530](#)), or permission of the instructor. An examination of therapeutic applications of ionizing radiation. Included are basic radiological physics and dosimetry, modern methods of using radiation in teletherapy and brachytherapy, and radiation protection.

[PHY 550 Optics \(4-0-4\)](#). Geometrical optics with applications to microscopes, cameras, and vision; thick lenses and aberrations; polarization; interference and interferometers; Fresnel and Fraunhofer diffraction; and Rayleigh scattering.

[PHY 555 Advanced Optics Laboratory \(2-6-4\)](#). Hands-on knowledge in optical principles and techniques; dispersion in glass, diffraction, and interferometry. Includes a student-selected

project.

PHY 560 Laser Physics and Photonics (4-0-4). Basics of laser operation and photonics. Topics include spontaneous and stimulated emission laser types, optical detectors, integrated optics, rate equation models for lasers, quantum noise limits, and elementary nonlinear optics.

PHY 565 Image Processing (4-0-4). Fraunhofer and Fresnel diffraction, linear systems theory, optical image processing with coherent light, optical transfer function for incoherent light, FFT algorithm, and digital image processing in pixel space and in Fourier space.

PHY 570 Environmental Physics (4-0-4). Study of physical phenomena underlying environmental issues. Topics include energy and entropy laws; electromagnetic radiation; forms of energy, such as fuels, nuclear, and solar; percolation model; and chaos theory as it pertains to population dynamics and climate.

PHY 580 Optical Materials (4-0-4). Fundamentals of electron motion in solids; physics of LEDs, diode lasers, and solar cells; optoelectronic properties of transparent and porous semiconductors; materials for optical modulation, data storage, and computing; liquid crystals; and flat panel displays.

PHY 593 Special Topics in Physics (one to six credits). Topics from condensed matter physics, optics, computational physics, and pedagogy.

PHY 596 Laboratory Training in Radiation Therapy Physics I (2-6-4). (See Addenda - January 01, 2005)

PHY 597 Laboratory Training in Radiation Therapy Physics II (2-6-4). (See Addenda - January 01, 2005)

PHY 598 Project (2-6-4). Students work on an approved research problem, experimental or theoretical, under the guidance of the faculty advisor.

PHY 680 Physics of Materials (4-0-4). Binding energy of materials, heat capacity, thermal and electrical conductivity, free-electron and band theories of solids, and quantum statistics.

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Cleveland State University

2121 Euclid Avenue, Cleveland, Ohio 44115

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2121 Euclid Avenue, Cleveland, Ohio
44115 • 216.687.2000

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College of Graduate Studies

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Graduate Catalog 2004-2006

Master of Arts in Psychology

Department of Psychology

Chester Building 158

(216) 687-2544

www.csuohio.edu/psy/grad.html

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The Faculty

Professors:

Mark H. Ashcraft, Chair
 James A. Bard, Emeritus
 Brian F. Blake
 Bette Bonder
 Stephen R. Coleman
 David M. Grilly
 Connie Hollinger
 Boaz Kahana
 Frank M. Marzocco, Emeritus
 Deborah L. Plummer
 Richard F. Rakos
 James M. Schuerger, Emeritus
 Stephen D. Slane
 Robert N. Sollod
 Benjamin Wallace
 John P. Wilson

Associate Professors:

Chieh Chen Bowen
 Jennifer Druley
 Phillip L. Emerson, Emeritus
 Leslie E. Fisher
 Robert F. House, Emeritus
 Colleen McMahon
 Kathleen McNamara
 Albert F. Smith

Assistant Professors:

Carla Carten
 Norma Cofresi
 Keith A. Kline
 Amir Poreh
 Andrew Slifkin

Adjunct Professors:

Marise Alexander
 Phil Belzunce
 Michael Brazzel
 Francis W. Chiappa
 Diane Coble
 Treacy Crowley
 Lalei Gutierrez
 James Hinkelman-Bahn
 Michael Wisniewski

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The Programs

The Master of Arts (M.A.) in Psychology program is comprised of a Clinical specialization, an Experimental Research specialization, a Consumer-Industrial Research specialization, and a Diversity Management specialization. The program in Clinical Psychology is designed primarily for students interested in the field of psychological service, broadly conceived to embrace community, clinical, and educational settings, including school psychology. The Experimental Research program emphasizes basic and applied research skills, to be developed through an in-dividually tailored program of study that includes both core (required) and elective courses and culminates in the successful completion of a thesis. The program in Consumer-Industrial Research prepares students to apply psychological research techniques and concepts in business and institutional settings. Graduates are qualified for positions in public opinion polling, market research, program evaluation, personnel, human resources, and other applied research and data analysis contexts. The program in Diversity Management provides students with a solid foundation in psychological theory, research, and applied skills necessary for effective understanding and management of human diversity in organizations.

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Admission Information

In addition to College of Graduate Studies requirements for admission, the Department of Psychology requires of all applicants:

1. Scores from the Graduate Record Examination (GRE). Requirements vary by program; see specific program requirements below.
2. A firm foundation in the basic principles of psychology.
3. A personal statement.

To facilitate the admission process, it is strongly recommended that applicants use the online application system at www.csuohio.edu/admissions/gradForm.html. The processing time for paper application forms is longer.

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For More Information

For further information, contact the Psychology Department at (216) 687-2544 to arrange an appointment with a program advisor. The Psychology Department is located in the [Chester Building, Room 158](#).

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Clinical Psychology Program

Introduction

The Clinical Psychology specialization at Cleveland State University is referred to as a terminal master's degree program because the department does not currently offer a doctoral degree program. Upon receipt of the master's degree in Clinical Psychology, a graduate may elect to apply to a doctoral program at another institution to obtain licensure as a psychologist. Other students may elect to work as psychology assistants under the supervision of doctoral-level, licensed psychologists. Psychology assistants may gain employment in hospital or clinical settings and engage in assessment and research activities with a variety of client populations.

The Clinical Psychology specialization offers two tracks of study to accommodate the interests of students described above: 1) Doctoral Preparation track and 2) Practitioner track. Each track requires the student to complete a 58-60 credit hour program of course work and clinical field experiences. The Doctoral Preparation track also requires completion of a thesis research project. The program requires full-time study for two academic years; no courses are offered during the summer. Students may specialize in either child- or adult-oriented diagnostic and treatment course work.

Both tracks emphasize core content and basic skills in the first year, and practical experience and professional skills in the second year. The curriculum emphasizes human development and its deviations, as well as the methods and techniques of assessing and influencing this development in clinical, community, and educational contexts. A student in the Doctoral Preparation track must complete a thesis as part of his or her graduate program.

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Faculty Research and Publications

The faculty members of the Clinical Psychology specialization have diverse interests, which are reflected in the course content of the classes they teach and in articles written for national and international publications. These interests include child and adult psychopathology; human motivation and attitudes; psychopharmacology; women's issues; legal and ethical issues in psychology; multicultural issues; behavior therapy; abnormal psychology; gerontology; personality assessment; social competence promotion; and health and wellness.

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Financial Assistance

Assistantships or tuition waivers generally are awarded to first-year students; all application materials must be received by February 15 for full consideration for financial assistance. Typically, the award consists of a full-tuition grant or, as budgets permit, an assistantship that includes a stipend. During the second year of the full-time Clinical Psychology specialization, some students work in paid fieldwork placements.

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Career Information

Graduates of the Clinical Psychology specialization typically are employed as psychology assistants in such work settings as hospitals, mental health centers or clinics, private practice, human service agencies, industrial settings, and geriatric facilities. Primary functions include assessment, consultation, and administration. About 30 percent of graduates of this specialization continue on to doctoral training.

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Admission Information

The Clinical/Counseling specialization of the Department of Psychology requires of all applicants:

1. Scores from both the General Aptitude Test and the Subject Test in Psychology of the Graduate Record Examination;
2. A firm foundation in the basic principles of psychology;
3. A departmental information form and personal statement;

4. Official transcripts for all colleges and universities attended;
5. Two letters of recommendation; and
6. An interview, by invitation, with faculty members of the Clinical Psychology program committee.

For optimal consideration of their application to the Clinical Psychology specialization, prospective students should have the following course work completed by the time of enrollment: Introductory Psychology, Personality or Theories of Personality, Abnormal Psychology, Memory and Cognition, Basic Statistics, and Experimental Psychology (Laboratory or Research Design).

Additional preparation above the minimum suggested will likely strengthen applications. If an applicant received a B.A. degree in psychology five or more years ago, he or she is encouraged to update credentials by enrolling in advanced undergraduate or beginning graduate courses.

The application deadline is February 15.

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Degree Requirements

(Clinical Psychology Specialization)

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Doctoral Prep Track Courses

Year One: Fall Semester

PSY 511 Univariate Statistics and Experimental Methodology (four credits)

PSY 535 Clinical Interviewing Practicum (two credits)

PSY 550 Child and Adolescent Development and Disorders (four credits) or PSY 555 Adult Psychopathology (four credits)

PSY 672 Multicultural Psychology and Diversity Practicum (two credits)

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Year One: Spring Semester

PSY 538 Intellectual Assessment and Practicum (four credits)

PSY 542 Theories of Personality (four credits) or PSY 651 Clinical Psychopharmacology (four credits; offered alternate years)

PSY 587 Personality Testing and Laboratory (four credits)

PSY 611 Advanced Data Analysis with Computer Applications (four credits) or other methodology/statistics elective

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Year Two: Fall Semester

PSY 537 Child and Adolescent Assessment and Treatment (four credits) or PSY 604 Concepts and Methods of Individual Psychotherapy (four credits)

PSY 660 Ethical, Legal, and Professional issues (two credits)

PSY 690 Fieldwork Placement (four credits)

PSY 699 Research and Thesis (four credits)

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Year Two: Spring Semester

PSY 542 Theories of Personality (four credits) or PSY 651 Clinical Psychopharmacology (four credits; offered alternate years)

PSY 650 Family and System Interventions (two credits)

PSY 670 Crisis Management (two credits)

PSY 691 Fieldwork Placement (four credits)

PSY 699 Research and Thesis (four credits)

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[Practitioner Track Courses](#)

Year One: Fall Semester

PSY 535 Clinical Interviewing Practicum (two credits)

PSY 538 Intellectual Assessment and Practicum (four credits)

PSY 550 Child and Adolescent Development and Disorders (four credits) or PSY 555 Adult Psychopathology (four credits)

PSY 672 Multicultural Psychology and Diversity Practicum (two credits)

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Year One: Spring Semester

PSY 542 Theories of Personality (four credits) or PSY 651 Clinical Psychopharmacology (four credits; offered alternate years)

PSY 587 Personality Testing and Laboratory (four credits)

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Year Two: Fall Semester

PSY 511 Univariate Statistics and Experimental Methodology (four credits)

PSY 660 Ethical, Legal, and Professional Issues (two credits)

PSY 690 Fieldwork Placement (four credits)

PSY 537 Child and Adolescent Assessment and Treatment (four credits) or PSY 604 Concepts and Methods of Individual Psychotherapy (four credits)

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Year Two: Spring Semester

PSY 691 Fieldwork Placement (four credits)

PSY 542 Theories of Personality (four credits) or PSY 651 Clinical Psychopharmacology (four credits; offered alternate years)

PSY 650 Family and System Interventions (two credits)

PSY 670 Crisis Management (two credits)

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Fieldwork Placement

All students in the Clinical Psychology specialization who perform satisfactorily in the first year are assigned half-time (15 hours per week) field placements in their second year (PSY 690 and PSY 691). Four hours of academic credit are earned each semester for satisfactory completion of fieldwork; grades of S (Satisfactory) or F (Failure) are given upon completion of each semester over the full year's experience. Periodic, comprehensive evaluations of the students' work are made by the agencies' fieldwork supervisors. Students may, on occasion, be required to continue their fieldwork placements into the summer, if necessary, to demonstrate satisfactory performance.

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Exit Requirements

A thesis is required of Clinical Psychology students in the Doctoral Preparation track. For Clinical Practitioner students, graduation is based on the successful completion of the required courses and fieldwork experience. These students, however, may elect to substitute a thesis for specified course work as part of the program of instruction.

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Experimental Research Program

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Introduction

The goal of the Experimental Research specialization in Psychology is for students to develop skills in research design and analysis; broad knowledge of substantive areas of psychological research; and expertise in one research area. The program consists of both required and elective courses and individual research experience that culminates in completing a master's thesis.

Each student is expected to become involved in research when he or she begins the program and to continue this involvement during his or her course of study. Ideally, every student participates in a faculty member's research program; after developing appropriate knowledge and skills about this domain, the student demonstrates expertise by completing a thesis (with the advice and supervision of that faculty member).

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Faculty Research

Focal areas of research include health psychology and cognitive processes. Areas of faculty expertise include behavioral pharmacology, cognition (including perception, attention, memory, and decision making), health psychology, history of psychology, human performance, research methodology, and social psychology. Current areas of faculty research include accuracy of survey self-reports; cardiovascular responsivity to stress; coping with chronic illness; issues in the history of psychology; mathematical cognition; motor performance; student evaluations of instruction; and visual perception.

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Research Facilities

Research facilities include testing rooms equipped with microcomputers and software suitable for experimental data collection. The department also has laboratories in which experiments that investigate cardiovascular responses and human movement are conducted. The University has licenses for major statistical software packages; these are available in University computer laboratories as well as in the psychology department's own computer laboratory. Most scholarly materials, if not available in the University's library, are readily accessible through Ohiolink, a statewide consortium of libraries that subscribes electronically to many journals, or through inter-library loan.

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Financial Assistance

Assistantships that include tuition waivers and/or stipends are typically awarded to first-year students; some financial assistance may be available to second-year students. To be considered for financial assistance, applications must be received by March 1.

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Career Information

Graduates of the Experimental Research program often pursue further graduate work in psychology or seek employment in research-related occupations. The skills and knowledge acquired in the Experimental Research graduate program may provide a beneficial foundation for further graduate study in other professional fields (e.g., clinical psychology, law, business).

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Admission Information

The Experimental Research specialization of the Department of Psychology requires of all applicants:

1. Official Graduate Record Examination (GRE) scores for both the General Aptitude Test and the Psychology Subject Test;
2. A personal statement;
3. A departmental information form;
4. Official transcripts for all colleges and universities attended; and

5. Two letters of recommendation, preferably from individuals familiar with the applicant's academic abilities.

Applicants should have some academic preparation in psychology; prospective applicants without such preparation are encouraged to consult with program faculty about the adequacy of their preparation and about what additional preparation might be suitable.

Applications are reviewed on a rolling basis. For full consideration for financial assistance, applications should be received by March 1.

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Degree Requirements

(Experimental Research Specialization)

Forty (40) credit hours are required for graduation from the program. The course requirements are listed below. A student is expected to involve his or her mentor/advisor in the course selection process so that course work is well suited to the student's objectives. A normal course load is 12 to 16 credits per term. Deviation from the specified curriculum, as well as acceptance of transfer credit, must be approved by the Experimental Research Program Committee.

Core A. 16 credits

PSY 511 Univariate Statistics and Experimental Methodology (offered once a year)

PSY 611 Advanced Data Analysis with Computer Applications (offered once a year)

PSY 699 Research and Thesis (taken twice for a total of eight credits) (offered every semester)

Core B. 16 credits (each course offered every two to three years)

Select four of the following:

PSY 525 Social Psychology

PSY 561 Classical, Instrumental, and Operant Conditioning

PSY 562 Learning, Memory, and Cognition

PSY 568 Advanced Perception

PSY 582 Personality Theory and Research

PSY 588 History of Psychology

PSY 589 Physiological Psychology

PSY 651 Clinical Psychopharmacology

Electives. Eight credits

Any graduate courses (including non-psychology courses) approved by a faculty advisor.

If the student has passed PSY 342 as a Cleveland State University undergraduate, PSY 582 is waived. If PSY 479 was completed, PSY 588 is waived. If PSY 481 was completed, PSY 651 is waived. If PSY 582, PSY 588, and PSY 651 are waived, any applicable graduate-level courses may be used to satisfy the course requirement of the degree.

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Exit Requirements

To be awarded the M.A. degree in Psychology, a student must complete 40 credit hours of course work and a thesis. Courses should be selected in consultation with a faculty advisor, and the program of study must be approved by the Experimental Research Program committee. For the thesis project, it is the student's responsibility to identify a suitable advisor; students are encouraged to consult with the program director for assistance. After a faculty member has agreed to advise a student's thesis, the project is developed. In consultation with the advisor, the student identifies two other faculty members to serve, along with the advisor, as the student's thesis committee. After the committee approves a thesis prospectus, the project may be carried out. Completion of the thesis project requires both that the written thesis be accepted by the committee and that the student present his or her findings orally.

Students are urged to consult the College of Graduate Studies policies and requirements concerning theses in the appropriate section of this Catalog.

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The Consumer-Industrial Research Program

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Introduction

The Consumer/Industrial Research program (CIRP) prepares students to conduct applied research in business and organizational settings. Students acquire the conceptual tools, research methods, and data analysis techniques related to understanding consumers' product purchasing, advertising responses, brand image, and related concepts.

The second emphasis of the Consumer/Industrial Research program is the application of research methods and data analysis skills within an organization. Therefore, training is given in job satisfaction surveys, organizational climate surveys, evaluation of new organizational programs, conducting job analysis projects, and other methods.

The base for both areas of applied research is the development of the ability to design applied research, gather and analyze data, and determine the meaning and usefulness of the results. Therefore, there is an emphasis on statistics and research-methods courses. The content courses in consumer and industrial-organizational psychology build on these courses for specific applications. Electives may be used to augment both research skills and content areas.

This specialization is designed to be completed in one and one-half to two years and culminates with a thesis. While it is expected that all students will have the opportunity to participate in the solution of actual problems under the guidance of faculty, selected students also have the opportunity for field placements in business settings.

The first year of the Consumer/Industrial Research specialization typically consists of the program core — quantitative methods, research design, field research methods, and substantive courses in industrial-organizational psychology and consumer behavior. During the second year, the student typically enrolls in elective courses while completing the thesis.

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Faculty Research

Faculty members have contributed over 200 publications, including books, book chapters, journal articles (e.g., in *Journal of Marketing Research*, *Journal of Applied Psychology*, *Journal of Vocational Behavior*, *Multivariate Behavioral Research*, *Academy of Management Review*), technical reports, and convention papers, as well as articles in trade periodicals, such

as [Agri Marketing and Marketing News](#). They have served as reviewers for over a dozen professional journals. Illustrative studies concern occupational stress, measurement of consumer preferences, reactions to advertising, personality aspects of occupational choices, development of performance appraisal systems, and computer modeling of individuals' purchase decisions.

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Career Information

The program prepares students to work in organizations that need “people” information, whether it concerns consumers or organizational members. Students completing this program are capable of designing and executing research to answer such questions in a manner that will contribute to the functioning of the organization. In the area of consumer behavior, graduates are suited to market research and public-opinion research positions and to program evaluation and assessment in public agencies. Additionally, in the industrial-organizational realm, they are prepared for employee surveys, training-effectiveness evaluation, job analysis, developing selection systems, and other such research.

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Admission Information

Applicants for admission to the Consumer/Industrial Research specialization must submit the following:

1. An Application for Graduate Admission;
2. Scores on the General Aptitude portion of the GRE;
3. A personal statement;
4. Official transcripts for all colleges and universities attended; and
5. Two letters of recommendation.

The application deadline is March 15, although applications received after this date will receive consideration. Among the criteria used by the committee for selection are the usual indicators of academic promise—prior grades and test scores, as well as letters of recommendation—plus indications of particular promise based on skills, personal characteristics, and experiences relevant to work in the Consumer/Industrial Research specialization. Additionally, the committee expects candidates to have completed at least six credits in psychology and to have mastered the basics of statistical analysis. Preferred candidates will have a strong statistical background, prior experience, and a record of high achievement.

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Degree Requirements

(Consumer/Industrial Research Specialization)

The program requires satisfactory completion of a 43-credit-hour sequence, including Thesis or Applied Research.

Core A. Core Content Requirements

(19 credits)

All of the following must be completed:

PSY 518 Personnel Psychology or PSY 522 Organizational Psychology

PSY 519 Consumer Psychology

PSY 593 Special Topics in Psychology: Advanced Organizational Psychology, or PSY 593 Special Topics in Psychology: Job Analysis and Performance Appraisal

PSY 620 Advanced Consumer Research

MKT 501 Marketing Theory and Practice

Core B. Methodological Requirements

(12 credits)

All of the following must be completed:

PSY 511 Univariate Statistics and Experimental Methodology, or COM 512 Communication Research Methods

PSY 512 Field Research Methodology

PSY 611 Advanced Data Analysis with Computer Applications, or COM 531 Multivariate Statistical Methods

Core C. Research Requirements

(four credits)

PSY 699 Research and Thesis

Electives (eight credits)

Select from the following:

PSY 518 Personnel Psychology

PSY 522 Organizational Psychology

PSY 525 Social Psychology

PSY 562 Learning, Memory, and Cognition

PSY 582 Personality Theory and Research

PSY 590 Consumer Psychology Internship

PSY 596 Special Problems in Psychology

COM 540 Persuasive Communication and Campaigns

MLR 640 Performance Appraisal, Compensation, and Benefits

MKT 602 Marketing Research

Other courses in Marketing, Operations Management and Business Statistics, Management and Labor Relations, Communication, and Psychology are possible for elective credit, subject to approval by the CIRP Faculty Committee.

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Thesis

Students completing a thesis should take four credit hours of [PSY 699](#) Research and Thesis.

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Exit Requirements

Upon completion of the core courses, a student submits a thesis proposal to a research committee of faculty selected by the student and faculty advisor. With committee approval, the student carries out his or her research under the direction of the faculty advisor. Upon acceptance of the completed thesis project by the committee, the student is awarded the M.A. degree.

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Diversity Management Program

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Introduction

The Diversity Management program is designed for consultants, human resource personnel, mental health professionals, business executives and managers, educators and administrators, and other professionals who confront the challenges and opportunities presented by the diversity of individuals inherent in American society. The curriculum provides students with theoretical grounding in psychology as well as specific skills necessary to assess individual and systemic issues that arise in organizations, to facilitate the interpersonal and group dynamics that accompany efforts to resolve conflict, to foster mutual respect and acceptance, and to promote constructive social change. The two-year, 40-semester-hour program combines research findings with theory and practice through course work firmly rooted in the empirical tradition of psychology.

The Diversity Management program has an innovative curriculum that combines traditional-format course work, directed study, and nontraditional-format courses designed for students holding full-time jobs. The latter courses are offered throughout the first year in segments consisting of intensive three-day “course components.”

The first year provides the foundation work of the curriculum. Basic theory and research in social psychology and diversity psychology are examined, as are group dynamics, multicultural competencies, and organizational and community development and change. In the second year, theories and methods of intervention are applied to actual issues through: 1) a six-month supervised Fieldwork Placement and 2) an in-depth examination of a selected topic in diversity psychology that culminates in a professional presentation and a thesis or comprehensive exam.

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Faculty Research

Faculty members involved with the Diversity Management program possess extensive experience and training in issues concerned with human behavior, interactions, and systems. As nationally and internationally known educators and consultants, they have written and presented widely in the areas of diversity management and consultation, racial identity development, counseling diverse populations, legal and ethical issues affecting intervention, performance appraisal, team building, [sexual harassment](#), conflict resolution, systems change strategies, and executive assessment and development.

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Admission Information

Applicants to the Diversity Management program must:

1. Hold a bachelor's degree;
2. Complete both the [College of Graduate Studies](#) and department admission application forms;
3. Submit academic transcripts for all colleges and universities attended;
4. Submit two letters of recommendation; and
5. Complete the Personal Statement Form, which includes:
 - a. A brief biographical sketch noting events or experiences that provide supportive evidence that the applicant is an appropriate candidate for the degree in Diversity Management.
 - b. A description of the applicant's goals and interests in Diversity Management and how the M. A. program will facilitate achievement of those goals.

All applicants must demonstrate a firm foundation in the basic principles of psychology. Applicants who lack this background but whose candidacy for admission is strong in other respects may be offered entrance to the program contingent on remediation of deficiencies. In addition, any applicant with an undergraduate [grade-point](#) average below 3.00 must provide scores at the 50th percentile or better on the [GRE](#) (general and subject sections of the examination); this requirement is waived for those who have already obtained another master's degree.

Applicants are admitted for study beginning in fall term. While there is no formal application deadline, applications are reviewed as they are completed and admission decisions are made on a "rolling" basis. Early application is encouraged. To ensure consideration, contact the program director by May 31.

Submit all application materials to the Graduate Admissions Office.

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Degree Requirements

(Diversity Management Specialization)

The nontraditional-format course work is indicated in the outline of the curriculum below. All courses are four credits.

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First Year

(16 credits)

[PSY 525 Social Psychology](#)

[PSY 573 Group Dynamics](#)

[PSY 605 Human Services Consultation and Intervention](#)

[PSY 672 Multicultural Psychology and Diversity Practicum](#)

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Second Year

(24 credits)

PSY 518 Personnel Psychology

PSY 522 Organizational Psychology

PSY 690 and PSY 691 Fieldwork Placement: Diversity Consultation (taken fall and spring terms for a total of eight credits)

PSY 699 Research and Thesis or PSY 685 Directed Readings for Comprehensive Exam and Thesis

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Fieldwork Placement

In the second year, students work individually or form small consulting groups to work with local organizations that seek diversity management interventions. Over the six-month period of this supervised, hands-on experience, students apply assessment strategies to gather data on the organizational culture, analyze the data, provide feedback, recommend changes, and deliver the indicated intervention to the client.

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Exit Requirements

In the spring term of the second year, students enroll in either PSY 699 Research and Thesis or PSY 685 Directed Readings for Comprehensive Exam and Thesis. Each student completes an in-depth exploration, review, and integration of psychological theory and application on a diversity topic or problem relevant to his or her interests, needs, or settings. The student presents findings and analyses in two formats: a thesis suitable for publication or for presentation at a professional conference and, near the end of the term, all students expecting to graduate in May make oral presentations of their work. Students taking Comprehensive Exams attend review sessions and study groups. On an assigned day they take a three-part written exam that is evaluated by members of the faculty for satisfactory completion of program exit requirements.

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Courses

PSY 511 Univariate Statistics and Experimental Methodology (4-0-4). Special correlational methods, elementary experimental design, and hypothesis testing in psychological research.

PSY 512 Field Research Methodology (4-0-4). Prerequisites: PSY 511 or equivalent, and permission of instructor. Survey sample selection, questionnaire construction, structured interview procedures, and attitude/opinion measurement procedures.

PSY 513 Measurement and Program Evaluation (2-0-2). Examines program evaluation methods in terms of task-specific knowledge (e.g., principles of measurement), skills (e.g., data analysis), and process issues, using a case study approach based on actual program evaluations from a variety of educational institutions (e.g., Cleveland Municipal Schools, local foundations, ODE's Office for Exceptional Children).

PSY 518 Personnel Psychology (4-0-4). Prerequisite: Permission of instructor, with preference for students with testing experience. Systems and procedures of employee selection.

Secondary emphasis on the application of learning principles to employee training.

PSY 519 Consumer Psychology (4-0-4). An analysis of the impact of attitudes, motivation, personality, and learning processes on an individual's use of goods and services, with applications to marketing research, public opinion polling, and advertising research.

PSY 522 Organizational Psychology (4-0-4). Analysis of the "organizing" of work from a psychological perspective and the application of psychological principles to improve organizational effectiveness. Topics range from work motivation to organizational theory. Other areas of focus include leadership, job attitudes, job design, and organizational climate.

PSY 523 Assessment Techniques (3-0-3). Intensive study of selected psychological tests widely used in educational and vocational counseling; emphasis on practical skills and decision making.

PSY 525 Social Psychology (4-0-4). Review of the field with emphasis on social motivation, social cognition, impression formation, social influence, attitude change, and group processes; consideration of social processes in applied settings.

PSY 535 Clinical Interviewing Practicum (2-0-2). Introduction to the process of clinical interviewing, including personal issues, role considerations, development of the therapeutic alliance, active listening skills (e.g., focusing, interpretation, confrontation), and the conduct of the initial interview. Instruction employs didactic lectures, modeling, class exercises, and student role-playing.

PSY 536 Behavioral Assessment (4-0-4). Examination and application of methods for measuring behavior in naturalistic settings, including sampling methods and graphic displays of data for purposes of problem identification and progress monitoring under treatment conditions.

PSY 537 Child and Adolescent Assessment and Treatment (4-0-4). Provides students with a background in assessment and intervention for common academic, affective, and behavior problems experienced by school-aged children. Emphasizes the direct link between assessment and intervention. Students gain competencies in the development and delivery of evidence-based interventions for childhood problems.

PSY 538 Intellectual Assessment and Practicum (4-0-4). Practicum experience in the administration and interpretation of standardized tests of ability, with emphasis on psychological report-writing. Secondary emphasis on major and contemporary theories of intelligence and their applications in measurement instruments.

PSY 542 Theories of Personality (4-0-4). A consideration of major personality theories, with an examination of their implications for application and research.

PSY 545 Advanced Child Psychology (4-0-4). A consideration and critique of theories and research in the areas of cognitive development, language acquisition, and social cognition. Focuses on empirical evaluation of theories and contemporary research.

PSY 549 Aging and Mental Health Issues (4-0-4). Examination of ideas and empirical findings concerning critical periods and issues in adult development and aging. Topics include sexuality, marriage, divorce, careers and employment, life styles, sex roles, biological changes in aging, and subcultural differences.

PSY 550 Child and Adolescent Development and Disorders (4-0-4). Consideration of theories and research relating to the development of individual affective patterns; ontogenetic development of motor, sensory, perceptual, cognitive, and linguistic skills in infants, children, and adolescents.

PSY 555 Adult Psychopathology (4-0-4). Survey and critique of traditional nosologies in social and behavioral deviance and the influence of nosologies on assessment; a consideration of some innovative schemes of classification; analysis of pathological process in symptom and syndrome; practice in classification skills.

PSY 561 Classical, Instrumental, and Operant Conditioning (4-0-4). An examination of experimental methodology, empirical phenomena, and theoretical developments in these areas. Offered in alternate years.

PSY 562 Learning, Memory, and Cognition (4-0-4). A comprehensive treatment of recent research and major theoretical positions in the areas of human learning, memory, and cognitive processes. Offered in alternate years.

PSY 564 Psychoeducational Intervention (4-0-4). Prerequisites: PSY 535, PSY 536, and permission of instructor. Practicum experience in the application of behavioral consultation methods to academic problems in school settings, including strategies for data collection, intervention design, progress monitoring, and techniques for facilitating adherence to intervention plans.

PSY 568 Advanced Perception (4-0-4). Study of the major theories and research methodologies of perception; stresses current research derived from classical and contemporary theories. Offered in alternate years.

PSY 570 Learning and Behavior Change in Children and Adults (4-0-4). Examination of the philosophical, theoretical, empirical, pragmatic, and ethical considerations involved in the assessment and modification of human behavior in a variety of settings (e.g., home, office, hospital, worksite, school, residential facility). Modification of both overt and covert behaviors are examined.

PSY 572 Group Interventions (2-0-2). Review of evidence-based group intervention programs in schools. Basic knowledge about group process, development, and leadership. Applications of group interventions in school settings and practice in applying group leadership skills.

PSY 573 Group Dynamics (4-0-4). Examination of interpersonal relations and group processes. The complexity of group differences within an organization is explored, including the sources of conflict that cause divisions and the synergy that can lead to positive change.

PSY 582 Personality Theory and Research (4-0-4). Examination of current personality research and assessment in the context of personality theory.

PSY 586 Conceptual Issues in Psychology (4-0-4). Conceptual problems and issues in contemporary psychology are explored analytically and historically; writings that expose or exemplify such problems are examined.

PSY 587 Personality Testing and Laboratory (4-0-4). A wide range of tests of motivation, ability, interests, personality traits, and psychopathology are considered. Psychometric characteristics are examined. Concepts underlying test construction and interpretation are presented. Analysis of case studies is an integral part of the course.

PSY 588 History of Psychology (4-0-4). Historical overview of psychological ideas, movements, and institutions—in their cultural settings—from Greek and Roman schools of thought to the present, with emphasis on the most recent four centuries.

PSY 589 Physiological Psychology (4-0-4). Examination of the physiological processes that underlie perception and behavior of the organism, including major findings and theoretical issues that have resulted from research in this area.

PSY 590 Consumer Psychology Internship (4-0-4). Designed for graduate students with a previously arranged internship. Provides supervisory experience and culminates in an interpretive paper on the internship experience.

PSY 593 Special Topics in Psychology (two to four credits). Prerequisite: Permission of instructor. Course content announced in the [Course Schedule](#). May be repeated with a change of topic.

PSY 595 Professional Seminar (4-0-4) (See Addenda - January 01, 2005)

PSY 596 Special Problems in Psychology (credit as arranged). Prerequisites: Graduate status, permission of instructor, and departmental approval. Individualized study in psychology designed to supplement individual program needs. The student must arrange program and credit with a faculty member and obtain written permission before enrolling. May be repeated for up to 12 credit hours.

PSY 604 Concepts and Methods of Individual Psychotherapy (4-0-4). An introduction to the concepts and methods underlying a wide range of individual psychotherapeutic interventions, as well as an exploration of the assumptions and socio-historical foundations of the psychotherapies. Examines and explores concepts underlying a number of specific therapeutic approaches as well as problems and solutions regarding eclecticism and therapeutic integration.

PSY 605 Human Services Consultation and Intervention (4-0-4). The relationship of psychology to social, community, and organizational change is examined. Consulting as a mental health professional is emphasized.

PSY 611 Advanced Data Analysis with Computer Applications (4-0-4). Simultaneous, sequential, and hierarchical multiple regression and other advanced statistical topics are considered. Transforming non-linear data and detecting multicollinearity are discussed. Students analyze data using statistical software and interpret results.

PSY 620 Advanced Consumer Research (4-0-4). Prerequisites: PSY 511, PSY 519, and/or permission of instructor. Combines analysis of psychological processes with advanced statistical techniques and applies them to investigations of consumer behavior.

PSY 645 Psychology of the Exceptional Child (4-0-4). The term “exceptional,” along with closely associated constructs and issues (e.g., deviance, pathology, categorical/non-categorical, objective/subjective identification) is examined throughout the course. “Historical” information demonstrating past limitations in labeling procedures is shared so as to challenge student thinking regarding current best practice. A “label,” a diagnosis (e.g., by a pediatrician, school psychologist, etc.) impacts the child and his or her primary stakeholders, an impact that is explored. The course examines primary exceptionalities to model for students a critical-thinking approach to specific exceptionalities while also allowing students to identify, explore, and learn of exceptionalities of particular personal interest. In examining each exceptionality, a common template is followed.

PSY 650 Family and Systems Intervention (2-0-2). Couple, family, and group interventions used in clinical practice are explored from a systems perspective. Concepts and methods of couple, family, and group therapy are examined.

PSY 651 Clinical Psychopharmacology (4-0-4). Survey of the principles of drug action on the nervous system and behavior, with particular regard to drugs used in social, medical, and psychotherapeutic settings.

PSY 660 Ethical, Legal, and Professional Issues (2-0-2). Detailed examination of the ethical, legal, and professional issues that govern the practice of psychology. Topics include the APA code of ethics, Ohio Psychology Law, the role of values, diversity issues, therapist and consultant responsibilities, client rights, the judicial system, risk management, and work with children, schools, couples, families, and groups.

PSY 663 Neuropsychological Assessment (4-0-4). Examines the use of testing devices that measure an individual’s cognitive, perceptual, and motor performances as indicants of the extent and location of brain damage.

PSY 667 Special Topics in Psychology (two to four credits). Prerequisite: Permission of instructor. Course content is described in the [Course Schedule](#). May be repeated with a change of topic

PSY 670 Crisis Management (2-0-2). Covers a broad range of approaches to crisis intervention in different settings, including acute psychological debriefings, critical incident stress management, military debriefings, defusings, and acute therapeutic intervention strategies, with attention to post-traumatic stress disorder, and acute and prolonged stress reactions to life crises.

PSY 671 Stress, Abuse, and Trauma (4-0-4). Practicum with emphasis on understanding the psychological consequences of unusually stressful life experiences which include such events as childhood abuse, national disaster, war trauma, and other traumatic events. Special emphasis on the diagnosis, assessment, and treatment of post-traumatic stress disorder.

PSY 672 Multicultural Psychology and Diversity Practicum (4-0-4). Examination of theories of differences and their application to behavioral and organizational change. Through didactic and experimental exercises, the course focuses on the sensitivities and information needed to work effectively with multicultural populations.

PSY 685 Directed Readings for Comprehensive Exam and Thesis (4-0-4). A series of directed readings in the areas covered by the comprehensive exam as well as required procedures for thesis research. Open to students who have completed Group A and Group B course requirements.

PSY 690 and PSY 691 Fieldwork Placement (four credits each). Placements in clinical, community, hospital, and educational settings for supervised experience in psychological assessment and intervention. In addition to placement experience, students are supervised in small groups by faculty members who are licensed psychologists. Taken in sequence during Fall and Spring for a total of eight credit hours.

PSY 694 Directed Observation in the Schools (0-2-2). Prerequisite: Permission of instructor. Directed observation and participation in a school setting for students in the Specialist in Psychology program to meet state certification requirements. Applies only to those not holding an Ohio Teaching Certificate or license.

PSY 696 Special Problems in Psychology (credit as arranged). Prerequisites: Advanced graduate status, permission of instructor, and departmental approval. Individualized study in psychology designed to supplement individual program needs. The student must arrange the program and credit with a faculty member and obtain written permission before enrolling. May be repeated for up to 12 credit hours.

PSY 698 Applied Research Project (4-0-4). Prerequisite: Permission of instructor. Supervised research in consumer psychology, industrial psychology, and related topics.

PSY 699 Research and Thesis (variable credit).

PSY 725 Role and Function of the School Psychologist I (2-0-2). Prerequisite: Permission of instructor. Examination of the profession of school psychology, including history, legal and ethical issues, service delivery models, employment trends, credentialing standards, and contemporary issues.

PSY 726 Role and Function of the School Psychologist II (2-0-2). Prerequisite: Permission of instructor. Continued examination of issues addressed in **PSY 725**.

PSY 767 Special Topics in School Psychology (one to four credits). Prerequisite: Enrollment in the Specialist in Psychology program, or permission of instructor. Course content announced in the **Course Schedule**. May be repeated with a change of topic.

PSY 790 and PSY 791 Supervised Experience in School Psychology (six credits each). Prerequisite: Permission of instructor. Full-time school psychology internship experience for students enrolled in the School Psychology program.

PSY 795 and PSY 796 Seminar in School Psychology (2-0-2). Prerequisite: Permission of instructor. Offered in conjunction with **PSY 790** and **PSY 791** Supervised Experience in School Psychology. Focuses on advanced issues in the practice of school psychology through

the use of discussion, case presentations, and resource sharing. Topics include behavioral consultation, legal and ethical issues, service delivery models, special populations, and assessment technology.

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Cleveland State University

2121 Euclid Avenue, Cleveland, Ohio 44115

www.csuohio.edu 216.687.2000

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2121 Euclid Avenue, Cleveland, Ohio
44115 • 216.687.2000

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College of Graduate Studies

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Graduate Catalog 2004-2006

Master of Science in Health Sciences

Department of Health Sciences

Health Sciences 101

(216) 687-3567

www.csuohio.edu/healthsci/ms.html

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The Faculty

Professors:

Bette R. Bonder
 Laura E. Martin
 Richard F. Rakos
 Steve Slane, Interim Chair

Associate Professors:

John J. Bazyk
 Susan Bazyk
 Beth E. Ekelman
 Glenn D. Goodman
 John J. Jeziorowski
 Mary K. Milidonis
 Ann K. Reinthal

Assistant Professors:

James A. Landis
 Paul Sung

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Introduction

The Master of Science in Health Sciences is a post-baccalaureate professional degree designed to prepare health care professionals for emerging leadership roles in the rapidly changing health care environment and to expand opportunities for professional advancement. The goal is to enhance the clinical, educational, and administrative knowledge of individuals wishing to become more effective in their current practice, or to fill new roles in their own discipline or related arenas. Emphasis is on independent, self-directed learning and the development of diverse roles. This program is intended for practicing health care professionals.

Courses are offered evenings and online for the convenience of part-time students. The program has a core of five courses. In addition, it requires three courses in an area of emphasis, three electives, and a capstone research project or thesis.

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Faculty Research

Cleveland State faculty have research specializations in biomechanics, culture and health,

meaning of occupation, epidemiology, exercise physiology, feeding interventions, gerontology, mental health, motor control, neuromuscular disorders, orthopaedics, pediatrics, the psychology of trauma, outcomes measurement, and therapy-related legal issues. The Motion Analysis lab is a significant resource for a variety of research endeavors including gait analysis, vestibular concerns, and sports medicine.

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Financial Assistance

A limited number of [graduate assistantships](#) are available to full-time students (minimum of nine credit hours per semester). [Assistantships](#) cover tuition. Assistants may be involved in departmental projects, or work with individual faculty on specific research or work-related assignments. For more details, contact the Graduate Coordinator at (216) 687-3567 or e-mail the department at healthsci@csuohio.edu.

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Career Information

Graduates of the M.S. program in Health Sciences are well prepared for careers in professional practice, education, applied research, or management in the health care field. Career opportunities are available in a variety of health care settings, including hospitals, clinics, eldercare facilities, and others.

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Admission Information

An applicant must hold a baccalaureate or advanced degree from an accredited institution and be a health care professional. Those interested in the M.S.H.S. degree who are not health care professionals may request permission to apply.

Applicants must submit official transcripts for all colleges and universities attended, official test scores for the Graduate Record Examination (waived if [GPA](#) is above 3.00), and two letters of reference. All scores on the [GRE](#) must be at the 50th percentile or above for admission to the M.S.H.S. program. Transcripts must be sent directly from colleges and universities previously attended. Test scores must be sent directly from the testing service. Application materials are to be sent to the Office of [Graduate Admissions](#).

To facilitate the admission process, it is strongly recommended that applicants use the online application system at www.csuohio.edu/admissions/gradForm.html. The processing time for paper application forms is longer.

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Program of Study

Students are encouraged to contact the Graduate Coordinator periodically for advising. The Coordinator will review the student's progress and plans.

A minimum of 36 credit hours of study is required, including specified core courses, a concentration, electives, and a completed capstone project.

[Core Courses](#) (15 credits) Required of all students:

HSC 501 Issues in Health Sciences

HSC 502 Leadership Roles in Health Sciences

HSC 503 Research and Analysis in Health Sciences

HSC 504 Seminar in Health Sciences Professions

HSC 505 Culture and Health Care

Area of Emphasis (nine credits) Select one course from the following list:

HSC 510 Principles of Evidence-Based Practice

HSC 513 Outcomes Assessment

HSC 523 Educational Evaluation in Health Sciences

HSC 533 Program Development and Assessment

Select two additional HSC courses to meet professional interests:

HSC 512 Evolving Technologies in Health Sciences

HSC 521 Current Issues in Clinical Education

HSC 522 Fundamentals of Curriculum in Health Sciences

HSC 524 Functional Anatomy

HSC 525 Clinical Application of Current Theories of Motor Development

HSC 526 Functional Performance of Older Adults

HSC 531 Principles of Management for Health Sciences

HSC 532 Advocacy and Environmental Change

HSC 541 Environmental Health

HSC 543 Legal and Policy Issues in Health Sciences

HSC 544 Social Issues and Health Sciences

HSC 545 Work Physiology

HSC 546 Occupational Biomechanics

HSC 547 Assistive Technology for Computer Access

HSC 548 Human Sexuality and Health Care

HSC 570 Special Topics in Health Sciences

HSC 690 Independent Study

Electives (nine credits)

Students select three additional courses from HSC and/or from other departments. Graduate courses from an accredited institution may be transferred as electives, with approval from the Graduate Program Coordinator.

The following is a partial list of courses that may be taken as electives from other departments:

EDB 628 Psychology of Learning and Instruction (three credits)

ESE 503 Introduction to Individuals with Moderate and Severe Disabilities (four credits)

ESE 519 Life Skills Assessment, Curriculum, and Instruction (four credits)

HED 550 Theories in Health Education and Health Behavior (four credits)

HED 551 Organization and Administration of Community Health Education Programs (four credits)

HED 561 Methods and Materials for Health Education (three credits)

HED 565 Analyzing Health Data for Grant Writing (three credits)

HED 570 Pathophysiology of Disease (four credits)

HCA 510 Administrative Uses of Epidemiology (3-0-3)

HCA 515 Medical Care Organization (3-0-3)

HCA 615 Quality of Care (3-0-3)

IME 505 Human Factors Engineering (3-0-3)

PED 677 Prevention and Rehabilitation of Cardiovascular Disease (three credits)

PHL 540 Moral Reasoning and Bioethics (4-0-4)

PHL 541 Clinical Issues in Bioethics (4-0-4)

PSY 593 Special Topics in Psychology: The Psychology of Performance (two to four credits)

PSY 651 Clinical Psychopharmacology (4-0-4)

SWK 695 Health Care: Planning and Policy Issues (3-0-3)

SOC 543 Medical Sociology (4-0-4)

Students also may complete a related graduate certificate (Advanced Study in Culture, Communication, and Health Care; Bioethics; Ergonomics/Human Factors; Gerontological Studies; or Occupational and Physical Therapy in the Schools) to satisfy the elective requirement.

[Capstone Experience](#) (three to six credits)

Either a thesis or non-thesis option.

Every student must complete a significant, original research project.

HSC 691 Thesis

or

HSC 692 Master's Project

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Online Graduate Program

For practicing health care professionals, an online version of the Master of Science in Health Sciences is available.

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The Program of Study

The curriculum consists of five core courses, three courses in the area of emphasis, three elective courses, and an individual research project. Thirty-six semester hours are required.

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Core Courses

HSC 501 Issues in Health Sciences

HSC 502 Leadership Roles in Health Sciences

HSC 503 Research and Analysis in Health Sciences

HSC 504 Seminar in Health Sciences Professions (must be taken on-campus as a 10-day intensive experience)

HSC 505 Culture and Health Care Area of Emphasis (Health Sciences Professional Practice)

HSC 510 Principles of Evidence-Based Practice

HSC 512 Evolving Technologies in Health Sciences

HSC 513 Outcomes Assessment

Any other courses listed above in Area of Emphasis under Program of Study.

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Electives

Students select three courses from additional offerings to meet individual professional needs. Courses may be from the Health Sciences curriculum or approved courses from other disciplines, and/or from other accredited institutions.

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Capstone Experience

An individual research project (three credit hours) completed under the supervision of a faculty advisor is required.

Students may transfer up to nine hours of appropriate graduate course work taken at another institution toward fulfillment of degree requirements.

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Graduate Certificate Programs

Three interdisciplinary graduate certificate programs are administered through the Department of Health Sciences: Advanced Study in Culture, Communication, and Health Care, Ergonomics/Human Factors; Occupational and Physical Therapy in the Schools. Detailed information about these programs can be found elsewhere in this Catalog; please refer to the index.

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Courses (See Addenda - March 15, 2005)

Enrollment in M.S.H.S. program or permission of instructor required for all M.S.H.S. courses.

HSC 501 Issues in Health Sciences (3-0-3). Explores trends in health care delivery, related public policy, and funding issues, as well as theoretical and ethical considerations in delivering care.

HSC 502 Leadership Roles in Health Sciences (3-0-3). Examines the roles of the advanced practitioner in direct service delivery, management, consultation, education, and research.

HSC 503 Research and Analysis in Health Sciences (3-0-3). Provides an overview of qualitative and quantitative research methods, with an emphasis on program evaluation, quality assurance, and outcomes research. Also examines statistical and other methods for analyzing research and evaluating data.

HSC 504 Seminar in Health Sciences Professions (3-0-3). Integrates previous course work and explores mechanisms for pursuing independent research. Taken later in the course of study, prepares students for the capstone project or thesis.

HSC 505 Culture and Health Care (3-0-3). Examines the ways in which culture affects health and health care, including perceptions of health, disease, treatments, and the values associated with these factors. The need for cultural sensitivity in health care is stressed.

HSC 510 Principles of Evidence-Based Practice (3-0-3). Examines the emergence of evidence-based practice (EBP) as a trend in health sciences, and the advantages and disadvantages of this approach to intervention. Explores the process of implementing EBP in clinical settings.

HSC 512 Evolving Technologies in Health Sciences (3-0-3). Reviews assistive technologies used in rehabilitation. Research evaluating program and equipment effectiveness, evolving technologies, program development, theoretical models, and reimbursement issues are addressed for various categories of assistive technology.

HSC 513 Outcomes Assessment (3-0-3). Emphasizes integration of qualitative and quantitative research, along with discussion of research results, and their relationship to hypothesis testing and methodology. Application of findings to contemporary problems encountered in health sciences and guidelines for subsequent research is explored in detail.

HSC 514 Occupational and Physical Therapy in the Schools (3-0-3). Examines factors influencing the efficacy of school-based occupational and physical therapy. Current literature is used to analyze issues related to evaluation and intervention within an educational context.

HSC 521 Current Issues in Clinical Education (3-0-3). The role of the clinical educator, including the design of educational experiences, supervision of students, and performance evaluation.

HSC 522 Fundamentals of Curriculum in Health Sciences (3-0-3). Academic education of health sciences practitioners, with emphasis on curriculum design consistent with accreditation standards, designing and implementing courses, and incorporation of clinical education and new technologies.

HSC 523 Educational Evaluation in Health Sciences (3-0-3). Evaluation of course and curriculum using a variety of outcome measures.

HSC 524 Functional Anatomy (3-0-3). Integrates anatomical structure and function in relation to movement. Relationships among cellular, tissue, organ, and systemic function are utilized to explore the body's normal activities, response to injurious stimuli, and capacity for healing. Analysis of adaptive strategies.

HSC 525 Clinical Application of Current Theories of Motor Development (3-0-3).

Historical and contemporary theories of motor development are explored, including a critical analysis and application of contemporary theories of motor development to evaluation and treatment in pediatric practice.

HSC 526 Functional Performance of Older Adults (3-0-3). Assessment and intervention designed to assist older adults in accomplishing daily activities, including individual, social, and environmental factors.

HSC 531 Principles of Management for Health Sciences (3-0-3). Funding of health sciences, and implications for service delivery, supervision of personnel, and the design and implementation of programs; fundamentals of organizational behavior and development.

HSC 532 Advocacy and Environmental Change (3-0-3). Determination of factors in the social and physical environment that support or inhibit mobility and function; methods to change environments and policies that limit ability.

HSC 533 Program Development and Assessment (3-0-3). Evaluation of needs, design and implementation of health sciences programs, and assessment of outcomes.

HSC 541 Environmental Health (3-0-3). An introduction to environmental health, with emphasis on toxic exposures, and hazard identification and management.

HSC 543 Legal and Policy Issues in Health Sciences (3-0-3). Explores legal and policy issues in health care delivery, related state and federal laws, governmental and legislative trends, public policy, and ethical considerations in patient care.

HSC 544 Social Issues and Health Sciences (3-0-3). Examines social issues that influence health and illness through the study of disability and medical rehabilitation. Perspectives of health care practitioner, consumer, regulator, and investor are used to investigate control issues, mutual decision making, and socioeconomic inequalities.

HSC 545 Work Physiology (3-0-3). Provides a comprehensive examination of various factors affecting human physical performance in the workplace. Emphasis is on neural controls, cardiorespiratory capacity, and resultant musculoskeletal capabilities. Simple and sophisticated methods to assess work capacity are examined.

HSC 546 Occupational Biomechanics (3-0-3). Integrates functional anatomy, biomechanics, and workplace tasks in providing a comprehensive understanding of factors that influence human occupational performance. Detailed analysis of instrumentation used to measure human mechanical capacity is provided.

HSC 547 Assistive Technology for Computer Access (3-0-3). Reviews assistive technology that enhances accessibility to the computer for individuals with visual, auditory, motor, or learning disabilities.

HSC 548 Human Sexuality and Health Care (3-0-3). Provides an overview of sexual biology and sexuality in culture and society before focusing on public health issues and specific professional concerns. Among the topics covered are sexuality education, STDs, HIV/AIDS, and sexuality and professional/patient relationships.

HSC 567 Practicum in Gerontology (1-0-1) (See Addenda - March 01, 2005)

HSC 570 Special Topics in Health Sciences (one to four credits). May be repeated for credit with change of topic.

HSC 690 Independent Study (one to four credits). Prerequisite: Approval of advisor. Individual exploration in the student's area of interest under the direction of the faculty advisor.

[HSC 691 Thesis \(three to six credits\)](#). Capstone option resulting in a significant, original research project.

[HSC 692 Master's Project \(three to six credits\)](#). Capstone option resulting in a significant, original research project.

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Cleveland State University

2121 Euclid Avenue, Cleveland, Ohio 44115

www.csuohio.edu 216.687.2000

Contact Webmanager

Cleveland State University

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2121 Euclid Avenue, Cleveland, Ohio

44115 • 216.687.2000

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College of Graduate Studies

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Graduate Catalog 2004-2006

Doctor of Philosophy in

Clinical-Bioanalytical Chemistry

A joint program with the Cleveland Clinic Foundation

Master of Science in

Chemistry

Department of Chemistry

Science and Research 397 (216) 687-2451

www.csuohio.edu/chemistry

Professors:

David J. Anderson
 A. Harry Andrist, Emeritus
 David W. Ball
 Roger W. Binkley, Emeritus
 Frank J. Bockhoff, Emeritus
 Stan A. Duraj, Chair
 Baochuan Guo
 Julius Kerkay, Emeritus
 Kerro Knox, Emeritus
 John Masnovi
 Lily M. Ng
 Michael J. Tevesz
 Robert L.R. Towns, Emeritus

Bruce F. Turnbull, Emeritus

Associate Professors:

Thomas W. Flechtner, Emeritus
 Ralph A. Gardner, Emeritus
 Michael Kalafatis
 Robert Megargle, Emeritus
 Earl M. Mortensen, Emeritus
 Paul Olynyk, Emeritus
 Robert Wei

Yan Xu

Assistant Professors:

Mekki Bayachou
 Valentin Gogonea
 John F. Turner II

Aimin Zhou

The Cleveland Clinic Foundation Faculty:

Alexandru Almasan
 Sipra Banerjee
 Charles Bevins
 Graham Casey
 Martha K. Cathcart
 Guy Chisolm
 John Crabb
 Paul DiCorleto
 Joseph DiDonato

Donna Driscoll
 Serpil Erzurum
 Paul L. Fox
 Ram Ganapathi
 S. Jaharul Haque
 Stanley Hazen
 Mie-Jae Im
 Donald W. Jacobsen
 Sadashiva Karnik
 Michael Kinter
 Andrew Lerner
 Xiaoxia Li
 Alan Marmorstein
 Kunio Misono
 Richard Morton
 Richard Padgett
 Edward Plow
 Jun Qin
 Robert Silverman
 Jonathan Smith
 George R. Stark
 Dennis J. Stuehr
 Bruce Trapp
 Qing Wang
 Bryan Williams
 Yan Xu
 Vivien Yee

Clinical Professors:

Manjula S. Gupta
 Michael Ip
 Frederick Van Lente

Adjunct Faculty:

Kulbinder Banger
 Mary Borovicka
 Aloysius Hepp
 Nicholas Leventis
 Soraya Naghshineh
 John Peyser
 James Phillips
 Joseph Reed-Mundell
 Alan Riga
 John Schupp
 James Smialek
 Carol Stepien
 Satya Yadav

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Introduction

The Ph.D. program in Clinical/Bio-analytical Chemistry is offered jointly by Cleveland State University and the Lerner Research Institute of The Cleveland Clinic Foundation (CCF). The program is also affiliated with the Rammelkamp Center for Education and Research of the MetroHealth Medical Center of Cleveland. This unique program attracts students from all over the world. Clinical/ Bioanalytical Chemistry applies the knowledge of chemistry and, in particular, chemical analysis to the study of the origins and diagnoses of diseases. Graduates of this Ph.D. program are employed in many clinical-bioanalytical settings. They become directors of clinical laboratories and research scientists in biomedical and biotechnology fields, in in vitro diagnostics, in reference and analytical laboratories, in academic institutions, and in many other settings. Because of the concentration of chemical, medical, and related industries and institutions in the Cleveland area, many graduates of this program have found fulfilling positions locally. Others have selected employment outside of the Cleveland area, including employment outside of the United States. Chemists with advanced degrees generally have a variety of career opportunities and Cleveland State graduates are no exception.

The program has outstanding faculty with whom students conduct their dissertation research. Students have the opportunity to do research with faculty and research scientists at Cleveland State, The Cleveland Clinic Foundation, and other medical centers. The program has more than

50 faculty members who have a broad range of research interests in disease mechanism and diagnosis, bioanalytical chemistry, biomedicine, and molecular biology. State-of-the-art facilities and advanced bioanalytical technologies are available to the program, including (but not limited to) mass spectrometry (including MALDI-TOF and LC-ESI-triple quadrupole MS, LC-ESI-ion-trap MS), HPLC, conventional and capillary electrophoresis, immunoassays, ultracentrifugation, NMR, EPR, FTIR, absorption spectroscopy, spectrofluorometry, X-ray crystallography, molecular biology techniques, and computational chemistry and chemical imaging techniques.

Clinical Chemistry Ph.D. Program: The Clinical Chemistry Ph.D. program is an internationally recognized program that examines the origins, mechanisms, and diagnosis of disease. Students who complete the program may obtain certification from the American Board of Clinical Chemistry after appropriate work experience and upon successful completion of the certification examination. This program is one of two doctoral programs in the United States accredited by the Commission of Accreditation in Clinical Chemistry. The Clinical Chemistry Ph.D. also is an option within the Molecular Medicine Ph.D. Program (see below) for students in both programs.

Molecular Medicine Ph.D. Program: The Molecular Medicine Program (MMP) is a specialization within the three Cleveland State – Cleveland Clinic doctoral programs in Regulatory Biology, Clinical/Bioanalytical Chemistry, and Applied Biomedical Engineering, and is administratively outside of the Chemistry Department. Depending on their research interests, applicants to the Clinical/Bioanalytical Ph.D. program can participate in the Molecular Medicine Program through the completion of the required core curriculum and participation in research in molecular medicine. For additional information, visit the MMP web site at www.csuohio.edu/mms/.

M.S. Program in Chemistry: The Master of Science program in chemistry is designed for both full-time and part-time students. It provides advanced training for those who wish to further their careers in industry, laboratory medicine, or teaching, as well as students who feel the need for more study before pursuing a Ph.D. or M.D. degree. Graduate course offerings are scheduled in the *evening* so employed students can earn the degree on a part-time basis, taking one or two courses per semester. Graduate training at the M.S. level is offered in analytical, clinical, inorganic, organic, physical, and environmental chemistry. The clinical chemistry M.S. program includes practical training in the dynamics of operating modern, well-equipped medical laboratories. The M.S. program in chemistry offers both thesis and non-thesis options, except in clinical chemistry, which is a course-work-only program

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Student and Faculty Research Examples

Ph.D. dissertation title examples:

- High-Performance Ion-Exchange Chromatography of Fibrinogen and Fibrinogen Degradation Products: Domain Binding Model; Development of Ionic Focusing HPLC: Improved Gradient Techniques
- Synthetic and Structural Studies of Selected Gallium, Indium, Vanadium, and Hafnium Coordination Compounds
- Analysis of DNA Using MALDI-TOF Mass Spectrometry
- Fluorometric Detection of Biological S-Nitrosothiols
- Molecular Modeling Studies of Peptide and Protein Systems
- Development of Capillary Electrophoretic Enzyme Immunoassay and Enzyme Microassay

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Financial Assistance

Graduate [assistantships](#) are available on a competitive basis. They include tuition support and a stipend during the academic year.

Students who are awarded teaching [assistantships](#) are required to teach classes; after two consecutive semesters of teaching, students holding teaching [assistantships](#) may be eligible for a summer term of financial support. International students who are awarded teaching [assistantships](#) must pass a University-administered test of spoken English before teaching duties may be assigned. International teaching assistants who do not pass this test may continue to hold their [assistantships](#) for a limited time while they continue to study the English language.

Research [assistantships](#) also are available depending on external funding.

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Career Information

Graduates of the Ph.D. program go on to a variety of professional positions in the clinical-bioanalytical field, some pursuing postdoctoral studies before obtaining their first professional position. Examples of positions held by Ph.D. graduates include:

- Director, SmithKline Beecham Reference Laboratory
- Vice President, Operations/Quality Assurance, Laboratory Corporation of America
- Research Scientist, Boehringer Mannheim
- Director, St. Thomas Hospital Laboratory
- Postdoctoral Fellow, The Lerner Research Institute, The Cleveland Clinic Foundation
- Postdoctoral Fellow in Clinical Chemistry, Mayo Clinic Foundation
- Director, Lipid/Lipoprotein Laboratory, Mayo Clinic Foundation
- Group Leader, Lederle Pharmaceutical
- Associate Professor, Old Dominion University
- Associate Professor, Harvard Medical School
- Research Scientist, Amgen
- Associate Professor, Medical Technology, University of Wisconsin
- President, Medical Specialties, Inc.
- Associate Professor, Center for Macromolecular Crystallography, University of Alabama
- Postdoctoral Fellow, Genentech, Inc.
- President, Alpha Omega Chemical Co.
- Associate Director, Bioanalytical HPLC Department, Kansas City Analytical Services
- Vice President, Quality and Business Effectiveness, Quest Diagnostics

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Admission Information

Students who wish to enter the Clinical/ Bioanalytical Ph.D. program must first meet College of Graduate Studies and departmental requirements for admission to the general chemistry graduate program as detailed below. In addition, admission to the Clinical/Bioanalytical Ph.D. program requires successful performance on the Ph.D. candidacy examination.

In addition to meeting the College of Graduate Studies requirements for admission, applicants for graduate study (master's and Ph.D.) in chemistry must have had one year of general, organic, analytical, and physical chemistry; a year of physics; and mathematics through partial derivatives and multiple integrals. Applicants lacking any of these requirements may be admitted, but any deficiency must be made up as soon as possible. Credits earned in remedial courses do not count toward degree requirements.

Normally chemistry applicants are required to submit an official report of their performance on both the aptitude and chemistry subject area tests of the Graduate Record Examination (GRE) sent to the University by the Educational Testing Service (ETS). Applicants with outstanding records (grade-point average above 3.00 in addition to other evidence of solid preparation) may request that this requirement be waived by the Graduate Committee of the Chemistry Department. However, the GRE requirement can not be waived for international students. International students who do not have a degree from an institution in the United States must also arrange to have the results of their performance on the TOEFL sent to the University by ETS.

The application deadline is January 15. Submit all materials to the Graduate Admissions Office, Rhodes Tower West, Room 204. (International applicants submit materials to the Center for International Services and Programs, University Center, Room 302.)

To facilitate the admission process, it is strongly recommended that applicants use the online application system at www.csuohio.edu/admissions/gradForm.html. The processing time for paper application forms is longer.

Placement Examinations

All full-time students admitted into the chemistry graduate program are required to take four placement examinations: Physical Chemistry, Organic Chemistry, Analytical Chemistry, and Inorganic or Biochemistry. The purpose of these examinations is to evaluate a student's undergraduate preparation. If the results of these examinations indicate that a student has a deficiency in his or her undergraduate background, the student may be required to take appropriate course work to remedy that deficiency. This remedial course work is determined in a joint decision by the chair of the Chemistry Graduate Committee and the coordinator of the area of chemistry in which the student is deficient.

Part-time students admitted into the program are required to take the appropriate placement examination before registering for a graduate course. For non-degree students, the instructor of the graduate course decides whether the student needs to take the appropriate placement examination before being admitted into the course.

Students who do not have the required undergraduate background may be admitted provisionally and are required to follow the above guidelines for placement examinations.

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Ph.D. Candidacy

Chemistry graduate students who have completed at least 20 credit hours of graduate study with a cumulative grade-point average of at least 3.00 may take the examination for Ph.D. candidacy. The examination consists of the preparation of an acceptable, written, fully referenced proposal describing the student's research plans and then an oral defense and examination. With successful performance in the candidacy examination, the student is qualified as a Ph.D. candidate in Clinical/Bioanalytical Chemistry.

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Ph.D. Degree Completion Requirements

Clinical/Bioanalytical Chemistry Ph.D. students are required to complete at least 22 credit hours of graduate courses (separate from Ph.D. Dissertation credits) with at least one course from each of three broadly defined areas of chemistry and at least two credit hours in Chemistry Seminar. Other courses and/or more than 22 credit hours of course work may be required by the student's adviser.

Graduate students also are required to register for the Ph.D. Candidacy Examination during the appropriate semester(s), for Ph.D. Dissertation when conducting research and to successfully write and defend their dissertations. The primary objective of Ph.D. candidacy is the completion of a major research project under the direction of the student's doctoral advisor(s). Once the project is completed, the student must write a dissertation describing the project (prepared in the format prescribed by the [College of Graduate Studies](#) and acceptable to the student's dissertation committee) and publicly defend the research and the written dissertation. The time required for the completion of the research and the defense of the resulting dissertation cannot be predicted in any individual case. Ph.D. students must complete at least 90 credit hours of graduate study before becoming eligible for graduation.

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Clinical Chemistry Program

It is the responsibility of the Director of the Clinical Chemistry Program to certify that clinical chemistry doctoral students have completed the necessary course and research requirements for professional certification. M.S. and Ph.D. Clinical Chemistry students take:

1. One year of clinical chemistry (two, four-credit courses),
2. One year of advanced biochemistry (two, four-credit courses),
3. One course in biotechnology techniques (four credits),
4. One chemistry elective course (three credits),
5. Two seminar courses (one credit each), and
6. A summer internship course in the clinical laboratory (11 credits).

In addition, Ph.D. students take:

1. Four courses of special topics in clinical chemistry (one credit each), and
2. Four courses of clinical chemistry seminar (one credit each; includes case histories, clinical pathology conferences, and student presentations).

A second summer internship in the clinical laboratory (11 credits) is optional. Each internship course encompasses a 10-week rotation in a medical center clinical laboratory, where the student learns the principles and practice of clinical laboratory testing. The student also may work on developmental projects in the internship courses. The second summer internship course gives experience in specialized clinical laboratory techniques. Dissertation research also is required for the doctoral degree. All recipients of the Ph.D. degree in clinical chemistry are strongly urged to take, following graduation, the examination offered for certification by the American Board of Clinical Chemistry.

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M.S. Degree Completion Requirements

The formal course work for the M.S. degree is structured around a core of courses that includes

16 credit hours of advanced chemistry courses. The remaining credit requirements may be fulfilled with any combination of elective courses suitable to a desired concentration and approved by the student's advisor. The combination of core and elective courses must total at least 32 credit hours.

M.S. students in the clinical chemistry program fulfill the departmental 32-credit-hour requirement by completing the sequence of courses specified by the program.

Part-time students employed as professional chemists usually complete the credit requirement by taking appropriate courses as arranged by their advisor.

Full-time students in all areas (except clinical chemistry) ordinarily complete their program by taking appropriate courses for a total of at least 16 credits (excluding credit for CHM 600 Chemistry Teaching) and then at least 16 credits in experimental research (CHM 699 M.S. Thesis) under the direction of a faculty advisor selected by the student. Upon completion of the research, each student is required to produce and defend a thesis accepted by a thesis committee. The committee consists of the student's advisor and at least two other graduate faculty members.

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Exit Requirements

M.S. students must either complete at least 32 credit hours of approved course work with a grade-point average of 3.00 or higher or complete at least 16 credit hours of approved course work with a GPA of 3.00 or higher, at least 16 credit hours of CHM 699 M.S. Thesis, and successfully defend a master's thesis. Ph.D. students must complete at least 90 credit hours of approved course work (including CHM 899 Ph.D. Dissertation) and successfully defend a doctoral dissertation.

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Research Facilities

The Chemistry Department is housed in the Basic Science Building and the Science and Research Center. In addition to well-equipped research laboratories, there are special function rooms, such as a cold room, glass and electronic shops, a computer room, and a darkroom. Generally, graduate students occupy research space near their research advisors, which leads to frequent interaction.

Major instrumentation available in the program includes superconducting multinuclear NMR, automated X-ray diffractometer, triple-quadruple GC/MS, MALDI-TOF and LC-ESI-triple quadruple and LC-ESI-ion-trap mass spectrometers, capillary electrophoresis, HPLC, Fourier transform infrared spectrometers, UV-visible spectrophotometers, liquid scintillation counter, immunoassay instrumentation, fluorescence spectrometer, atomic absorption spectrometers, EPR, and extensive computer capabilities. Students also have ready access to the facilities and the state-of-the-art instrumentation available at The Cleveland Clinic Foundation. The Cleveland State Mass Spectrometry Facility is located in the department. It serves the research and service needs of Cleveland State faculty and students. Opportunities for graduate training in mass spectrometry are afforded through the facility.

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Courses (See Addenda - March 31, 2005)

CHM 501 Chemical Information (2-0-2). Prerequisite: CHM 332 or equivalent. Use of the chemical literature, automated chemical filing systems, and computerized library searches.

CHM 502 Biochemistry (3-0-3). (See Addenda - March 31, 2005) Prerequisite: CHM 332. Protein chemistry and metabolism of carbohydrates, lipids, proteins, nucleic acids, vitamins, and hormones, with major emphasis on biochemical processes in human cells and organs, protein purification, enzyme kinetics, and energetics of metabolic reactions. Immunology and AIDS, cancer and oncogenesis, DNA replication, RNA synthesis, protein synthesis, and regulation of gene expression.

CHM 503 Environmental Toxicology (3-0-3). Prerequisite: One year of natural sciences or permission of instructor. Various topics on the impact of environmental pollutants on humans.

CHM 504 Environmental Chemistry (3-0-3). Prerequisite: CHM 331 or equivalent. Chemical aspects of environmental problems: energy, air, and water pollution; solid waste; toxic substances; and related topics.

CHM 506 Environmental Chemistry Laboratory (0-3-2). Prerequisite: CHM 316 or equivalent. Emphasis on standard methods of analysis of air and water samples.

CHM 510 Electronics for Chemical Instrumentation (2-2-4). Introductory modular approach to analog and digital electronics, processing of signals, display of results, and control of experimental parameters.

CHM 511 Advanced Instrumental Analysis (3-0-3). Prerequisite: CHM 311 or equivalent; co-requisite: CHM 516. Advanced theory and techniques of modern instrumental analysis with emphasis on optical spectroscopies, potentiometry, amperometry, and coulometry.

CHM 516 Advanced Instrumental Analysis Laboratory (0-6-4). Prerequisite: CHM 300 or equivalent; co-requisite: CHM 511. Laboratory course designed to accompany CHM 511. Offered day and evening.

CHM 521 Special Topics in Physical Chemistry (3-0-3). Prerequisite: Approval of advisor. Discussion of special topics in physical chemistry, reflecting student and faculty interests.

CHM 523 Statistical Thermodynamics (3-0-3). Prerequisite: CHM 322 or equivalent. Fundamentals of statistical mechanics and distribution laws; development and application of partition functions to the evaluation of thermodynamics properties of chemical substances.

CHM 524 Chemical Kinetics (3-0-3). Prerequisite: CHM 322 or equivalent. Principles of rate processes considered and applied to chemical kinetics; investigation of unimolecular and bimolecular reactions and effects of isotopic substitution.

CHM 531 Advanced Organic Chemistry (2-0-2). Prerequisite: CHM 332 or equivalent. Applications of spectroscopic techniques in the study of organic reactions and compounds.

CHM 561 Polymer Chemistry (3-0-3). Prerequisites: CHM 332 and CHM 322, or equivalents. Introduction to structure, properties, kinetics, and mechanisms of polymerization, copolymerization, and polycondensation.

CHM 580 Introductory Chemistry for Middle School Teachers (five credits). Introduction to basic chemistry principles and laboratory techniques.

CHM 597 Topics in Chemistry (one to eight credits). Prerequisite: Permission of instructor. Discussion of selected topics in chemistry as determined by faculty and student interest. Offered occasionally.

CHM 600/700 Chemistry Teaching (2-0-2). Prerequisite: Approval of advisor. Orientation to the philosophy and methods used in teaching chemistry; observation and directed practice teaching in the laboratory and classroom.

CHM 604/704 Special Topics in Environmental Chemistry (3-0-3). Prerequisites: CHM 504 and approval of advisor. Discussion of special topics in environmental chemistry,

reflecting student and faculty interests. May be repeated for credit with change of topic.

CHM 605/705 Analytical Toxicology I (1-3-3). Prerequisite: CHM 311 or equivalent. Introduction to medical toxicology and therapeutic drug monitoring. Lectures and laboratories on drug analysis by chromatographic techniques.

CHM 606/706 Analytical Toxicology II (1-3-3). Prerequisite: CHM 605. Lectures and laboratories on principles and practice of assessing the impact of exposure to environmental pollutants: levels of pollutants, metabolites, and adducts in human tissues, cells, and body fluids are examined by various methods of analyses.

CHM 611/711 Special Topics in Analytical Chemistry (3-0-3). Prerequisite: Approval of advisor. Discussion of special topics in analytical chemistry, reflecting student and faculty interests. May be repeated for credit with change of topic.

CHM 612/712 Advanced Analytical Chemistry (3-0-3). Prerequisite: CHM 511 or equivalent. Theoretical principles of analytical chemistry, including equilibrium, error analysis, and quantitative calculations.

CHM 613/713 Electroanalytical Chemistry (3-0-3). (See Addenda - March 31, 2005) Prerequisite: CHM 511 or equivalent. Properties and analytical applications of the electrochemical cell.

CHM 614/714 Chromatography and Separation (3-0-3). (See Addenda - March 31, 2005) Prerequisite: CHM 511 or equivalent. Comprehensive survey of separation techniques, including solvent extraction, gas chromatography, liquid chromatography, and capillary electrophoresis.

CHM 615/715 Advanced Mass Spectrometry (3-0-3). Prerequisite: Approval of advisor. This course covers electrospray, MALDI, CI, APCI, EI, and other novel ionization methods, as well as quadrupole, TOF, FTMS, and double sector mass spectrometry. GC/MS and LC/MC also are discussed.

CHM 616/717 Advanced Spectroscopic Methods (3-0-3). Prerequisite: CHM 511 or equivalent. Theory and techniques in modern optical spectroscopic analysis.

CHM 618/718 X-Ray Crystallography (3-0-3). Introduction to X-ray crystallographic theory and techniques for the determination of molecular structure, including heavy atom and direct methods of solving structure.

CHM 619/719 Theory of Analytical Chemistry (3-0-3). Prerequisite: CHM 612/712. Advanced theoretical treatment of analytical chemistry.

CHM 625/725 Quantum Chemistry (See Addenda - March 31, 2005) and Spectroscopy (3-0-3). Prerequisite: Approval of advisor or one year of undergraduate physical chemistry. Principles of quantum theory including aspects of structure and spectroscopy.

CHM 630/730 Special Topics in Organic Chemistry (4-0-4). Prerequisite: CHM 631/731 or approval of instructor. Discussion of special topics in organic chemistry reflecting student and faculty interests. May be repeated for credit with change of topic.

CHM 631/731 Organic Structure and Bonding (4-0-4). Prerequisite: CHM 332 or equivalent. Structure and properties of organic compounds, including stereochemistry, conformational analysis, aromaticity, reactions, and reaction intermediates.

CHM 633/733 Organic Reactions (4-0-4). Prerequisite: CHM 631/731. A study of the mechanisms of organic reactions and their implications in synthetic and structural organic chemistry.

CHM 640/740 Special Topics in Inorganic Chemistry (3-0-3). (See Addenda - March 31,

2005) Prerequisite: Approval of advisor. Discussion of special topics in inorganic chemistry, reflecting student and faculty interests. May be repeated for credit with change of topic.

CHM 641/741 Inorganic Mechanisms and Structures (3-0-3). (See Addenda - March 31, 2005) Prerequisite: CHM 441 or equivalent. Application of chemical kinetics, thermodynamics, and elementary quantum chemistry to the determination of mechanisms of inorganic reactions; structural aspects of inorganic reactivities.

CHM 642/742 Theoretical Inorganic Chemistry (3-0-3). (See Addenda - March 31, 2005) Prerequisite: CHM 625/725 or equivalent. Introduction to symmetry and group theory; irreducible representation and character tables; applications to valence-bond and molecular-orbital theories of chemical bonding, structure, and spectroscopy.

CHM 651/751 Clinical Chemistry I (3-3-4). Laboratory diagnosis of kidney, liver, and hemolytic diseases. Instruction includes physiology and pathophysiology in conjunction with laboratory testing for the above diseases. Laboratory statistics also are covered.

CHM 652/752 Clinical Chemistry II (3-3-4). Laboratory investigations of disorders in acid-base balance, lipid and carbohydrate metabolism, and endocrine functions. Biochemical markers of myocardial infarction. Case studies.

CHM 653/753 Advanced Biochemistry I (4-0-4). Prerequisite: CHM 332 or CHM 402. Chemistry of proteins, carbohydrates, and lipids; immunology and AIDS. Enzyme and energetics of metabolic reactions.

CHM 654/754 Advanced Biochemistry II (4-0-4). Prerequisite: CHM 653/753. Metabolism of nitrogen-containing compounds, vertebrate metabolism, neurotransmission, nucleotides, and nucleic acids, DNA processes, RNA synthesis and processing, protein synthesis, gene expression, and cancer.

CHM 655/755 Biotechnology Techniques (1-5-4). Techniques of immunoassays and techniques of isolation, manipulation, and analysis of proteins/nucleic acids are covered. Includes both lecture and laboratory.

CHM 656/756 Internship in Clinical Chemistry I (11 credits). Prerequisite: Approval of the Director of Clinical Chemistry. Students rotate through the clinical laboratory at Cleveland medical centers, being trained in instrumentation, quality control, and diagnostic uses of various testing methodologies. Students are assigned evaluations and/or development projects for a more in-depth experience. Management issues of the clinical laboratory also are addressed. Offered in the summer to clinical chemistry majors only.

CHM 661/761 Macromolecular Structure and Dynamics (3-0-3). (See Addenda - March 31, 2005) Prerequisites: Undergraduate organic chemistry and physical or analytical chemistry, or permission of instructor. Basics and application of analytical techniques to the study of macromolecular structure and dynamics, including protein and RNA folding, protein and nucleic acid structure and function. Spectroscopic examination of biomolecules including the use of optical techniques, NMR methods, FTIR, EPR, mass spectrometry, and X-ray methods. Separation techniques including electrophoresis, HPLC, and CE.

CHM 679/779 Advanced Chemistry Laboratory (one to 11 credits). Prerequisite: Approval of advisor. An advanced laboratory program in selected techniques to be determined by the needs and interests of the student. Offered every semester.

CHM 695/795 Chemistry Seminar (1-0-1). Introduction to effective collection, organization, and presentation of technical information. Students are required to present seminars, preferably dealing with some aspect of their proposed research program.

CHM 699 M.S. Thesis (credit as arranged). Prerequisite: Departmental approval. Methods and techniques of experimental research under the direction of a faculty advisor; includes submission of an acceptable thesis. Offered every semester.

[CHM 750 Special Topics in Clinical Chemistry \(1-0-1\)](#). Prerequisite: Approval of advisor. Discussion of special topics in clinical chemistry and related clinical disciplines. May be repeated for credit with change of topic.

[CHM 757 Internship in Clinical Chemistry II \(11 credits\)](#). Prerequisite: Approval of the Director of Clinical Chemistry. Students rotate through instrumentation stations not covered in the first internship course ([CHM 656/756](#)) in the clinical laboratory at The Cleveland Clinic Foundation or other medical facility. Topic areas are the same as described for [CHM 656/756](#). Offered in the summer to clinical chemistry majors only.

[CHM 759 Clinical Chemistry Seminar \(1-0-1\)](#). Tutorial and student-participation program emphasizing current developments in various facets of clinical chemistry. Open only to clinical chemistry majors.

[CHM 891 Candidacy Examination \(one credit\)](#). Prerequisite: Approval of advisor. Offered every semester.

[CHM 899 Ph.D. Dissertation \(credit as arranged\)](#). Prerequisite: Departmental approval. Doctoral research under the direction of a faculty advisor; includes submission of an acceptable dissertation. Offered every semester.

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Cleveland State University

2121 Euclid Avenue, Cleveland, Ohio 44115

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Graduate Catalog 2004-2006

Master of Science in Civil Engineering

Department of Civil and Environmental Engineering

Stilwell Hall 107

(216) 687-2400

www.csuohio.edu/civileng/ms_civil_engr_.htm

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The Faculty

Professors:

Paul X. Bellini
 Paul A. Bosela, Chair
 Stephen F. Duffy
 John H. Hemann, Emeritus
 Yung-Tse Hung
 Mark Tumeo

Associate Professors:

Philip H. DeGroot
 Norbert J. Delatte
 Nilufer Dural
 William G. Fleck, Emeritus
 Lutful I. Khan
 Walter M. Kocher
 John J. Tomko

Adjunct Faculty:

George Baaklini
 Sung Choi
 John P. Gyekenyesi

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Introduction

The graduate program in civil engineering is designed to provide the student with a knowledge of advanced methods for analysis and design or for research and development. The student must select one of the following graduate specializations: Structures/Foundations, Water Resources Engineering, or Transportation. Full-time or part-time study may be pursued.

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Each specialization requires the completion of a set of core courses shown below.

[Structures and Foundations](#)

[Core Courses](#)

CVE 511 Matrix Methods of Structural Analysis

CVE 512 Finite Element Analysis I [or](#) MCE 580 Finite Element Analysis I

CVE 517 Structural Vibrations [or](#) CVE 530 Advanced Soil Mechanics

CVE 531 Advanced Foundations

Any 500-level CVE Structural Design Course

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[Water Resources](#)

[Core Courses](#)

CVE 561 Hydrologic Analysis

CVE 562 Open Channel Hydraulics

CVE 563 Water Resources Engineering

CVE 564 Groundwater Hydrology

EVE 570 Environmental Chemistry [or](#) EVE 572 Biological Principles of Environmental Engineering

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[Transportation](#)

[Core Courses](#)

CVE 504 Civil Engineering Systems Analysis

CVE 505 Reliability

CVE 547 Highway Engineering

Any 500-level CVE Transportation Engineering or related course, with advisor approval.

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[Faculty Research and Publications](#)

Areas in which students may conduct thesis or project research are reflected by the research interests and publications of the faculty. These areas include concrete and steel structures, structural mechanics and dynamics, experimental and theoretical stress analysis, elasticity, constitutive modeling, composite materials, stress-wave propagation, ultrasonics, nondestructive evaluation, finite elements, fracture mechanics, soil mechanics, foundations, water resources, hydraulics, transportation and highway engineering, and construction materials.

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[Financial Assistance](#)

Graduate teaching and research assistantships and graduate tuition are available to qualified students on a competitive basis. Applicants who are seeking an assistantship should so indicate on the Application for Graduate Admission.

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Career Information

Working as a project engineer for a consulting firm; performing research in a government laboratory; conducting analysis, design, and research in industry; and managing a public works facility are career activities of graduates of the M.S. in Civil Engineering program. Recent graduates are working as a structural designer, a ceramics researcher, and a stress analyst. Job prospects for holders of advanced degrees in civil engineering are excellent at this time.

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Admission Information

Admission to the graduate program in civil engineering is open to qualified students with a baccalaureate degree in engineering or science. A minimum baccalaureate [grade-point](#) average of 2.75 normally is required. The applicant must have successfully completed those courses common to accredited undergraduate programs in engineering or engineering science, including the following: statics, dynamics, mechanics of materials, one year of physics, and mathematics up to and including ordinary differential equations. Additional course work may be required to satisfy deficiencies in the student's under-graduate preparation.

The [GRE](#) General section is required if one or more of the following conditions is true:

- The undergraduate degree was awarded by a college or university outside of the United States, or by a Canadian institution not accredited by the Canadian Engineering Accreditation Board of the Canadian Council of Professional Engineers.
- An unaccredited college or university awarded the undergraduate degree.
- The student's undergraduate cumulative [grade-point](#) average is below 2.75.
- The year of the baccalaureate degree precedes the date of application to the [College of Graduate Studies](#) by more than six years; however, in this case, the examination requirement may be waived, with program approval, if the applicant's undergraduate [grade-point](#) average is 3.00 or above.

If the [GRE](#) is required, a minimum score at the 80th percentile on the Quantitative section normally is required.

International students should refer to the section earlier in this Catalog for information on testing requirements to demonstrate English-language proficiency. International students who want to be considered for teaching [assistantships](#) are advised to take the Test of Spoken English (TSE).

To facilitate the admission process, it is strongly recommended that applicants use the online application system at www.csuohio.edu/admissions/gradForm.html. The processing time for paper application forms is longer.

Degree Requirements

In addition to University requirements, a master's candidate is subject to the following regulations:

1. Completion of the core courses for the selected specialization.
2. A minimum of 24 credits of course work is required for students following the thesis option. These students must complete a minimum of six credits of thesis (a maximum of six credits count toward the degree).
3. A non-thesis option also is available, with advisor approval. Students following the non-thesis option must complete a minimum of 30 credit hours for the degree.

4. A maximum of six credit hours of course work may consist of approved 400-level courses taken outside of the department.
5. Course work may include a maximum of nine credits of graduate-level course work performed at other institutions.
6. A maximum of four credits of Special Topics may be used for the master's degree.
7. A maximum of nine credits may be taken outside of the department with advisor approval.

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Exit Requirements

Thesis students must submit a thesis to their graduate committee following the Thesis and Dissertation Format Guidelines available from the [College of Graduate Studies, Keith Building, Room 1150](#). Acceptance of the thesis by the graduate committee and the passing of an oral defense of the thesis are required.

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Courses (See Addenda)

[CVE 500 Mathematical Methods in Engineering Mechanics \(4-0-4\)](#). Partial differential equations, integral equations, complex variables, integral transforms, and variational calculus as applied to the areas of elasticity, plasticity, fracture mechanics, materials science, and structural engineering.

[CVE 504 Civil Engineering Systems Analysis \(4-0-4\)](#). Application of standard mathematical optimization procedures to the solution of linear and nonlinear civil engineering systems.

[CVE 505 Reliability \(4-0-4\)](#). Includes a basic review of probability and statistics. Aspects of Monte Carlo simulation are discussed as they relate to reliability analysis and parameter estimation. Concepts of Weibull analysis and weakest-link theory are discussed thoroughly along with other system-reliability topics. Standard techniques to estimate statistical parameters are presented. Limit-state functions, the reliability index, and approximate methods are discussed. Code provisions based on probabilistic methods are presented.

[CVE 509 Energy Methods in Structural Mechanics \(3-0-3\)](#). Prerequisite: Permission of instructor. Development of the principles of virtual work, total potential energy, complementary virtual work, total complementary energy, and Reissner's principle for solid mechanics problems. Castigliano theorems, Ritz, Galerkin, and finite-element methods. Applications in structural mechanics problems for bars, beams, columns, plates, and shells.

[CVE 511 Matrix Methods of Structural Analysis \(3-0-3\)](#). Energy-methods approach to matrix structural analysis, including the development of element material stiffness, geometric stiffness, and mass matrices of basic structural elements; emphasis on the displacement method with computer-program solutions of truss and frame problems.

[CVE 512 Finite Element Analysis I \(3-0-3\)](#). Prerequisite: CVE 511 or permission of instructor. Theory and application of finite-element methods as an analysis tool for two- and three-dimensional stress-analysis problems in engineering.

[CVE 513 Advanced Strength of Materials \(4-0-4\)](#). Prerequisite: ESC 211. Fosters an understanding of a number of advanced concepts in the field of engineering mechanics. Topics include three-dimensional stress-strain relationships, including failure theories; bending of non-symmetrical members; curved-beam theory; beams on elastic foundations; torsion of non-circular shafts using the membrane analogy; and plate theory.

CVE 514 Analysis and Design of Composite Materials (4-0-4). Prerequisite: ESC 211. Behavior of unidirectional composites, rule of mixtures, short-fiber composites, analysis of orthotropic lamina, analysis of laminated composites, design of polymer-composite structures, and repair of reinforced concrete structures with composite materials.

CVE 515 Elastic Instability (3-0-3). Prerequisite: CVE 511. Euler buckling of bars, beam/columns, and plates using matrix methods; concepts of geometric nonlinearity including bifurcation and limit-point analysis using iterative numerical techniques; applications to load eccentricity and system imperfection.

CVE 517 Structural Vibrations (4-0-4). Prerequisites: ESC 202 and CVE 412. Dynamic response of single and multiple degree-of-freedom and continuous structural systems to general force inputs by integration and modal methods; approximate design methods of structural systems under dynamic loading.

CVE 521 Behavior and Properties of Concrete (3-0-3). Prerequisite: CVE 422. Properties of hydraulic cements, aggregates, plastic, and hardened concrete; effect of admixtures and curing conditions; specifications and acceptance tests; placement, consolidation, finishing, and durability of concrete.

CVE 523 Prestressed Concrete (3-0-3). Prerequisite: CVE 422. Immediate and long-term stress losses in post-tensioned and pre-tensioned members; analysis and design of post-tensioned and pre-tensioned members for flexure and shear; proportioning of members, calculation of the amount, and positioning of reinforcement.

CVE 524 Nondestructive Evaluation (3-2-4). Methods of nondestructive evaluation are studied. Topics include ultrasonics, acoustic emissions, penetrants, eddy current, X-ray and neutron radiography, digital radiography, computed tomography, and thermography. Cross-listed with MME 524.

CVE 525 Advanced Structural Design (3-0-3). Topics in reinforced concrete and steel design—plastic design of beams and frames, composite construction, plate-girder design, torsion, two-way slab design, and limit-state design.

CVE 528 Structural Wood Design (4-0-4). Vertical dead and live loads due to gravity, roof, and floor. Lateral design loads due to wind and seismic activity. Properties and grades of sawn lumber and glulam members, modification factors of allowable stresses; analysis and design of axially loaded members, combined axial and bending effects. Properties and grades of plywood and other rated sheathing; analysis and design of horizontal diaphragms, chords, drag struts, and shearwalls. Design of nailed, bolted connections; timber connectors and connection hardware.

CVE 530 Advanced Soil Mechanics (3-0-3). Soil mineralogy, determination of soil composition, clay-water electrolyte systems, soil composition, and engineering properties. Conduction phenomenon. Frozen-soil engineering.

CVE 531 Advanced Foundations (3-0-3). Subsurface explorations; shallow foundations; design of spread footings, mats, retaining walls, and deep foundations; design of piles, piers, and caissons.

CVE 540 Soil Stabilization and Decontamination (3-1-4). Engineering classification of soils, clay mineralogy, properties of different types of soils, such as strength, permeability, volume-density characteristics; soil contaminant interaction, methods of soil stabilization, methods of soil decontamination, process selection, and site remediation. Soil-decontamination design project.

CVE 547 Highway Engineering (4-0-4). Prerequisite: CVE 446. Properties of materials used in highway construction. Effects of loading and the environment on pavement life. Design of flexible and rigid pavement systems. Construction methods and management.

CVE 561 Hydrologic Analysis (3-0-3). Characterization and analysis of the hydrologic

cycle and associated hydrologic abstractions. Statistical analysis of hydrologic events, hydrologic routing, and the effects of urbanization on the hydrologic response of a watershed.

CVE 562 Open Channel Hydraulics (3-0-3). Application of the principles of the conservation of mass, energy, and momentum to open channel flow phenomena. Analysis of open channel hydraulic structures and floodplain hydraulics. Emphasis is on computer applications and numerical methods.

CVE 563 Water Resources Engineering (3-0-3). Analysis and hydraulic design of water-resource engineering subsystems, including subsurface drainage, pressure-flow systems, pumps and turbines, reservoirs, spillways, and landfills.

CVE 564 Groundwater Hydrology (3-0-3). Analysis of the physical properties and the resultant groundwater flow in porous media. Application of the principles of the conservation of mass, energy, and momentum to groundwater flow systems. Includes well hydraulics, well design, aquifer analysis, infiltration, flow in the unsaturated zone, and introduction to groundwater contamination.

CVE 565 Hydrologic Modeling (3-0-3). Prerequisite: CVE 561. Numerical and statistical methods employed in computer models that simulate the movement of surface water through the hydrologic cycle. Emphasizes the utilization of computer programs to evaluate the hydrologic response of watersheds.

CVE 566 Groundwater Modeling (3-0-3). Prerequisite: CVE 564. Numerical and statistical methods employed in computer models that simulate the movement of groundwater through the hydrologic cycle. Emphasizes the utilization of computer programs to evaluate the groundwater-flow system.

CVE 571 Environmental Management Systems and Compliance (3-0-3). The study of environmental legislation and the resultant regulations as they apply to the environmental engineering profession. Addresses federal, state, and local regulations as applied to soil, water, air, and multimedia engineering activities.

CVE 593 Special Topics in Civil Engineering (one or four credits). Topics of current interest to the civil engineering profession. Offered on sufficient demand.

CVE 604 Elasticity (4-0-4). Prerequisite: CVE 513. Elasticity topics include tensor algebra, fundamentals of stress analysis, fundamentals of deformation theory, thermo-elastic constitutive relationships, uniqueness of solution, Airy's stress function, and various solution techniques for two-dimensional problems.

CVE 612 Finite Element Analysis II (3-0-3). Prerequisite: CVE 512. Extension of the finite-element method to the solution of advanced three-dimensional stress-analysis problems.

CVE 613 Nonlinear Finite Element Analysis (3-0-3). Prerequisites: CVE 512 and/or permission of instructor. Isoparametric finite-element discretization, incremental equations of motion. Total and updated Lagrangian formulations. Nonlinear geometry, nonlinear material problems in two and three dimensions. Computer solution of problems.

CVE 620 Fracture Mechanics and Plasticity Theory (4-0-4). Prerequisite: CVE 604. The stress and deformation field in the region of a crack are derived using linear elastic analysis. Topics include analyzing the change in potential energy due to crack propagation (Griffith's analysis), understanding the origin of critical fracture toughness parameters, and developing fundamental fracture criteria. In addition the course focuses on time-dependent plastic deformation analysis. Relationships between stress and strain that agree with experimental observations beyond the yield stress are constructed. Applications of these inelastic constitutive relationships in predicting plastic deformations in simple components are presented. Drucker's stability postulates are discussed, and the principles of slip-line theory are given. General theorems of limit analysis and their application in structural analysis are highlighted. The J-integral and fundamentals of elastic-plastic fracture analysis are presented.

CVE 622 Fatigue Analysis (2-0-2). Prerequisite: **CVE 620.** The fundamental concepts of crack growth in the presence of cyclic stress are considered. The fracture-mechanics approach is adopted. Similitude concepts, common empirical and semi-empirical equations, variable amplitude loading, and rainfall analysis are discussed.

CVE 625 Viscoelasticity (2-0-2). Prerequisite: **CVE 604.** Modeling of continua as a viscoelastic material in which stress and strain fields in deformable bodies are time and spatially dependent. Viscoelastic models include Maxwell fluids and Kelvin solids. Creep phenomena, stress relaxation, hereditary integrals, viscoelastic beams, beams on continuous supports, vibration, and wave propagation in viscoelastic materials are studied.

CVE 693 Special Problems in Civil Engineering (one to four credits). Detailed study of a special topic under the guidance of a faculty member.

CVE 696 Independent Study in Civil Engineering (one to four credits). Prerequisite: Chair approval. Detailed individual study on a special topic under the guidance of a faculty member.

CVE 697 Master's Research (one to eight credits per semester). Prerequisite: Graduate standing in civil engineering. Up to eight credits may be considered toward thesis credit requirements.

CVE 699 Thesis (one to eight credits). A design project or a research problem under the guidance of a faculty member, culminating in the writing of a thesis.

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Cleveland State University

2121 Euclid Avenue, Cleveland, Ohio 44115

www.csuohio.edu 216.687.2000

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2121 Euclid Avenue, Cleveland, Ohio

44115 • 216.687.2000

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Graduate Catalog 2004-2006

Doctor of Engineering

College of Engineering

Stilwell Hall 104

(216) 687-2555

[//www.csuohio.edu/engineering/2005_Engineering_Doctorate.htm](http://www.csuohio.edu/engineering/2005_Engineering_Doctorate.htm)

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Faculty

All **graduate faculty**, including adjunct faculty, in the following departments of the Fenn College of Engineering:

Chemical and Biomedical Engineering

Civil and Environmental Engineering

Electrical and Computer Engineering

Industrial and Manufacturing Engineering

Mechanical Engineering

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Introduction

The Doctor of Engineering degree is granted in recognition of high achievement in scholarship and an ability to apply engineering fundamentals to the solution of complex technical problems. Students are expected to pursue a broad program of study, pass all prescribed examinations, and submit an innovative, high-quality applied-engineering dissertation as described in the section on Degree Requirements.

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Faculty Research and Publications

Faculty members of the Fenn College of Engineering are very active in research sponsored by government agencies and industry. Involvement in research activities provides an excellent educational opportunity for students to advance their technical knowledge and professionalism while accomplishing dissertation work. The majority of doctoral students are involved with faculty in sponsored research, and all students are expected to be involved in some form of faculty/student research as part of the dissertation work. High-quality research should lead to publication of the project's contribution to the body of science.

There are more than 70 active research projects in the College. The sampling of the topics

presented below reflects the broad interests and capabilities of the faculty and students.

Thermodynamics and Phase Equilibria
Bioreactors and Bioseparations
Computational Fluid Dynamics
Multiphase Flow and Heat Transfer
Phase Change Heat Transfer
Stirling Power and Refrigeration Technology
Environmental Engineering
Tribology
Reactor Design
Adsorption and Diffusion
Sensor Technology
Modulation Techniques
Error Control Coding
Spread Spectrum Systems
Robust Communications
System and Control Theory
Power Electronics and Motor Drives
Intelligent System Monitoring
Intelligent Control
Computer Communication Networks
Modeling of Metabolic Systems
Power System Operation and Control
Neural Networks and Fuzzy Logic
Microwave Devices
Structural Analysis
Vibrations
Finite Element Methods
Material Synthesis and Processing
Ceramics and Composite Materials
Gear Dynamics
Turbomachinery
Rotor Dynamics
Robotics and Machine Vision
Dynamics and Control
Manufacturing Systems
Real World Scheduling
Quality Control
Productivity Enhancement
Data Mining
Non-Destructive Testing of Civil Infrastructure
Failure Analysis and Performance of Construction Materials
Innovative Concrete Paving Materials

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Financial Assistance

Financial assistance is available on a limited basis in the form of research and teaching assistantships. All students interested in assistantships must meet and maintain the requirements specified by the College of Graduate Studies as described in the front section of this Catalog under Expenses and Financial Aid: Graduate Assistantships.

Research assistantships are provided through sponsored research activities; the number available at a given time is dependent on the research activity within the College. Interested students are encouraged to discuss the availability of assistantships and potential research projects with the program director, department chairs, and faculty as soon as possible.

Teaching assistantships are provided by individual departments to provide assistance with

classroom and laboratory courses. Responsibilities can include conducting classroom recitation sessions, setting up laboratory experiments, tutoring students in class work, grading, monitoring tests, and related activities. For further information, students should contact the respective department chairs.

All graduate teaching assistants who are [international students](#) are required to pass an English Language Proficiency Examination, which is administered by the University Testing Center.

Students are expected to work 20 hours per week on their assistantship assignments unless fewer hours are specified under the terms of their contracts. A limited number of [graduate tuition](#) also are available for which students are expected to work 10 hours per week.

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Career Information

The major objective of advanced graduate study in engineering is to enhance the student's preparation for a career as a professional in education or research. The doctoral program is designed to strengthen the individual's ability to apply creative leadership in the solution of important and complex technological problems. Graduates of the doctoral program have assumed positions in industry, government agencies, and educational institutions.

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Cleveland State-YSU Cooperative Agreement

Through a cooperative agreement between Cleveland State University and [Youngstown State University \(YSU\)](#), students who live in close proximity to YSU may pursue the Doctor of Engineering Degree offered by Cleveland State by completing some degree requirements at YSU, after admission and consultation with Cleveland State and YSU advisors. Youngstown-area students who choose a YSU faculty member as co-advisor with the Cleveland State dissertation advisor may complete a maximum of 12 credits of doctoral dissertation requirements at YSU. Students interested in this program should consult the Doctor of Engineering Director at Cleveland State or their YSU advisor.

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Admission Information

The applicant must hold a master's degree in engineering or in a related science discipline, such as chemistry, physics, or mathematics, or an M.D. At least one degree (baccalaureate or master's) must be in engineering. A minimum master's [grade-point](#) average of 3.25 is required.

The [GRE](#) General section is required if one or more of the following conditions pertains:

- The student's most recent engineering degree was awarded by a college or university outside of the United States, or by a Canadian institution not accredited by the [Canadian Engineering Accreditation Board](#) of the Canadian Council of Professional Engineers.
- The student's graduate cumulative [grade-point](#) average is below 3.25.
- The year of the student's master's degree precedes the date of application to the [College of Graduate Studies](#) by more than six years.

If the [GRE](#) is required, a minimum score at the 80th percentile on the Quantitative section is normally required.

International students should refer to the section earlier in this Catalog for information on testing requirements to demonstrate English-language proficiency.

To facilitate the admission process, it is strongly recommended that applicants use the online application system at www.csuohio.edu/admissions/gradForm.html. The processing time for paper application forms is longer.

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Degree Requirements

The doctoral degree includes the following specific requirements:

1. A minimum of 61 credits beyond the master's degree. These credits must include:
 - a. Eight credits of doctoral core courses (select two of the following):
 - [ESC 702 Applied Engineering Analysis I \(four credits\)](#)
 - [ESC 704 Applied Engineering Analysis II \(four credits\)](#)
 - [ESC 706 Applied Engineering Analysis III \(four credits\)](#)
 - b. Eight credits of graduate non-engineering courses related to the student's area of study and approved by the advisory committee and the Engineering College Graduate Affairs Committee
 - c. 12 credits of 700-level engineering electives, of which at least four credits must be design electives
 - d. Three credits of general graduate electives
 - e. A minimum of 30 credits for the dissertation.
2. Satisfactory completion of the qualifying examination.
3. Satisfactory completion of the doctoral candidacy examination.
4. Completion of the dissertation and the final oral examination.
5. Compliance with all requirements of the College of Graduate Studies for regular graduate student status and graduation.

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Exit Requirements

Doctoral students must follow the requirements described below.

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Advising

When a student is admitted, the director of the Doctor of Engineering Program assigns an interim advisor who assists the student in completing a preliminary study plan. Before 16 credits of course work have been completed, the student must propose a dissertation advisor and begin plans for the dissertation. At the same time an advisory committee is appointed, with the dissertation advisor serving as chair. The student's dissertation advisor, in consultation with the student, recommends five members of the [Graduate Faculty](#) for the advisory committee. One member must be external to the Engineering College. Usually, an additional member is added when an off-campus, industrial advisor is involved in the dissertation work. This off-campus project advisor may be a member of the advisory committee but does not have voting rights, unless he or she also has been given [Graduate](#)

Faculty status. Students in the ABE specialization (see below) may include faculty from The Cleveland Clinic Foundation on their advisory committees. The Graduate Affairs Committee (GAC) of the College reviews the composition of the advisory committee and recommends approval or changes to attain a membership balance that is knowledgeable in all facets of the dissertation topic. Finally, an additional member may be selected by the Dean of the [College of Graduate Studies](#).

The functions of the student's advisory committee are to approve a study plan and to approve a dissertation topic and proposal, each of which in turn must be approved by the College GAC. The student's advisory committee monitors the progress of the dissertation, approves the dissertation, and administers the oral defense.

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Examination

Individuals admitted to the program become candidates for the Doctor of Engineering degree after:

1. Completing all prescribed course work;
2. Passing the qualifying examination; and
3. Passing the candidacy examination.

The purpose of the doctoral qualifying examination is to evaluate a prospective student's mastery of the subject matters that are fundamental to the chosen engineering discipline/concentration beyond what is demonstrated by the grades obtained prior to entering the doctoral program. The student must demonstrate broad understanding of engineering science and mathematics and special knowledge and readiness to pursue further study in a specific discipline/concentration. The examination should be taken as early as possible after admission to the doctoral program. Successful completion of this examination must be attained before the student exceeds 20 credit hours beyond the master's degree.

The student's performance on the qualifying examination determines the future course of study. Students who pass continue the program of study. Those who pass conditionally are subject to additional course work and/or re-examination (only one re-examination is possible). Students who fail are advised to leave the program. The qualifying examination is administered by the Graduate Committee of the student's respective department. The minimum College standards require the examination to be written, open book, with at least two testing periods of three hours each. The examination is offered in fall and spring semesters. Students should determine from their department office the exact nature of their examination and the dates on which it is offered. All students intending to take the examination are required to notify their respective department office at least four weeks before the scheduled examination date.

The purpose of the doctoral candidacy examination is to assess a doctoral student's maturity and preparation to continue independent research in a specific research topic. The examination should be taken in a period of time not to exceed two years after successful completion of the qualifying examination. For the candidacy examination, the student must prepare a written dissertation proposal based on a scholarly review of literature in the dissertation area. The student's advisory committee administers the doctoral candidacy examination and determines the nature and duration of the examination. Based on the examination results, the student either passes and has the proposal accepted with a general understanding that the successful completion of the work presented result in the award of the Doctor of Engineering degree, or fails and has the proposal rejected. A student may repeat the candidacy examination a maximum of three times.

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Dissertation

The dissertation, a concentrated, in-depth, independent study of an appropriate engineering problem, is the most distinguishing feature of doctoral study. At least 30 credits of dissertation work are required, which correspond to at least one year of full-time study. The dissertation advisor and advisory committee, after approving a dissertation topic, monitors the student's progress and approves the final written dissertation after a successful oral defense. A maximum of 10 hours of Doctoral Research may be counted as Doctoral Dissertation.

Once a student begins the dissertation study, he or she must register for a minimum of three credit hours per semester until the minimum of 30 credits is completed. After that, the student shall maintain a minimum registration of one credit hour per semester until the dissertation is completed.

The dissertation is not limited to the physical aspects of the engineering problem, but should include, where pertinent, economic considerations, environmental impact, social implications, and other interdisciplinary factors relevant to the specific topic.

In many cases, the dissertation study is conducted off-campus at an industrial or governmental setting. This type of off-campus study is defined as an internship; it gives the student an intimate and practical exposure to real problems of engineering. The student's industrial internship dissertation project must be cleared for publication by the industrial or governmental organization at which the work is done. This written clearance must be included in the dissertation proposal.

The student intern has an off-campus advisor who may become a member of the student's advisory committee. This off-campus advisor is expected to work closely with the student and with the faculty dissertation advisor. However, the faculty dissertation advisor remains the chair of the advisory committee, ensuring that ultimate control of the dissertation resides with the University.

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Applied Biomedical Engineering (ABE) Specialization

The ABE specialization of the Doctor of Engineering program, initiated in the 1998 Fall Semester, is a unique partnership between the Fenn College of Engineering at Cleveland State and The Cleveland Clinic Foundation. The Department of Chemical and Biomedical Engineering at Cleveland State admin-isters the ABE specialization. Faculty members from both the College and the Clinic provide academic instruction and research advising in ABE specialization areas.

ABE specialization is specifically designed for engineers who wish to pursue careers in biomedical research and development, primarily in industry. Students are expected to have a strong foundation in an engineering discipline, through their B.S. or M.S. degrees before entering the ABE program. The high-level course work and research empower the students to become productive employees immediately after graduation. ABE graduates are expected to:

- Understand disease mechanisms,
- Improve the quality of life for patients by utilizing technology,
- Educate the next generation of biomedical engineers,
- Contribute to the reduction of health care costs by diagnosing diseases more quickly and accurately and by introducing innovative technological solutions to health care costs, and
- Address major societal health care issues by forming multidisciplinary teams of experts to formulate innovative approaches to health care.

Two unique educational features distinguishing ABE are:

1. Strong biological fundamentals, including cell and molecular biology, and

2. Inclusion of tools for success in real-world research and development.

These two features, along with highly specialized courses in specific areas of biomedical engineering, enable ABE graduates to fill the gap between engineering and medicine.

Together the College of Engineering and the Department of Biomedical Engineering at the Cleveland Clinic offer a rich spectrum of teaching and research resources aimed to:

- Provide quality education and training to students in Applied Biomedical Engineering,
- Undertake state-of-the-art applied research as complementary partners,
- Enhance the capacity for biomedical engineering teaching and research at regional, state, and national levels,
- Support personnel and technical needs of biomedical companies,
- Assist biomedical companies in moving from design to successful marketing of medical devices, and
- Enhance the biomedical infrastructure in the Northeast Ohio region.

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ABE Requirements

As a specialization within the Doctor of Engineering program, studies in the ABE program are governed by the regulations of the Doctor of Engineering program as stated above.

In addition to Doctor of Engineering requirements, students in the ABE specialization must:

1. Possess a working knowledge of college-level physiology. If taken at the graduate level, physiology may count as an elective.
2. Complete 12 credits of core ABE electives:

CHE 751 Biomechanics (three credits)

CHE 753 Tissue Engineering (three credits)

CHE 757 Medical Device Design and Biomaterials (three credits)

CHE 759 Medical Imaging (three credits)

3. Complete the eight credits of graduate-level non-engineering courses required for the Doctor of Engineering degree through doctoral-level courses in areas such as biochemistry, cell biology, or other biomedical topics.

The required 30 credits of doctoral research may be performed at either or both Cleveland State or the Cleveland Clinic depending on the chosen research topic and availability of facilities.

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Molecular Medicine Specialization

The Molecular Medicine Specialization is an interdisciplinary initiative linking the resources of the three Cleveland State/Cleveland Clinic joint doctoral programs: Regulatory Biology, Clinical-Bioanalytical Chemistry, and Applied Biomedical Engineering. Although the Molecular Medicine Program is not a new academic program and does not replace existing programs, it forms a logical interface to coordinate collective efforts of the existing joint

doctoral programs. For more information about [graduate assistantships](#) for outstanding candidates, contact the Department of Chemical and Biomedical Engineering.

Courses

Required engineering core courses and technical electives are listed below. Additional technical electives are available from individual engineering departments and are listed elsewhere in this Catalog.

Additional information may be obtained from:

Director of the Doctor of Engineering Program
Fenn College of Engineering
Stilwell Hall, Room 104
Cleveland State University
Cleveland, Ohio 44115
Telephone (216) 687-2555

Core Courses

ESC 702 Applied Engineering Analysis I (4-0-4)

ESC 704 Applied Engineering Analysis II (4-0-4)

ESC 706 Applied Engineering Analysis III (4-0-4)

Courses in Applied Biomedical Engineering (ABE)

CHE 751 Biomechanical Engineering (3-0-3)

CHE 753 Tissue Engineering (3-0-3)

CHE 757 Medical Devices and Biomaterials (3-0-3)

CHE 759 Medical Imaging (3-0-3)

Technical Electives in Chemical Engineering

CHE 702 Surface Phase Equilibria (3-0-3)

CHE 703 Fundamentals of Adsorption (3-0-3)

CHE 704 Multiphase Reactor Design (3-0-3)

CHE 705 Advanced Kinetics (3-0-3)

CHE 706 Advanced Mass Transfer (3-0-3)

CHE 707 Advanced Heat Transfer (3-0-3)

CHE 710 Phase Diagrams and Applications (3-0-3)

CHE 712 Combustion Systems (3-0-3)

CHE 714 Turbulent Flow (3-0-3)

CHE 716 Advanced Numerical Methods (3-0-3)

CHE 717 Process Optimization Methods (3-0-3)

CHE 718 Catalysis (3-0-3)

CHE 794 Selected Topics (3-0-3)

CHE 895 Doctoral Research (one to 12 credits)

CHE 899 Dissertation (one to 12 credits)

Technical Electives in Civil Engineering

CVE 704 Elasticity (4-0-4)

CVE 709 Energy Methods in Structural Mechanics (3-0-3)

CVE 712 Finite Element Analysis II (3-0-3)

CVE 713 Nonlinear Finite Element Analysis (3-0-3)

CVE 714 Elastic Instability (3-0-3)

CVE 720 Fracture Mechanics and Plasticity Theory (4-0-4)

CVE 722 Fatigue Analysis (2-0-2)

CVE 725 Viscoelasticity (2-0-2)

CVE 765 Hydrologic Modeling (3-0-3)

CVE 766 Groundwater Modeling (3-0-3)

CVE 771 Physical and Chemical Principles of Environmental Engineering (3-0-3)

CVE 774 Industrial Waste Treatment (3-0-3)

CVE 775 Environmental Engineering Laboratory (2-3-3)

CVE 780 Biological Waste Treatment (3-0-3)

CVE 782 Air Pollution Control Engineering Design (3-0-3)

CVE 783 Occupational Health Engineering (3-0-3)

CVE 785 Hazardous Waste Engineering Management (3-0-3)

CVE 786 Hazardous Waste Site Remediation (3-0-3)

CVE 793 Special Problems in Civil Engineering (one to four credits)

CVE 796 Independent Study in Civil Engineering (one to four credits)

CVE 897 Doctoral Research (one to 16 credits)

CVE 899 Dissertation (one to 16 credits)

Technical Electives in Electrical and Computer Engineering

EEC 701 Graduate Seminar (1-0-1)

EEC 721 Internet Software Systems (4-0-4)

EEC 723 Software Quality Assurance and Testing (4-0-4)

EEC 740 Advanced Control System Design (4-0-4)

- EEC 741 Multivariable Control (4-0-4)
- EEC 742 System Identification (4-0-4)
- EEC 743 Nonlinear Systems (4-0-4)
- EEC 744 Optimal Control Systems (4-0-4)
- EEC 745 Intelligent Control Systems (4-0-4)
- EEC 750 Signal Detection and Estimation (4-0-4)
- EEC 751 Digital Communications (4-0-4)
- EEC 752 Error Control Coding (4-0-4)
- EEC 753 Information Theory (4-0-4)
- EEC 754 Mobile Communications (4-0-4)
- EEC 755 Satellite Communications (4-0-4)
- EEC 770 Power Systems Operations (4-0-4)
- EEC 771 Power Systems Control (4-0-4)
- EEC 773 Power Electronics and Electric Machines (4-0-4)
- EEC 780 High Performance Computer Architecture (4-0-4)
- EEC 781 Distributed Computing Systems (4-0-4)
- EEC 782 Computer Networks I (4-0-4)
- EEC 783 Computer Networks II (4-0-4)
- EEC 784 Parallel Processing Systems (4-0-4)
- EEC 785 Modeling and Performance Evaluation of Computer Systems (4-0-4)
- EEC 786 Advanced Digital Design (4-0-4)
- EEC 787 Mobile Computing (4-0-4)
- EEC 793 Special Topics in Electrical Engineering (4-0-4)
- EEC 796 Independent Study in Electrical Engineering (one to four credits)
- EEC 895 Doctoral Research (one to 16 credits)
- EEC 899 Doctoral Dissertation (one to 16 credits)

Technical Electives in Industrial and Manufacturing Engineering

- IME 741 Manufacturing Expert Systems (3-0-3)
- IME 752 Robotics and Machine Vision (3-0-3)
- IME 753 Robotics and Machine Vision Laboratory (0-3-1)
- IME 754 Advanced Industrial Automation and Control (3-0-3)

IME 755 Systems Design and Integration Laboratory (0-3-1)

IME 762 Advanced Production and Inventory Control (3-0-3)

IME 764 Advanced Engineering Project Control (3-0-3)

IME 775 Advanced Simulation Design and Analysis (3-0-3)

IME 796 Directed Studies (3-0-3)

IME 895 Seminar (no credit)

IME 897 Doctoral Research (one to three credits)

IME 899 Dissertation (three credits — maximum of 12)

[Technical Electives in Mechanical Engineering](#)

MCE 710 Computational Fluid Flow and Heat Transfer (4-0-4)

MCE 718 Engineering Plasticity (4-0-4)

MCE 722 Energy Conversion (4-0-4)

MCE 732 Gas Dynamics (4-0-4)

MCE 738 Viscous Flow I (4-0-4)

MCE 739 Viscous Flow II (4-0-4)

MCE 741 Convection Heat Transfer (4-0-4)

MCE 742 Advanced Conduction Heat Transfer (4-0-4)

MCE 743 Radiation Heat Transfer (4-0-4)

MCE 744 Heat Transfer with Phase Change (4-0-4)

MCE 752 Robotics and Machine Vision (4-0-4)

MCE 754 Computer Aided Design and Optimization (4-0-4)

MCE 755 Acoustics (4-0-4)

MCE 760 Lubrication (4-0-4)

MCE 766 Advanced Control of Mechanical Systems (4-0-4)

MCE 770 Turbomachinery Rotordynamics (4-0-4)

MCE 780 Finite Element Analysis II (4-0-4)

MCE 793 Selected Topics in Mechanical Engineering (4-0-4)

MCE 796 Directed Study (one to four credits)

MCE 895 Seminar (no credit)

MCE 897 Doctoral Research (one, two, four, or eight credits)

MCE 899 Dissertation (one to 12 credits)

Course Descriptions

Doctoral Engineering Science

ESC 702 Applied Engineering Analysis I (4-0-4). Methods of optimization for engineering systems; classical optimization, Taylor's theorem, Lagrange Multipliers, and Kuhn-Tucker theorem; direct methods, Newton and quasi-Newton methods, penalty and Barrier methods, linear and nonlinear programming.

ESC 704 Applied Engineering Analysis II (4-0-4). Prerequisite: Engineering Statistics. Optimization in engineering economics; application of renewal theory; inventory and Markov decision models; Bayesian decision analysis.

ESC 706 Applied Engineering Analysis III (4-0-4). Engineering applications and solution techniques for partial differential equations; variational derivation of differential equations and boundary conditions; Hamilton's principle and Lagrange's equation; numerical methods and computer solutions for differential equations.

Applied Biomedical Engineering (ABE)

CHE 751 Biomechanics Engineering (3-0-3). Understanding the terms and concepts of biomechanical engineering as they relate to medical needs and patients, including topics in artificial joints, mechanics and modeling of soft tissue, properties of blood, cardiac valves, heart function and heart-assist replacement, biomechanical issues in rehabilitation equipment and prosthetics, renal function, and oxygen transport.

CHE 753 Tissue Engineering (3-0-3). Prerequisite: Standing in Engineering Doctoral program. Essential concepts and technologies in cellular and molecular biology, as relevant to the design, application, and evaluation of biological constructs in tissue engineering with preliminary understanding of commercial applications.

CHE 757 Medical Devices and Biomaterials (3-0-3). Prerequisite: Standing in Engineering Graduate program. Comprehensive overview of issues surrounding medical device design and regulation, including characteristics, functioning vitro testing, evaluation, and intellectual property. Fundamental properties of many of the materials that are used in medical devices.

CHE 759 Medical Imaging (3-0-3). Prerequisite: Standing in Engineering Doctoral program or permission of instructor. Ultrasound, Radio Nuclide Imaging, and Magnetic Resonance Imaging; description of data acquisition and image reconstruction techniques; introduction to image processing techniques; clinical applications and industrial procedures and regulations.

Technical Electives in Chemical Engineering

CHE 702 Surface Phase Equilibria (3-0-3). Prerequisite: CHE 502 or equivalent. Equilibrium between surface phases and bulk phases, adsorption, two-dimensional thermodynamics.

CHE 703 Fundamentals of Adsorption (3-0-3). Prerequisites: CHE 502 and CHE 506. Physical and chemical principles of adsorption, thermodynamics of adsorption, single and multi-component equilibria, kinetics of adsorption, adsorption column dynamics, and a review of industrially important adsorption processes. An emphasis on zeolites and their applications.

CHE 704 Multiphase Reactor Design (3-0-3). Prerequisite: CHE 504 or equivalent. Advanced reaction engineering principles applied to the design and operation of multiphase reactors. Multiple reactions and heat effects in gas-solid, gas-liquid, and gas-solid-liquid reacting systems. Optimization of chemical reactors.

CHE 705 Advanced Kinetics (3-0-3). Prerequisite: CHE 504 or equivalent. Consideration of the fundamentals of homogeneous and heterogeneous reacting systems. Discussion of kinetic mechanisms, non-isothermal kinetics, enzyme kinetics, and solid phase reactions.

CHE 706 Advanced Mass Transfer (3-0-3). Prerequisite: CHE 506 or equivalent. Multi-

component diffusion considered in detail; experimental data interpreted by film and penetration theories; discussion of unsteady-state and unconventional diffusion processes, such as thermal diffusion.

CHE 707 Advanced Heat Transfer (3-0-3). Prerequisite: CHE 506 or equivalent. Investigation of theory and methods of heat transfer of interest to chemical engineers. Topics include transient conduction, thermal boundary layer, forced convection, free convection, and radiation heat transfer.

CHE 710 Phase Diagrams and Applications (3-0-3). Prerequisite: CHE 510 or equivalent. Gibbs phase rule binary diagrams and their correlation with Gibbs free energy; influence of pressure on binary diagrams. Ternary equilibrium diagrams for condensed systems. Methods of presentation of equilibrium diagrams of four and more components.

CHE 712 Combustion Systems (3-0-3). Prerequisites: CHE 504, CHE 506, and CHE 582, or equivalents. Examination of systems that utilize combustion for generation of mechanical and thermal energy for specific applications. Representative systems, such as turbines and fluid bed units, are examined in detail.

CHE 714 Turbulent Flow (3-0-3). Prerequisite: CHE 506 or equivalent. In-depth study of fundamentals of turbulent flow. Phenomenological theories of turbulence. Experimental methods of measuring turbulence. Recent topics of research interest in turbulence.

CHE 716 Advanced Numerical Methods (3-0-3). Prerequisite: CHE 506 or equivalent. Modern numerical procedures in approximation theory, matrix eigenvalues, initial and boundary value problems, and partial differential equations. Skill in selecting appropriate procedures for particular problems is developed. Required projects consist of programming solutions to engineering problems.

CHE 717 Process Optimization Methods (3-0-3). Prerequisite: CHE 716 or equivalent. An introduction to optimization theory and methods. Examination of the application to process design. Study of the formulation of the engineering optimization problem. A design optimization project is required.

CHE 718 Catalysis (3-0-3). Prerequisites: CHE 502 and CHE 504. In-depth study of solid catalysts and catalytic process analysis and design. Kinetics of elementary steps and overall reactions. Kinetics of two-step reactions on non-uniform surfaces. Structure-sensitive and structure-insensitive reactions. Parasitic phenomena.

CHE 794 Selected Topics (3-0-3). Prerequisite: Standing in Engineering Doctoral program or permission of instructor. Advanced selected topics in chemical engineering. Offered on sufficient demand.

CHE 895 Doctoral Research (one to 12 credits). Prerequisite: Standing in Engineering Doctoral program or permission of instructor. Analysis of a specific problem in an area of mutual interest to the student and instructor. A formal written report is required. Up to 10 credits may be used toward the dissertation credit requirement.

CHE 899 Dissertation (one to 12 credits). Prerequisite: Successful completion of candidacy examination. The Dissertation Proposal Approval Form must be on file in the College of Graduate Studies prior to enrollment. Research under the guidance of a faculty member, culminating in the writing of a dissertation.

Technical Electives in Civil Engineering (See Addenda)

CVE 704 Elasticity (4-0-4). Prerequisite: CVE 513. Elasticity topics include tensor algebra, fundamentals of stress analysis, fundamentals of deformation theory, thermo-elastic constitutive relationships, uniqueness of solution, Airy's stress function, and various solution techniques for two-dimensional problems.

CVE 709 Energy Methods in Structural Mechanics (3-0-3). Prerequisite: CVE 604 or permission of instructor. Development of the principles of virtual work, total potential energy,

complementary virtual work, total complementary energy, and Reissner's principle for solid mechanics problems. Castigliano theorems, Ritz, Galerkin, and finite element methods. Applications in structural mechanics problems for bars, beams, columns, plates, and shells. Offered on sufficient demand.

CVE 712 Finite Element Analysis II (3-0-3). Prerequisite: CVE 512. Extension of the finite element method to the solution of advanced three-dimensional stress analysis problems. Offered on sufficient demand.

CVE 713 Nonlinear Finite Element Analysis (3-0-3). Prerequisites: CVE 512 and/or permission of instructor. Isoparametric finite element discretization and incremental equations of motion. Total and updated Lagrangian formulations. Nonlinear geometry and nonlinear material problems in two- and three-dimensions. Computer solution of problems. Offered on sufficient demand.

CVE 714 Elastic Instability (3-0-3). Prerequisite: CVE 511. Euler buckling of bars, beam/columns, and plates using matrix methods; concepts of geometric nonlinearity, including bifurcation and limit point analysis using iterative numerical techniques; applications to load eccentricity and system imperfection.

CVE 720 Fracture Mechanics and Plasticity Theory (4-0-4). Prerequisite: CVE 604. The stress and deformation field in the region of a crack are derived using linear elastic analysis. Topics include analyzing the change in potential energy due to crack propagation (Griffith's analysis), understanding the origin of critical fracture toughness parameters, and developing fundamental fracture criteria. In addition, the course focuses on time-dependent plastic deformation analysis. Relationships between stress and strain that agree with experimental observations beyond the yield stress are constructed. Other highlighted topics include the application of these inelastic constitutive relationships in predicting plastic deformations in simple components; Drucker's stability postulates; the principles of slip-line theory; general theorems of limit analysis and their application in structural analysis; and the J-integral and fundamentals of elastic-plastic fracture analysis.

CVE 722 Fatigue Analysis (2-0-2). Prerequisite: CVE 620. The fundamental concepts of crack growth in the presence of cyclic stress are considered. The fracture mechanics approach is adopted. Similitude concepts, common empirical and semi-empirical equations, variable amplitude loading, and rainfall analysis are discussed.

CVE 725 Viscoelasticity (2-0-2). Prerequisite: CVE 604. Modeling of continua as viscoelastic materials where stress and strain fields in deformable bodies are time and spatially dependent. Viscoelastic models include Maxwell fluids and Kelvin solids. Creep phenomena, stress relaxation, hereditary integrals, viscoelastic beams, beams on continuous supports, vibration, and wave propagation in viscoelastic materials are studied.

CVE 765 Hydrologic Modeling (3-0-3). Prerequisite: CVE 561. Numerical and statistical methods employed in computer models that simulate the movement of surface water through the hydrologic cycle. Emphasizes the utilization of computer programs to evaluate the hydrologic response of watersheds.

CVE 766 Groundwater Modeling (3-0-3). Prerequisite: CVE 564. Numerical and statistical methods employed in computer models that simulate the movement of groundwater through the hydrologic cycle. Emphasizes the utilization of computer programs to evaluate the groundwater flow system.

CVE 771 Physical and Chemical Principles of Environmental Engineering (3-0-3). Prerequisite: CVE 570. Theory and application of physical and chemical processes for water treatment and related environmental control systems. Offered spring semester.

CVE 774 Industrial Waste Treatment (3-0-3). Prerequisite: CVE 570. Study of sources of industrial wastewater and their treatability by physical, chemical, and biological processes; problems and solutions involved in combining municipal and industrial waste treatment; and treatment of wastewater from selected industries.

CVE 775 Environmental Engineering Laboratory (2-3-3). Prerequisites: CVE 471 and CVE 570. Laboratory evaluation and discussion of the unit operations and processes in water and waste treatment, with emphasis on the interpretation of theoretical concepts in full-scale systems. Offered on sufficient demand.

CVE 780 Biological Waste Treatment (3-0-3). Prerequisite: CVE 572. Biological treatment processes and systems used in water-quality control; biological and engineering considerations of wastewater treatment, including theory, purpose, evaluation, and design of secondary and tertiary processes. Offered spring semester.

CVE 782 Air Pollution Control Engineering Design (3-0-3). Prerequisite: CVE 581. Design of air-pollutant-control systems for mobile and stationary sources of pollutants. Offered on sufficient demand.

CVE 783 Occupational Health Engineering (3-0-3). Prerequisites: CVE 476 and CVE 570. Principles and application of occupational health engineering for the control of physical and chemical hazards in the workplace. Includes ventilation design, noise control, ionizing and non-ionizing radiation controls, and ergonomics. Offered on sufficient demand.

CVE 785 Hazardous Waste Engineering Management (3-0-3). Prerequisites: CVE 671 and CVE 680. Hazardous-waste risk factors, environmental audits, and pollution prevention. Design and operation of hazardous-waste management facilities.

CVE 786 Hazardous Waste Site Remediation (3-0-3). Prerequisites: CVE 671 and CVE 680. Hazardous-waste risk factors, site characterization, remediation technologies, remedial alternatives analysis, and radioactive wastes. Offered on sufficient demand.

CVE 793 Special Problems in Civil Engineering (one to four credits). Detailed study of a special topic under the guidance of a faculty member. Offered on sufficient demand.

CVE 796 Independent Study in Civil Engineering (one to four credits). Prerequisite: Chair approval. Detailed individual study on a special topic under the guidance of a faculty member. Available every semester.

CVE 897 Doctoral Research (one to 16 credits). Prerequisite: Standing in Engineering Doctoral program. Up to 10 credits may be used toward the dissertation credit requirements. Available every semester.

CVE 899 Dissertation (one to 16 credits). Prerequisite: Successful completion of candidacy examination and Dissertation Proposal Approval Form on file with the College of Graduate Studies. A design project or a research problem under the guidance of a faculty member, culminating in the writing of a dissertation. Available every semester.

Technical Electives in Electrical and Computer Engineering

EEC 701 Graduate Seminar (1-0-1). Prerequisite: Graduate standing. Experts from industry and academia present and discuss current issues and trends in research and the professional practice of electrical and computer engineering. Registration may be repeated for credit. Seminar credit does not count toward degree requirements. Graded S/F.

EEC 721 Internet Software Systems (4-0-4). Prerequisite: EEC 521. Analyzing, designing, constructing, testing, and maintaining Internet-based software systems; hypertext markup language, Java servlet, Java server pages, Javascript, extensible markup language (XML), extensible stylesheet language (XSL), XML schema, document object model.

EEC 723 Software Quality Assurance and Testing (4-0-4). Prerequisite: EEC 521. Software quality, software process, quality metrics, quality models, defects, test-case design, unit testing, integration testing, white-box testing, black-box testing, regression testing, Capability Maturity Model (CMM), and process improvement.

EEC 740 Advanced Control System Design (4-0-4). Prerequisites: EEC 440 and EEC 510. Systematic approach of applying modern control design methods, such as digital control,

adaptive control, and heuristic methods, to practical design problems. Students learn how to deal with typical industrial problems, such as nonlinearity, control saturation, parasitic effects, and chattering. Useful stability analysis techniques, such as the Circle Criterion and the Popov's Criterion. Polynomial matrix interpolation and its applications in control and system identification. Design examples and assignments.

EEC 741 Multivariable Control (4-0-4). Prerequisites: EEC 440 or equivalent, and EEC 510. Multi-input and multi-output control problems: robustness of control systems, singular value analysis, eigenvalue and eigenvector assignment, Kalman filter, LQ and H ∞ design methods. Limitations on achievable performance of feedback systems.

EEC 742 System Identification (4-0-4). Prerequisite: EEC 510. Development of dynamical system models from the basic laws of physics and identification of model parameters from system input-output measurements. Frequency and time-domain models.

EEC 743 Nonlinear Systems (4-0-4). Prerequisite: EEC 510. State-space and frequency-domain analysis and design of nonlinear feedback systems. Methods include Liapunov's stability analysis, singular perturbations, and describing functions. Feedback linearization, variable structure, and sliding-mode control.

EEC 744 Optimal Control Systems (4-0-4). Prerequisite: EEC 510. Introduction to the principles and methods of the optimal control approach; performance measures; dynamic programming; calculus of variations; Pontryagin's Principle; optimal linear regulators; minimum-time and minimum-fuel problems, steepest descent, and quasilinearization methods for determining optimal trajectories.

EEC 745 Intelligent Control Systems (4-0-4). Prerequisite: EEC 510. Artificial intelligence techniques applied to control system design. Topics include fuzzy sets, artificial neural networks, methods for designing fuzzy-logic controllers and neural network controllers; application of computer-aided design techniques for designing fuzzy-logic and neural-network controllers.

EEC 750 Signal Detection and Estimation (4-0-4). Prerequisite: EEC 512. The classical theory of detection and estimation of signals in noise. Bayesian hypothesis testing, minimax hypothesis testing, Neyman-Pearson hypothesis testing, composite hypothesis testing, signal detection in discrete time, sequential detection. Nonparametric and robust detection, parameter estimation, Bayesian estimation, maximum likelihood estimation Kalman-Bucy filtering, linear estimation, Wiener-Kolmogorov filtering, applications to communications.

EEC 751 Digital Communications (4-0-4). Prerequisite: EEC 512. Basic digital communication techniques, including formatting and baseband transmission, bandpass modulation and demodulation, and synchronization. Advanced modulation techniques, such as power-efficient modulation, spectrally efficient modulation, coded modulation, and spread-spectrum modulation. Introduction to communication-link analysis and block codes.

EEC 752 Error Control Coding (4-0-4). Prerequisite: EEC 751. Groups, fields, GF(2^m), linear block codes, cyclic code, convolutional codes, maximum likelihood decoding of convolutional codes, Viterbi algorithm, sequential decoding of convolutional codes, continuous phase modulation codes, trellis-coded modulation.

EEC 753 Information Theory (4-0-4). Prerequisite: EEC 512 or equivalent. Presents a coherent and unifying view of the concept of information, conveying a unique understanding as to how it can be quantified and measured. Within this context, concepts and principles of information theory as they relate to applications in communication theory, statistics, probability theory, and the theory of investment are introduced.

EEC 754 Mobile Communications (4-0-4). Prerequisite: EEC 751. Cellular-mobile communication concept and system-design fundamentals, mobile-radio propagation models, large-scale path loss, small-scale fading and multipath, modulation techniques for mobile radio, equalization, diversity, channel coding, speech coding, multiple access, wireless networking, wireless systems, and standards.

EEC 755 Satellite Communications (4-0-4). Prerequisite: EEC 751. Satellite channel, satellite-link analysis, satellite electronics, frequency division multiple access (FDMA), time division multiple access (TDMA), code division multiple access (CDMA), frequency-hopped communications, on-board processing, satellite cross links, VSAT networks, mobile-satellite networks.

EEC 770 Power Systems Operations (4-0-4). Prerequisite: EEC 571. Steady-state control of power flow. Optimal generating unit commitment. Frequency/active-power control, voltage/reactive power control. Automation generation of interconnected power systems.

EEC 771 Power Systems Control (4-0-4). Prerequisite: EEC 571. Nonlinear dynamic modeling and control of interconnected power systems in a deregulated environment. Voltage collapse, transient phenomena. Power-system stability enhancements, flexible FACTS devices.

EEC 773 Power Electronics and Electric Machines (4-0-4). Prerequisite: EEC 474 or EEC 574. Power electronics converters in combination with electric machines. Field-oriented induction machine control; stability of induction machines under sine-wave supply; voltage-source inverter drives and current-source inverter drives.

EEC 780 High Performance Computer Architecture (4-0-4). Prerequisite: EEC 581. Architecture analysis and design from a systems perspective are described in this course. Topics include memory-system design, pipeline design techniques, vector computers, multiprocessor systems, and multiprocessor algorithms.

EEC 781 Distributed Computing Systems (4-0-4). (See Addenda - July 29, 2005) Prerequisite: EEC 581. Overview of distributed computing systems. Topics include networking, interprocess communication, remote-procedure calling, name services, distributed time management, and file services. Some new technologies, including ATM networking, Internet works, multicast protocols, micro kernel-based distributed operating systems, and distributed shared memory, are discussed.

EEC 782 Computer Networks I (4-0-4). Prerequisite: EEC 581. Network architectures, communication protocols; data-link control, medium access control, LANS and MANS; network layer, TCP/IP.

EEC 783 Computer Networks II (4-0-4). (See Addenda - July 29, 2005) Prerequisite: EEC 782. Broadband networks, traffic characterization, admission and access control, switch architectures, congestion control. Emphasis on quantitative analysis and performance modeling.

EEC 784 Parallel Processing Systems (4-0-4). Prerequisite: EEC 581. Overview of parallel-system organizations and parallel algorithms. Topics include memory structures for parallel systems, interconnection networks, SIMD/MIMD processing, parallel programming languages, mapping and scheduling, parallel algorithms, and case studies.

EEC 785 Modeling and Performance Evaluation of Computer Systems (4-0-4). Prerequisites: EEC 581 and EEC 710. Evaluation of the performance of various computer systems through measurement, analytic modeling, and simulation techniques. Topics include performance metrics, workload characterization, statistical modeling, hybrid techniques, and case studies.

EEC 786 Advanced Digital Design (4-0-4). Prerequisite: EEC 581. Covers advanced topics in digital systems, including verification and simulation, test-vector generation, logic synthesis, behavioral synthesis, and design and development of data path and control path.

EEC 787 Mobile Computing (4-0-4). (See Addenda - July 29, 2005) Prerequisite: EEC 484. Provides a comprehensive overview of the mobile computing that is likely to become a pervasive part of future computing infrastructures with technical advancements in wireless communication, embedded processors, and portability technologies. Topics include mobile TCP/IP protocols, mobile ad hoc networks, mobile application architectures, system issues for

mobile devices, and some pervasive and sensor-computing examples.

EEC 793 Special Topics in Electrical Engineering (4-0-4). Prerequisite: Permission of instructor. Advanced selected topics in electrical engineering. Offered on sufficient demand.

EEC 796 Independent Study in Electrical Engineering (one to four credits). Prerequisite: Chair approval. Detailed individual study on a special topic under the guidance of a faculty member. Total credits for this course are limited to eight. Graded S/F.

EEC 895 Doctoral Research (one to 16 credits). Up to 10 credits may be applied to the dissertation credit requirement.

EEC 899 Doctoral Dissertation (one to 16 credits). Prerequisite: Successful completion of candidacy examination and Dissertation Proposal Approval Form on file with the College of Graduate Studies.

Technical Electives in Industrial and Manufacturing Engineering

NOTE: Any IME course without specific prerequisite(s) requires permission of instructor.

IME 741 Manufacturing Expert Systems (3-0-3). Prerequisites: **IME 530** and permission of instructor. Construction of artificial intelligence models known as expert systems (ESs). Fundamentals of the PROLOG language; applications of ESs to engineering design and manufacturing systems.

IME 752 Robotics and Machine Vision (3-0-3). The basic principles underlying the analysis and application of robots used in manufacturing systems are introduced and analyzed. Stand-alone and robot-integrated machine vision systems and their applications are discussed in detail.

IME 753 Robotics and Machine Vision Laboratory (0-3-1). Students receive hands-on experience in programming and applying robots, robotic arms, and machine vision systems to material processing and handling problems.

IME 754 Advanced Industrial Automation and Control (3-0-3). Design and analysis of integrated manufacturing cell-control systems for material handling, processing, and automated inspection systems. Topics include PLCs, machine vision, I/O communication, and manufacturing automation protocols.

IME 755 Systems Design and Integration Laboratory (0-3-1). Projects representing the advanced concepts developed in IME 754 are assembled and applied on automated processing and assembly cells in the industrial automation laboratory.

IME 762 Advanced Production and Inventory Control (3-0-3). Prerequisites: **IME 562** and permission of instructor. Emphasis on the integration of planning and control functions in a dynamic environment. Application of current philosophical, analytical, and empirical research dealing with alternative approaches for planning and control of manufacturing operations are studied.

IME 764 Advanced Engineering Project Control (3-0-3). Prerequisites: **IME 530** and permission of instructor. The theory, concepts, techniques, and process of project control are examined. Emphasis is on the scheduling of scarce resources and impact of technology on project decisions.

IME 775 Advanced Simulation Design and Analysis (3-0-3). Prerequisites: **IME 575**, **ESC 310**, and permission of instructor. Theoretical study of queuing models and random number generators, input analysis, output analysis, model verification and validation, model animation, and a review of simulation-modeling languages.

IME 796 Directed Studies (3-0-3).

IME 895 Seminar (no credit).

IME 897 Doctoral Research (one to three credits). Up to 10 credits may be applied to the dissertation credit requirement.

IME 899 Dissertation (three credits — maximum of 12). Prerequisite: Successful completion of candidacy examination prior to enrollment and Thesis and Dissertation Proposal Form on file with the [College of Graduate Studies](#).

Technical Electives in Mechanical Engineering

MCE 710 Computational Fluid Flow and Heat Transfer (4-0-4). Prerequisite: MCE 501. Application of advanced numerical methods to current problems in the fluid flow and heat-transfer areas; internal and external incompressible and compressible flows; numerical methods for inviscid flow equations; multigrid procedure; computer applications.

MCE 718 Engineering Plasticity (4-0-4). Prerequisite: MCE 504. Yield criteria and application to elastic-plastic and rigid-plastic deformation; flow stress; plastic-deformation processes; tribology; thermal effects; analysis by slab method, upper and lower bound on power, and finite element methods.

MCE 722 Energy Conversion (4-0-4). Prerequisite: MCE 521. Nuclear, solar, and chemical energy-conversion techniques. Thermodynamics of power cycles and systems; thermoelectric devices; thermionic generators; MHD systems; fuel cells; photovoltaic cells.

MCE 732 Gas Dynamics (4-0-4). Prerequisite: MCE 501. Generalized one-, two-, and three-dimensional compressible flows, normal shocks, oblique shocks, flow with friction and heat transfer, method of characteristics, real gas effects.

MCE 738 Viscous Flow I (4-0-4). Prerequisite: MCE 501. Derivation and exact solutions of Navier-Stokes equations governing incompressible, laminar viscous flow; applications include non-steady flow, low Reynolds numbers flows, parallel flows, and laminar boundary layer; classification of fluid behavior, rheometry, and viscoelastic and time-dependent properties.

MCE 739 Viscous Flow II (4-0-4). Prerequisite: MCE 738. Derivation and formulation of compressible fluid-flow equations in both integral and differential forms; applications include exact solutions with and without pressure gradients; introduction to turbulence and modeling of turbulent boundary layers; laminar and turbulent flows of non-Newtonian fluids; internal and external flows; boundary layer equations for momentum and energy transport.

MCE 741 Convection Heat Transfer (4-0-4). Prerequisite: MCE 638. Convective processes involving heat, momentum, and mass transfer, and their applications. Laminar and turbulent convection heat transfer; internal and external flows.

MCE 742 Advanced Conduction Heat Transfer (4-0-4). Prerequisite: MCE 501. Heat transfer by conduction in steady, transient, and periodic states in solids for one-, two-, and three-dimensional problems; applications of various analytical and numerical methods.

MCE 743 Radiation Heat Transfer (4-0-4). Prerequisite: MCE 501. Physics of the thermal radiation process; surface properties; exchange factors and networks for heat transfer between surfaces; characteristics of emission and absorption of flames, gases, and the atmosphere; solar radiation.

MCE 744 Heat Transfer with Phase Change (4-0-4). Prerequisite: MCE 741. Heat transfer in phase change; nucleate and film-boiling mechanisms; pool and forced-convection boiling; two-phase flow, flow regimes, and transitions; application to cryogenics and nuclear reactors.

MCE 752 Robotics and Machine Vision (4-0-4). Prerequisite: MCE 501 or MCE 504. Analysis and design of robotic systems used in manufacturing; sensing technology; machine vision; digital image processing; image analysis; robot intelligence.

MCE 754 Computer Aided Design and Optimization (4-0-4). Prerequisite: MCE 501 or MCE 504. Optimum design problem formulation, optimum design concepts, numerical methods for

unconstrained and constrained optimum designs; 3-D graphics techniques, non-traditional computing techniques such as artificial neural networks and fuzzy logic, which provide a different approach in engineering design and analysis.

MCE 755 Acoustics (4-0-4). Prerequisite: MCE 501. Elements of theoretical acoustics: plane and spherical acoustic waves; transmission and absorption of acoustic waves; theory of resonators and filters; application of theory to noise problems in mechanical and air-moving equipment.

MCE 760 Lubrication (4-0-4). Prerequisite: MCE 501. Hydrodynamic lubrication, self-excited instability of hydrodynamic bearings, design optimization. Hydrostatic lubrication with design optimization. Elastohydrodynamic lubrication, calculation of Hertzian contact stresses, and deformation in rolling contact bearings.

MCE 766 Advanced Control of Mechanical Systems (4-0-4). Prerequisite: MCE 503. Design and analysis of multivariable systems using state-variable techniques; introduction to system modeling, observability, controllability, stability, Z transforms, and controller design.

MCE 770 Turbomachinery Rotordynamics (4-0-4). Prerequisite: MCE 512. Introduction to a collection of phenomena and related analysis techniques associated with the dynamics of rotating machinery, e.g., turbines, compressors, pumps, power transmission shafting, and others. Development of adequate, computationally oriented component and system models for the analysis of rotors. State-of-the-art computer codes to analyze modern rotating machinery are used during the second half of the course.

MCE 780 Finite Element Analysis II (4-0-4). Prerequisite: MCE 580. Study of two- and three-dimensional continua; application of finite-element methods to mechanical engineering analysis and design problems.

MCE 793 Selected Topics in Mechanical Engineering (4-0-4). Topics of current interest to the mechanical engineering profession. Total credits in MCE 793 should not exceed eight.

MCE 796 Directed Study (one to four credits). Prerequisite: Permission of instructor. Directed study of an individual problem or subject area under the supervision of a faculty member. Total credits for this course are limited to four.

MCE 895 Seminar (no credit).

MCE 897 Doctoral Research (one, two, four, or eight credits). Prerequisite: Standing in Engineering Doctoral program. Offered every semester. Up to 10 credits may be considered toward dissertation credit requirements.

MCE 899 Dissertation (one to 12 credits). Prerequisite: Successful completion of candidacy examination and Dissertation Proposal Approval Form on file with the College of Graduate Studies prior to enrollment. Offered every semester.

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Master of Science in Electrical Engineering

Department of Electrical and Computer Engineering

Stilwell Hall 332
(216) 687-2589
www.csuohio.edu/electrical_engineering/

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The Faculty

Professors:

James H. Burghart
Eugene A. Klingshirn, Emeritus
Vijaya K. Konangi
George L. Kramerich
James E. Maisel, Emeritus
A. Haq Qureshi, Emeritus
Ronald G. Schultz, Emeritus
Eugenio Villaseca, Chair
Fuqin Xiong

Associate Professors:

Pong P. Chu
John F. Donoghue
Zhiqiang Gao
Manju Ghalla Goradia, Emeritus
Murad Hizlan
Dan Simon
Chansu Yu

Assistant Professor:

Ana Stankovic

Adjunct Professors:

Tianli Chia
Louis R. Nerone

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Introduction

The Master of Science in Electrical Engineering program integrates theory and applications. Courses are normally scheduled in the late afternoon and early evening to serve the needs of both full-time and part-time students. The program is suitable for students planning to continue their studies at the doctoral level as well as those who do not plan formal studies beyond the master's degree.

Students interested in the doctoral program may consult the Doctor of Engineering program description in this Catalog.

Each student plans a program of study in consultation with an advisor appointed by the

Department of Electrical and Computer Engineering. The program includes required courses and an integrated selection of courses in the student's field of interest.

The following areas of specialization are offered for graduate study and research:

- Communication Systems
- Computer Systems
- Control Systems
- Power Electronics and Power Systems

The Electrical and Computer Engineering Department maintains the following laboratories for instructional purposes:

- Communications and Electronics Laboratory, fully equipped to conduct experiments in analog and digital electronics, and analog and digital communications, such as analog modulation and demodulation (AM and FM), digital modulation and demodulation (ASK, PSK, FSK), phase-locked loops, and baseband transmission.
- Power Electronics and Electric Machines Laboratory, equipped with line-frequency single- and three-phase converters, switch-mode converters, which in combination with synchronous, induction, and dc machines allow for the experimental study of feedback-controlled motor drives.
- Embedded Systems Laboratory, equipped with PCs for writing and implementing micro-controller-based assembly code software, which allows for the experimental study of real-time interrupt handling, analog-to-digital conversion, serial port reception/ transmission, data acquisition, communicating with external devices, and other issues associated with embedded systems.
- Control Systems Laboratory, equipped to conduct experiments and projects in real-time data acquisition and control, including the capability for modeling and computer control of electromechanical and liquid-level systems.
- Digital Signal Processing Laboratory, equipped to conduct experiments in real-time DSP using A/Ds, D/As, and DSP boards.
- Digital Systems Laboratory, equipped with logic analyzers, testing equipment, prototyping boards, and workstations running synthesis and simulation software; it is used to conduct basic digital circuit experiments as well as to design, prototype, and test large systems.

The following facilities also are available to support research:

- Applied Control Research Laboratory, equipped to conduct joint research projects with industry, giving students the opportunity to apply state-of-the-art technology in real-world problem solving.
- Digital Communication Research Laboratory, with electronics and communications instruments, high-speed workstations, and computer-simulation packages (such as Matlab-Simulink) to conduct research projects in digital modulations error-control codes, satellite communications, mobile wireless communications, and spread-spectrum communications.
- Digital Systems Research Laboratory, equipped with work-stations and testing equipment to do prototyping and implement research projects.
- Embedded Control Systems Research Laboratory, focuses on the development of real-time control and signal processing software. The software is implemented in micro-controllers and digital signal processors (DSPs) and the target applications include field-oriented motor control.
- Power Electronics and Electric Machine Research Laboratory, centered around the following: two integrated test benches on which each machine has its own power electronic converter;

state-of-the-art DSP development system used to generate digital control algorithms for power converters in combination with electric machines; a range of commercial machines, dynamometers, and modern digital instrumentation.

- Power Systems Research Laboratory, fully equipped to conduct research projects in power engineering requiring personal computers, workstations, or mainframe computers.
- Laboratories at the NASA Glenn Research Center for students supported by NASA.

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Faculty Research and Publications

The members of the Electrical and Computer Engineering faculty are engaged in research in several areas suitable for student theses and dissertations. These include computer architectures, reconfigurable computing systems, computer communication networks, bandwidth and power-efficient modulation schemes, error-control coding, multi-carrier communications, spread-spectrum systems, mobile communication systems, robust communications, power systems operation and control, power electronics and motor drives, system identification, advanced control algorithms, and intelligent control systems. Results of research in these areas are published regularly in refereed journals, such as Transactions of IEEE and IEE Proceedings, and are presented at scholarly conferences and symposia.

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Financial Assistance

The Department of Electrical and Computer Engineering offers a number of research and teaching assistantships and graduate tuition. In addition, internships sponsored by the NASA Glenn Research Center and General Electric, and fellowships awarded by the Ohio Space Grant Consortium are available.

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Admission Information

Admission to the graduate program in electrical engineering is open to qualified students with baccalaureate degrees in engineering or science. A minimum baccalaureate grade-point average of 3.00 normally is required.

The GRE General section is required if one or more of the following conditions is true:

- The undergraduate degree was awarded by a college or university outside of the United States or Canada, or by a Canadian institution not accredited by the Canadian Engineering Accreditation Board of the Canadian Council of Professional Engineers.
- An unaccredited college or university awarded the undergraduate degree.
- The undergraduate degree was in a discipline unrelated to electrical or computer engineering.
- The student's undergraduate cumulative grade-point average is below 3.00.
- The year of the baccalaureate degree precedes the date of application to the College of Graduate Studies by more than six years.

To facilitate the admission process, it is strongly recommended that applicants use the online application system at www.csuohio.edu/admissions/gradForm.html. The processing time for paper application forms is longer.

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Degree Requirements

Students in the M.S. in Electrical Engineering program may elect a thesis option or a non-thesis option. Students who receive financial assistance are required to complete the thesis option. All students, and particularly those intending to pursue a doctoral degree, are encouraged to select the thesis option.

Each student in the program must meet all College of Graduate Studies requirements and, in addition, must meet the following departmental requirements:

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Program Options

1. Thesis Option:

- a. A minimum of 30 total credit hours, including six credit hours of thesis, and at least two 600-level EEC courses.
- b. Successful completion and defense of a thesis. A graduate committee guides the thesis work.

2. Non-thesis Option:

- a. A minimum of 32 total credit hours, including at least three 600-level EEC courses.
- b. A maximum of eight credit hours of graduate course work outside of the department may be applied toward the degree with advance approval from the student's advisor.
- c. The seminar course [EEC 601](#) and 400-level courses may not be applied for credit toward the M.S. degree.
- d. On or before completing eight credit hours of course work, a student must submit a plan of study that requires both advisor and program committee approval.
- e. Thesis students must give an oral presentation of the thesis.

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Exit Requirements

Thesis students must follow the Thesis and Dissertation Format Guidelines available from the [College of Graduate Studies](#). Acceptance of the thesis by the thesis committee and the passing of an oral defense of the thesis are required.

Non-thesis students must complete the course requirements.

For further information about the M.S. in Electrical Engineering program, contact the department at (216) 687-2589.

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Courses (See Addenda - July 29, 2005)

[EEC 510 Linear Systems \(4-0-4\)](#). Prerequisite: Graduate standing. Fundamental concepts in linear system theory: matrix algebra, linear vector space, linear operator; linearity, causality, relaxedness, and time invariance. Input-output and state-space models. Solutions of linear dynamic equation and impulse response. Characteristics of linear systems: controllability, observability, and stability.

EEC 512 Probability and Stochastic Processes (4-0-4). Prerequisite: Graduate standing. General concepts of probability and random variables, including random experiments, inequalities, joint distributions, functions of random variables, expectations, and the law of large numbers. Basic concepts of random processes and their properties are introduced. Markov processes, linear systems with stochastic inputs, and power spectra are presented.

EEC 517 Embedded Systems (2-4-4). Prerequisites: Graduate standing. Software design of microcontroller-based embedded systems. Topics include microcontroller architecture; assembly programming; C programming; real-time interrupts; external interrupts; program size considerations; input/output issues; analog-to-digital conversion; serial port reception/transmission.

EEC 521 Software Engineering (4-0-4). Prerequisites: Graduate standing. Software process, methods, and tools; phases of software development process including requirements analysis, engineering, and software project management, metrics, and quality assurance.

EEC 522 Software Systems Modeling and Analysis (4-0-4). Prerequisite: Graduate standing. Software system formal mechanisms, including specification, validation, and verification. Formal specification with algebraic specification and abstraction/reasoning about system properties. Evolution of formalism to model a certain system. Proof of models using analytical methods and experimental methods using simulators.

EEC 525 Data Mining (4-0-4). Prerequisite: Graduate standing. Data-mining process, data-mining tasks including classification, clustering, association, and prediction; methods and procedures for data mining using machine learning, neural networks, and database techniques; data-mining tools, systems, and applications.

EEC 530 Digital Signal Processing (4-0-4). Prerequisite: Graduate standing. Modeling of DSP operations using discrete-time signals and systems: difference equations, Z-transforms, Fourier methods. Signal sampling (A/D) and reconstruction (D/A); digital filters; sample rate converters and oversampling; DFT and spectrum estimation; selected applications. Out-of-class projects completed on DSP equipment in lab.

EEC 561 Electromagnetic Compatibility (4-0-4). Prerequisite: Graduate standing. Methods of electromagnetic coupling between devices, shielding, grounding, frequency spectra of unintentional radiation sources, radiation coupling between distant devices, absorption and reflection losses in nonmagnetic shielding, high-permeability shields, shielding penetration by wires and cables, electromagnetic compatibility (EMC) regulations and measurements.

EEC 571 Power Systems (4-0-4). Prerequisite: Graduate standing. Power system components modeling: transformers, generators, transmission lines. Power flow, economic scheduling of generation, power systems faults, and transient stability.

EEC 574 Power Electronics II (4-0-4). Prerequisite: EEC 470. Advanced course in power electronics: switching function representation of converter circuits (DC-DC, AC-DC, DC-AC, and AC-AC), resonant converters, adjustable torque drives, field-oriented motor control, residential and industrial applications, utility applications, power supply applications.

EEC 580 Modern Digital Design (4-0-4). Prerequisite: Graduate standing. Overview of modern digital design methodology and CAD tools, VHDL description for combinational and sequential logic, VHDL description for state machine, VHDL description for RTL design, synthesis and implementation using CPLD/FPGA devices. No graduate credit for students who have completed EEC 480.

EEC 581 Computer Architecture (4-0-4). Prerequisite: Graduate standing. The design of high-performance computer systems, with emphasis on cost-performance tradeoff, performance evaluation, instruction set design, hardwired control-unit design, micro- and nano-programming, pipelining, memory hierarchy, and I/O interfaces.

EEC 586 Advanced Digital Systems Laboratory (0-4-2). (See Addenda - July 29, 2005) Prerequisite: EEC 580. Experiments and projects utilizing VHDL, modern EDA software tools

and CPLD/FPGA devices to design, synthesize, simulate, implement and test combinational circuits, sequential circuits and register-transfer-level systems. No graduate credit for students who have completed EEC 481.

EEC 601 Graduate Seminar (1-0-1). Prerequisite: Graduate standing. Invited experts from industry and academia present and discuss current issues and trends in research and the professional practice of electrical and computer engineering. Registration may be repeated for credit. Credits earned by registering for this seminar do not fulfill degree requirements. Graded S/F.

EEC 623 Software Quality Assurance and Testing (4-0-4). (See Addenda - July 29, 2005) Prerequisite: EEC 521. Software quality, software process, quality metrics, quality models, defects, test-case design, unit testing, integration testing, white-box testing, black-box testing, regression testing, Capability Maturity Model (CMM), and process improvement.

EEC 640 Advanced Control System Design (4-0-4). Prerequisite: EEC 510. Systematic approach of applying modern control design methods, such as digital control, adaptive control, and heuristic methods to practical design problems. Practical approaches to typical industrial problems, such as nonlinearity, control saturation, parasitic effects, chattering, and other challenges. Useful stability analysis techniques, such as the Circle Criterion and Popov's Criterion. Polynomial matrix interpolation and its applications in control and system identification. Design examples and assignments.

EEC 641 Multivariable Control (4-0-4). Prerequisite: EEC 510. Multi-input and multi-output control problems; robustness of control systems; singular value analysis; H-infinity estimation and control; controller order reduction.

EEC 642 System Identification (4-0-4). Prerequisite: EEC 510. Development of dynamic system models from basic laws of physics and identification of model parameters from system input-output measurements. Frequency and time-domain models. Design of persistently exciting input signals.

EEC 643 Nonlinear Systems (4-0-4). Prerequisite: EEC 510. State-space and frequency-domain analysis and design of nonlinear feedback systems. Methods include Liapunov's stability analysis, singular perturbations, describing functions, Popov's criteria, and circle criteria. Feedback linearization, variable structure, and sliding-mode control.

EEC 644 Optimal Control Systems (4-0-4). Prerequisite: EEC 510. Introduction to the principles and methods of the optimal control approach: performance measures; dynamic programming; calculus of variations; Pontryagin's Principle; optimal linear regulators; minimum-time and minimum-fuel problems; steepest descent; and quasilinearization methods for determining optimal trajectories.

EEC 645 Intelligent Control Systems (4-0-4). Prerequisite: EEC 510. Artificial intelligence techniques applied to control system design. Topics include fuzzy sets, artificial neural networks, methods for designing fuzzy-logic controllers and neural network controllers; application of computer-aided design techniques for designing fuzzy-logic and neural-network controllers.

EEC 650 Signal Detection and Estimation (4-0-4). Prerequisite: EEC 512. The classical theory of detection and estimation of signals in noise. Bayesian hypothesis testing, minimax hypothesis testing, Neyman-Pearson hypothesis testing, composite hypothesis testing, signal detection in discrete time, sequential detection. Nonparametric and robust detection parameter estimation, Bayesian estimation, maximum likelihood estimation, Kalman-Bucy filtering, linear estimation, Wiener-Kolmogorov filtering, applications to communications.

EEC 651 Digital Communications (4-0-4). Prerequisite: EEC 512. Basic digital communication techniques, including formatting and baseband transmission, bandpass modulation and demodulation, and synchronization. Advanced modulation techniques, such as power-efficient modulation, spectrally efficient modulation, coded modulation, and spread-spectrum modulation. Introduction to communication link analysis and block codes.

EEC 652 Error Control Coding (4-0-4). Prerequisite: EEC 651. Introduces the theory of error control coding for digital transmission in communications. Topics include groups, fields, GF(2), linear-block codes, cyclic codes, BCH codes, Reed-Solomon codes, convolutional codes, maximum likelihood decoding of convolutional codes, Viterbi algorithm, sequential decoding of convolutional codes, continuous-phase modulation codes, trellis-coded modulation, and turbo codes.

EEC 653 Information Theory (4-0-4). Prerequisite: EEC 512. Presents a coherent and unifying view of the concept of information, conveying a unique understanding of how it can be quantified and measured. Within this context, concepts and principles of information theory as they relate to applications in communication theory, statistics, probability theory, and the theory of investment are introduced.

EEC 654 Mobile Communications (4-0-4). Prerequisite: EEC 651. Cellular-mobile communication concepts and system-design fundamentals, mobile-radio propagation models, large-scale path loss, small-scale fading, multipath, modulation techniques for mobile radio, equalization, diversity, channel coding, speech coding, multiple access, wireless networking, wireless systems, and standards.

EEC 655 Satellite Communications (4-0-4). Prerequisite: EEC 651. Satellite channel, satellite-link analysis, satellite electronics, frequency division multiple access (FDMA), time division multiple access (TDMA), code division multiple access (CDMA), frequency-hopped communications, on-board processing, satellite cross-links, VSAT networks, mobile satellite networks.

EEC 673 Power Electronics and Electric Machines (4-0-4). Prerequisite: EEC 474 or EEC 574. Power electronic converters in combination with electric machines. Field-oriented induction-machine control; stability of induction machines under sine-wave supply; voltage-source inverter drives and current-source inverter drives.

EEC 680 High Performance Computer Architecture (4-0-4). Prerequisite: EEC 581. Architecture analysis and design from a systems perspective. Topics include memory system design, pipeline design techniques, vector computers, multiple processor systems, and multiprocessor algorithms.

EEC 681 Distributed Computing Systems (4-0-4). (See Addenda - July 29, 2005) Prerequisite: EEC 581. Overview of distributed computing systems. Topics include networking, interprocess communication, remote-procedure calling, name services, distributed time management, and file services. Some new technologies, including ATM networking, internetworks, multicast protocols, microkernel-based distributed operating systems, and distributed-shared memory, are discussed.

EEC 682 Computer Networks I (4-0-4). (See Addenda - July 29, 2005) Prerequisite: EEC 581. Network architectures, communication protocols; data link control, medium access control, LANS and MANS; network layer, TCP/IP.

EEC 683 Computer Networks II (4-0-4). (See Addenda - July 29, 2005) Prerequisite: EEC 682. Broadband networks, traffic characterization, admission and access control, switch architectures, congestion control. Emphasis on quantitative analysis and performance modeling.

EEC 684 Parallel Processing Systems (4-0-4). Prerequisite: EEC 581. Overview of parallel system organizations and parallel algorithms. Topics include memory structures for parallel systems, interconnection networks, SIMD/MIMD processing, parallel programming languages, mapping and scheduling, parallel algorithms, and case studies.

EEC 685 Modeling and Performance Evaluation of Computer Systems (4-0-4). (See Addenda - July 29, 2005) Prerequisites: EEC 581 and EEC 610. Evaluation of the performance of various computer systems through measurement, analytic modeling, and simulation

techniques. Topics include performance metrics, workload characterization, statistical modeling, hybrid techniques, and case studies.

[EEC 686 Advanced Digital Design \(4-0-4\)](#). Prerequisite: [EEC 581](#). Covers advanced topics in digital systems, including verification and simulation, test-vector generation, logic synthesis, behavioral synthesis, and design and development of data path and control path.

[EEC 687 Mobile Computing \(4-0-4\)](#). (See Addenda - July 29, 2005) Prerequisite: [EEC 581](#). Provides a comprehensive overview of mobile computing, which is likely to become a pervasive part of future computing infrastructures with technical advancements in wireless communication, mobility, and portability. Topics include mobile TCP/IP protocols, mobile ad hoc networks, mobile application architectures, system issues for mobile devices, and some pervasive and ubiquitous computing examples.

[EEC 693 Special Topics in Electrical Engineering \(4-0-4\)](#). Prerequisite: Permission of instructor. Advanced selected topics in electrical engineering. Offered on sufficient demand.

[EEC 696 Individual Problems in Electrical Engineering \(one to four credits\)](#). Prerequisite: Permission of instructor. Directed study on an individual problem under the supervision of a faculty member. Total credits for this course are limited to eight. Graded S/F.

[EEC 699 Master's Thesis \(one to nine credits\)](#).

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Cleveland State University

2121 Euclid Avenue, Cleveland, Ohio 44115

www.csuohio.edu 216.687.2000

Contact Webmanager

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Graduate Catalog 2004-2006

Master of Science in Mechanical Engineering

Department of Mechanical Engineering

Stilwell Hall 232
(216) 687-2567
www.csuohio.edu/mce/

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The Faculty

Professors:

Kalil A. Alkasab
John L. Frater
Rama S. R. Gorla
Mounir B. Ibrahim
Edward G. Keshock
Paul P. Lin, Chair
Jerzy T. Sawicki

Associate Professors:

William J. Atherton
Asuquo Ebiana
Earnest N. Poulos
Majid Rashidi

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Introduction

The Mechanical Engineering Department offers a program leading to the Master of Science in Mechanical Engineering. Major areas of specialization within the department are:

- Thermal-Fluid Mechanics and Energy Systems
- Mechanical Systems and Design
- Dynamics and Control

The program structure is flexible and may be tailored to individual career goals in order to meet the needs of the broad spectrum of engineers in general, and particularly those in the highly industrialized Greater Cleveland area. Numerous and continuous opportunities exist for exposure to the engineering problems and developments within the industrial/research complex of Northeastern Ohio. In addition to substantial interdisciplinary research activities occurring across the College of Engineering, faculty and students participate in research programs of the Department of Energy, the NASA Glenn Research Center, and local industry. The educational programs of the department are designed to stimulate creativity, to provide a deep understanding of the basic physical phenomena involved in mechanical systems, and to provide an ability to use modern techniques in the analysis, control, and design of mechanisms, machines, and fluid/thermal systems.

Students may enter the program immediately after receiving a bachelor's degree or after a period of employment in industry. In either case students may pursue their studies on a full-time or part-time basis. Classes are scheduled in late-afternoon and evening hours to accommodate both part-time students employed in the Cleveland area and students pursuing the master's degree on a full-time basis. Classes also are available through distance-learning technology, including interactive, live video, and asynchronous Internet systems.

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Faculty Research Activities

The department has excellent research facilities, including one of the state's largest anechoic chambers, state-of-the-art laboratories of energy and power systems, Stirling engine, wind tunnel, machine vision and system monitoring, rotor-bearing dynamics and diagnostics, and machine systems. The Fenn College of Engineering's computer network, workstations, PC laboratory, and associated software such as Matlab, AutoCAD and SolidWorks, are available for research and academic activity.

Faculty research areas include:

- Computer modeling of manufacturing processes
- Analysis and modeling of gear trains
- Turbomachinery analysis, design, and optimization
- Rotor-bearing dynamics and diagnostics
- Magnetic-bearing dynamics and diagnostics
- Magnetic bearings
- Prediction and control of vibrations in machinery
- Intelligent system monitoring
- Machine vision and 3D optical measurements
- Gravitational effects on two-phase flow
- Spray evaporative cooling
- Enhanced heat transfer
- Non-Newtonian fluid mechanics/heat transfer
- Computational fluid dynamics and heat transfer
- Combustion

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Financial Assistance

The department offers a limited number of graduate assistantships and research assistantships. Additional opportunities for research assistantships exist through the Ohio Aerospace Institute. Information about these assistantships may be obtained by contacting the Department of Mechanical Engineering at (216) 687-2567.

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Career Information

Upon successful completion of program requirements, students will have a solid education based on the fundamentals of engineering science, and will be prepared for practical applications of engineering design, analysis, and research. Graduates are, therefore, well prepared for employment in industry or research laboratories.

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Admission Information

Admission to the graduate program in mechanical engineering is open to qualified students with a baccalaureate degree in mechanical engineering or other fields of engineering. A minimum baccalaureate **grade-point** average of 3.00 (or 2.75 for students from EAC/ABET-accredited programs) normally is required. Students without a degree in mechanical engineering are required to take prescribed undergraduate courses in mechanical engineering to ensure adequate preparation for the required graduate-level courses. These courses are available both day and evening from the Mechanical Engineering Department and other departments in the University. Undergraduate courses taken to remediate deficiencies do not count toward graduate degree requirements.

The GRE General section is required if one or more of the following conditions is true:

- The undergraduate degree was awarded by a college or university outside of the United States or Canada, or by a Canadian institution not accredited by the Canadian Engineering Accreditation Board of the Canadian Council of Professional Engineers.
- An unaccredited college or university awarded the undergraduate degree.
- The student's undergraduate cumulative **grade-point** average is below 2.75.
- The year of the baccalaureate degree precedes the date of application to the College of Graduate Studies by more than six years; however, in this case, the examination requirement may be waived, with program approval, if the applicant's undergraduate **grade-point** average is 3.00 or above.

To facilitate the admission process, it is strongly recommended that applicants use the online application system at www.csuohio.edu/admissions/gradForm.html. The processing time for paper application forms is longer.

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Degree Requirements

Within the framework of the College of Engineering requirements for the M.S. degree, the Department of Mechanical Engineering offers two program options. The thesis option requires a minimum 30 credit hours of course work and master's thesis research. The non-thesis option requires a minimum 33 credit hours of course work and Master's project. The Department of Mechanical Engineering further restricts the content of each student's master's program to contain:

1. A minimum of 20 credit hours of course work in the department's 500- or 600-level courses, which includes a minimum of four credit hours of advanced engineering analysis or applied mathematics. (Completion of one course from among MCE 501, MCE 504, MCE 509, or approved substitutes meets this requirement.)
2. A maximum of nine credit hours of graduate course work transferred from other universities.

The graduate program must include thesis or project work on a topic approved by the student's graduate advisor and thesis committee. The project or thesis work typically should start only after the student completes 16 credit hours or more of approved course work at the master's level. A thesis proposal approval form must be submitted before registering for [MCE 699](#) (thesis).

At least one semester prior to graduation, an application-for-graduation form must be submitted to the department.

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Thesis Option

With the thesis option, a student plans and carries out a research project that is expected to be published in a refereed journal. The requirements are:

1. A minimum of 30 credit hours with a [grade-point](#) average of 3.00 or better. This includes a minimum of 24 credit hours of course work and at least six credit hours toward the master's thesis.
2. Selection of a major advisor and an advisory committee and approval of a program of study and the research project by the major advisor and advisory committee.
3. Completion of all requirements under Degree Requirements above.
4. Continuous enrollment from the time the research plan is approved until the thesis is defended.
5. Defense of the thesis before the advisory committee.

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Non-Thesis Option

The non-thesis option is intended only for those students who already have had the equivalent of a thesis experience. The evaluation of the equivalence of such an experience must be approved by both the student's advisor and the department chair. Students in this option earn the M.S. in Mechanical Engineering degree by completing the following requirements:

1. A minimum of 33 credit hours with a [grade-point](#) average of 3.00 or better. This includes a minimum of 28 credit hours of course work and at least five credit hours toward the master's project.
2. Selection of a major advisor to supervise and approve a program of study.
3. Fulfillment of all requirements under Degree Requirements above.
4. Completion of the master's project report for review by the major advisor and two additional faculty members of the department.

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Courses (See Addenda)

[MCE 501 Mechanical Engineering Analysis \(4-0-4\)](#). Mathematical modeling/analysis of physical systems; boundary value problems. Fourier series and integrals; diffusion equation, Sturm-Liouville theory; Wave equation, D'Alembert's solution; Bessel and Legendre functions.

MCE 503 System Modeling (4-0-4). (See Addenda - July 29, 2005) Modeling and analysis of dynamic systems with interacting energy domains: fluids, thermal, electrical, and mechanical; formulation of linear and nonlinear state equations; unified treatment of diverse systems with bond graphs.

MCE 504 Continuum Mechanics (4-0-4). General discussion of Cartesian tensors. Application to the mechanics of linear and nonlinear continua. Unified analysis of stress and deformations in solids and fluids.

MCE 509 Numerical Methods in Mechanical Engineering (4-0-4). Advanced numerical methods for solving parabolic, elliptic, and hyperbolic partial differential equations; convergence and stability criteria; grid generation; special mesh systems and orthogonal coordinate systems; computer applications.

MCE 512 Advanced Vibrations I (4-0-4). Study of multi-degree-of-freedom and continuous systems; modal analysis and modal summation methods; wave-equation solution for strings, rods, beams, and plates; approximate and energy-method solutions; introduction to finite-element-solution techniques.

MCE 521 Applied Thermodynamics (4-0-4). Availability analysis (exergy); irreversibility; combustion; applications to internal and external combustion engine, vapor power, and refrigeration cycles.

MCE 544 Applied Combustion Processes (4-0-4). Review of chemical kinetics; conservation equation for multicomponent reacting systems; premixed laminar and turbulent flames.

MCE 545 Modern Controls (4-0-4). Classical design of control systems; state-space analysis; state-space design of regulator systems; linear quadratic regulator problems; optimal observer design; computer simulation of control systems.

MCE 546 Principles of Turbomachinery and Applications (4-0-4). Derivation of fluid and thermodynamic relations along with passage losses for turbomachinery. Applications include analysis and design of axial and radial flow turbines, compressors, and pumps.

MCE 550 Advanced Dynamics (4-0-4). Lagrangian dynamics; Hamilton's and D'Alembert's principles; autonomous and nonautonomous systems; behavior of conservative and non-conservative systems; approximate solutions; perturbation methods of solution; study of damping.

MCE 565 Advanced Machine Analysis (4-0-4). Finite-element analysis of stresses and deflections in complex mechanical systems under static and dynamic loading. Integrating modeling techniques with two- and three-dimensional CAD systems for inputting geometric data. Comparisons of finite-element results with theoretical and empirical results.

MCE 567 Lubrication and Bearing Design (4-0-4). Study of the theoretical aspects of elastohydrodynamic, hydro-dynamic, and hydrostatic lubrication regimes. Design and analysis of bearings for industrial and aerospace applications.

MCE 580 Finite Element Analysis I (4-0-4). Introduction to calculus of variations, virtual work, complementary virtual work, potential energy, complementary energy, and Castigliano theorems; approximate methods; finite-element development and applications.

MCE 610 Computational Fluid Flow and Heat Transfer (4-0-4). Prerequisite: MCE 501. Application of advanced numerical methods to current problems in the fluid-flow and heat-transfer areas; internal and external incompressible and compressible flows; numerical methods for inviscid flow equations; multigrid procedure; computer applications.

MCE 618 Engineering Plasticity (4-0-4). Prerequisite: MCE 504. Yield criteria and application to elastic-plastic and rigid-plastic deformation; flow stress; plastic deformation

processes; tribology; thermal effects; analysis by slab method, upper and lower bound on power, and finite element methods.

MCE 622 Energy Conversion (4-0-4). Prerequisite: MCE 521. Nuclear, solar, and chemical-energy conversion techniques. Thermodynamics of power cycles and systems; thermoelectric devices; thermionic generators; MHD systems; fuel cells; photovoltaic cells.

MCE 632 Gas Dynamics (4-0-4). Pre- or co-requisite: MCE 501. Generalized one-, two-, and three-dimensional compressible flows, normal shocks, oblique shocks, flow with friction and heat transfer, method of characteristics, real gas effects.

MCE 638 Viscous Flow I (4-0-4). Prerequisite: MCE 501. Derivation and exact solutions of Navier-Stokes equations governing incompressible, laminar viscous flow; applications include non-steady flow, low Reynolds numbers flows, parallel flows, and laminar boundary layer; classification of fluid behavior, rheometry, and viscoelastic and time-dependent properties.

MCE 639 Viscous Flow II (4-0-4). Prerequisite: MCE 638. Derivation and formulation of compressible fluid-flow equations in both integral and differential forms; applications include exact solutions with and without pressure gradients; introduction to turbulence and modeling of turbulent boundary layers; laminar and turbulent flows of non-Newtonian fluids; internal and external flows; boundary layer equations for momentum and energy transport.

MCE 641 Convection Heat Transfer (4-0-4). Prerequisite: MCE 501. Convective processes involving heat, momentum, and mass transfer, and their applications. Laminar and turbulent convection heat transfer; internal and external flows.

MCE 642 Advanced Conduction Heat Transfer (4-0-4). Prerequisite: MCE 501. Heat transfer by conduction in steady, transient, and periodic states in solids for one-, two-, and three-dimensional problems; applications of various analytical and numerical methods.

MCE 643 Radiation Heat Transfer (4-0-4). Prerequisite: MCE 501. Physics of the thermal radiation process; surface properties; exchange factors and networks for heat transfer between surfaces; characteristics of emission and absorption of flames, gases, and the atmosphere; solar radiation.

MCE 644 Heat Transfer with Phase Change (4-0-4). Prerequisite: MCE 641. Heat transfer in phase change; nucleate and film boiling mechanisms; pool and forced-convection boiling; two-phase flow, flow regimes, and transitions; application to cryogenics and nuclear reactors.

MCE 652 Robotics and Machine Vision (4-0-4). Prerequisite: MCE 501 or MCE 504. Analysis and design of robotic systems used in manufacturing; sensing technology; machine vision; digital image processing; image analysis; robot intelligence.

MCE 654 Computer Aided Design and Optimization (4-0-4). Prerequisite: MCE 501 or 504. Optimum design problem formulation, optimum design concepts, numerical methods for unconstrained and constrained optimum designs; three-dimensional graphics techniques, non-traditional computing techniques, such as artificial neural networks and fuzzy logic, which provide a different approach in engineering design and analysis.

MCE 655 Acoustics (4-0-4). Prerequisite: MCE 501. Elements of theoretical acoustics: plane and spherical acoustic waves; transmission and absorption of acoustic waves; theory of resonators and filters; application of theory to noise problems in mechanical and air-moving equipment.

MCE 660 Lubrication (4-0-4). Prerequisite: MCE 501. Hydrodynamic lubrication, self-excited instability of hydrodynamic bearings, design optimization. Hydrostatic lubrication with design optimization. Elastohydro-dynamic lubrication, calculation of Hertzian contact stresses, and deformation in rolling-contact bearings.

MCE 666 Advanced Control of Mechanical Systems (4-0-4). Prerequisite: MCE 503. Design and analysis of multivariable systems using state-variable techniques; introduction to system modeling, observability, controllability, stability, Z transforms, and controller design.

MCE 670 Turbomachinery Rotordynamics (4-0-4). Prerequisite: MCE 512. Introduces students to a collection of phenomena and related analysis techniques associated with the dynamics of rotating machinery, e.g., turbines, compressors, pumps, power transmission shafting. Development of adequate, computationally oriented component and system models for the analysis of rotors.

MCE 680 Finite Element Analysis II (4-0-4). Prerequisite: MCE 580. Study of two- and three-dimensional continua; application of finite-element methods to mechanical engineering analysis and design problems.

MCE 691 Special Topics in Manufacturing Engineering (one to three credits). Prerequisite: Permission of instructor. Offered via the Internet as part of the Ohio World-Class Manufacturing Consortium. Each course is assigned a different section number and title. Students must see the World-Class Manufacturing Consortium Coordinator in the Mechanical Engineering Department for permission to enroll.

MCE 693 Selected Topics in Mechanical Engineering (4-0-4). Topics of current interest to the mechanical engineering profession. Total credits in MCE 693 should not exceed eight.

MCE 696 Directed Study (one to four credits). Prerequisite: Permission of instructor. Directed study of an individual problem or subject area under the supervision of a faculty member. Total credits for this course are limited to four.

MCE 698 Master's Project in Mechanical Engineering (one to five credits) A project involving design and analysis or theoretical investigation of a topic in mechanical engineering approved by the graduate advisor. A written report is required.

MCE 699 Master's Thesis (one to six credits). Independent investigation by the student selected from an area of mechanical engineering that results in a significant contribution to the field. This may be analytical, computational, or experimental and needs the approval of the graduate advisor and the thesis committee. A bound copy of the thesis must be submitted to the department.

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Cleveland State University

2121 Euclid Avenue, Cleveland, Ohio 44115

www.csuohio.edu 216.687.2000

Contact Webmanager

Cleveland State University

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2121 Euclid Avenue, Cleveland, Ohio

44115 • 216.687.2000

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College of Graduate Studies

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Graduate Catalog 2004-2006

Master of Arts in English

Department of English

Rhodes Tower 1815
 (216) 687-3951
www.csuohio.edu/english/maeng.htm

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The Faculty

Professors:

Earl R. Anderson
 John C. Gerlach, Retired
 John A. C. Greppin
 Glending Olson, Emeritus
 David Richardson, Emeritus

Associate Professors:

Nuala Archer
 Louis Barbato, Chair
 Rachel Carnell, Director of Graduate Studies
 Gary R. Dyer
 Gary Engle
 Jeff Ford
 Adrienne Gosselin
 Jennifer Jeffers
 Ted Lardner
 David Larson
 Sheila Schwartz

Assistant Professors:

Mike Geither
 Jeff Karem
 James Marino

Coordinator of Creative Writing:

Neal Chandler

Director of the Writing Center:

Mary Murray

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Introduction

The Master of Arts in English offers two concentrations, literature and creative writing. The literature concentration emphasizes research and the application of various critical approaches to problems in literature and composition. The creative writing concentration emphasizes professional writing and the analysis of literary works from the point of view of the practitioner. Both concentrations provide graduate students with course work in practical criticism, electives in literature and linguistics, and opportunities for the study of composition theory and the practice of teaching writing to beginning students.

The program is designed to meet the needs of part-time and full-time students. Core courses and graduate seminars are offered in the evenings. Students are advised to take their core-course requirements during their first two semesters of graduate study.

A departmental Committee on Graduate Studies, chaired by the Director of Graduate Studies, governs the Master of Arts program in English. The Committee on Graduate Studies administers admission of new students, appointment of graduate assistants, selection of Andrews Award winners, student petitions, and policy issues concerning the Master of Arts curriculum.

Prospective and current students should consult the Handbook for Graduate Studies in English at www.csuohio.edu/english/grhandbook.htm.

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Faculty Research and Resources

The graduate faculty of the English Department have published over 30 books and several hundred major articles in the fields of literary scholarship, linguistics, and critical theory. The range of research interests is illustrated by a partial list of books published by the faculty. Medieval and Renaissance studies are represented by Glending Olson's *Literature as Recreation in the Later Middle Ages* (Cornell University Press), Earl Anderson's *Cynewulf* (Fairleigh Dickinson University Press), David Richardson's *The Spenser Encyclopedia* (University of Toronto Press), and Richardson's four volumes of *Sixteenth-Century British Nondramatic Writers* in the *Gale Research Dictionary of Literary Biography*. Nineteenth-century and modern studies are represented by Gary Dyer's *British Satire and the Politics of Style* (Cambridge University Press), Adrienne Gosselin's *Multicultural Detective Fiction: Murder from the "Other" Side* (Garland), Jennifer Jeffers' *The Irish Novel at the End of the Twentieth Century: Gender, Bodies, and Power* (Palgrave), and Jeff Karem's *The Romance of Authenticity* (University of Virginia Press). Critical theory is represented by John Gerlach's *Toward the End: Closure and Structure in the American Short Story* (University of Alabama Press), Earl Anderson's *Grammar of Iconism* (Fairleigh Dickinson University Press) and *Folk-Taxonomies in Early English* (Fairleigh Dickinson University Press), and Jennifer Jeffers' *Uncharted Space: The End of Narrative* (Peter Lang Publishers). Linguistics and philology are represented by John Greppin's *Medieval Arabic-Armenian Botanical Dictionary* (Vienna: Mechitaristen-Buchdruckerei), *The Diffusion of Greek Medicine into the Middle East and the Caucasus* (Caravan), and 14 other books.

The creative-writing faculty have published poetry, fiction, and creative non-fiction in dozens of creative-writing periodicals. Book titles include, in the field of fiction, Sheila Schwartz's *Imagine a Great White Light*, winner of the Pushcart Editor's Book Award, and Neal Chandler's *Benediction* (University of Utah Press), and, in the field of poetry, Nuala Archer's *From a Mobile Home* (Galway: Salmon Press).

The English Department is home to The Cleveland State University Poetry Center, which has published more than 125 poetry books since 1971 and averages three new books a year. Recent publications include Gaspar Pedro Gonzalez's *A Dry Season: Poems in Q'anjob'al Maya* (one of the few books of contemporary Mayan poetry to be published anywhere), Alison Luterman's *The Largest Possible Life*, and Ohio poet Nin Andrews' *The Book of Orgasms*. The Poetry Center has won several national and regional awards for its publications. Carol Potter's *Short History of Pets* won the 2001 *Balconnes Prize for Poetry*. Jared Carter's *After the Rain* won the 1995 *Poets' Prize*. In 1996, The Poetry Center's *Off the Page*, a videotape of performance poetry, won the Ohio Board of Regents' W. E. B. DuBois Award for Service to the Community.

The English Department houses three journals: the *Annual of Armenian Linguistics*; *Raft: a Journal of Armenian Literature and Criticism*; and *Whiskey Island*, a student-edited literary magazine.

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Financial Assistance

Graduate assistantships in English provide students with an opportunity to teach in the Writing Center, assist faculty on editorial or other academic projects, and in some cases to teach Freshman English classes. All graduate assistantships provide tuition waivers and a stipend. A few tuition waivers may be available for part-time students. Students must apply by February 1 in order to be considered for a graduate assistantship in the following academic year. The department also provides tuition scholarships as prizes in annual creative-writing contests and an annual Andrews Award, a cash prize (normally \$1,000) to assist a graduate student in the completion of a thesis of exceptional merit.

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Career Information

Students who are pursuing the M.A. in English as a means of enhancing their teaching careers should select the literature concentration but also should take ENG 512 Craft of Literature. Students who are taking the M.A. as preparation for doctoral study in English should select the literature concentration, should take as many research seminars (ENG 695) as possible, and should take ENG 506 Composition Theory in order to enhance their eligibility for doctoral teaching assistantships at other universities. This course of study also is recommended for students who are preparing for careers teaching writing or administering writing centers in community colleges and schools. Cross-listed electives in linguistics are offered for students who are pursuing Teaching English to Speakers of Other Languages (TESOL) endorsement concurrently with the M.A. in English. The creative writing concentration is recommended for students who desire increased competitiveness in creative and professional writing fields or in allied careers in editing, communications, and public relations.

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Admissions Information

To be admitted to the M.A. program in English, an applicant must have a baccalaureate degree from an accredited college or university with an overall grade-point average of 2.75 or higher and a 3.00 average in courses in English. Applicants must provide transcripts of all previous college work, two letters of recommendation, and a writing sample. Applicants seeking admission to the literature concentration should submit a sample of academic writing, normally a research paper from an undergraduate literature course. Applicants seeking admission to the creative writing concentration should submit a portfolio of their creative work in addition to an analytical paper. Admission to the creative writing concentration is a separate decision made by the creative writing faculty once a student has been admitted into the M.A. program.

An applicant whose undergraduate major was in a field other than English may be required to take a certain number of undergraduate English courses as a condition for admission to the M.A. program. These courses do not count toward degree requirements.

To facilitate the admission process, it is strongly recommended that applicants use the online application system at www.csuohio.edu/admissions/gradForm.html. The processing time for paper application forms is longer.

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Cross-Registration

Students may petition the Committee on Graduate Studies to take up to eight elective credits in graduate courses outside the English Department, in cases where such courses meet the students' particular research needs. A student combining TESOL endorsement with the M.A. in English, for example, may be allowed to count graduate-level Methods in TESOL courses as

English electives.

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Literature Concentration:

[Degree Requirements](#)

(33 credits minimum)

1. Core courses (eight credits): [ENG 510](#) and [ENG 511](#).
2. Graduate seminars (eight credits): [ENG 695](#) (taken twice, with change of topic).
3. Electives (12 credits): courses numbered [ENG 506](#) and higher; at least one additional graduate seminar is recommended.
4. Thesis (five credits): [ENG 699](#). To earn these credits, the student must prepare an acceptable master's thesis of 30 to 50 pages, written under the direction of two English [graduate faculty](#) members.
5. A successful master's examination based on the student's thesis topic.

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Creative Writing Concentration:

[Degree Requirements](#)

(33 credits minimum)

1. Core courses (eight credits): [ENG 510](#) and [ENG 512](#).
2. Graduate seminars (eight credits): [ENG 695](#) (taken twice, with change of topic); creative writing students may substitute [ENG 535](#) or another modern or contemporary literature course for one of the 695 seminars.
3. Electives (12 credits): courses numbered [ENG 506](#) and higher; at least one creative writing course ([ENG 580](#) or [ENG 602](#)) is recommended.
4. Thesis (five credits): [ENG 699](#). To earn these credits, the student must be accepted into the creative writing program and must prepare a successful master's creative writing project under the direction of two English [graduate faculty](#) members, viz., a collection of short stories, essays, or poems, or a play or part of a novel, judged to be of high quality.
5. A successful master's examination based on the student's creative writing project.

[Composition course requirements for teaching assistants](#): Graduate students who are beginning as teaching assistants must take [ENG 506](#) (four credits) and [ENG 507](#) (one credit). Graduate students who completed [ENG 308](#) Composition Theory as undergraduates are required to attend [ENG 506](#) sessions in fall semester but should not register for credit for this course. Graduate students who completed four credits of [ENG 309](#) Writing Center Practicum as undergraduates are required to attend [ENG 507](#) workshops in fall semester but should not register for credit for this course.

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[Courses](#) (See Addenda)

ENG 503 Intermediate English as a Second Language Speaking Skills (4-0-4). (See Addenda - July 05, 2005) Spoken English for non-native, international graduate students. Practice in speaking and listening to American English. Recognition and production of sounds, rhythm, and intonation patterns at an intermediate level. Development of competence and confidence in listening comprehension and speaking skills in both academic and general conversation within supportive structured and non-structured situations.

ENG 504 Communication Skills for International Teaching Assistants (4-0-4). (See Addenda - July 05, 2005) Designed to improve the communication skills of international teaching assistants. Focus is on improving pronunciation and language use in the classroom, general teaching skills, and understanding the American educational system.

ENG 506 Composition Theory (4-0-4). Advanced study in expository writing: writing processes, reading and writing, rhetoric, evaluation, and pedagogy. Offered fall semester. Required of beginning teaching assistants, except for those who took ENG 308 Composition Theory as undergraduates.

ENG 507 Workshop in Teaching (1-5-1). Relation of composition theory to the practice of tutoring and teaching. Required for teaching assistants, except for those who took ENG 309 Writing Center Practicum as undergraduates. Meets once a week during fall and spring semesters. If credits are taken in fall semester, they will be graded T, with the grade assigned at the end of spring semester. Students may, if they wish, begin participating in ENG 507 in fall semester and register for ENG 507 credits in spring semester rather than in fall. May be taken S/F.

ENG 508 Writing Institute For Teachers (two to four credits). Workshop and practicum in the teaching of writing, exploring current trends such as whole language approaches, writing across the curriculum, or writing about the arts. When offered in summer as SWIFT, this course is presented in collaboration with the Great Lakes Theater Festival.

ENG 509 Technical Writing (two or three credits). Preparation of reports, scientific papers, and other genres of technical writing, with emphasis on audience, voice, the proper formatting of data, and the integration of text with graphic and visual material. When offered for three credits, the course includes a major writing project as well as shorter assignments.

ENG 510 Practical Criticism (4-0-4). Essentials of practical criticism with emphasis on close reading of selected masterworks that represent various genres and historical contexts. Core course required of all M.A. candidates. Offered fall semester.

ENG 511 Critical Approaches to Literature (4-0-4). Critical approaches to literature and the theories that underlie them, including formalist, reader response, deconstructionist, new historicist, feminist, and other post-structuralist approaches. Core course required for M.A. candidates in the literature concentration. Offered spring semester.

ENG 512 Craft of Literature (4-0-4). Genres of fiction, poetry, and drama studied with an emphasis on the craft of the practitioner. Literary texts are used to demonstrate the formal range of the genres studied. Craft exercises are used to explicate the operations and assumptions underlying literary techniques. Core course required for M.A. candidates in the creative writing concentration. Offered spring semester.

ENG 513 Language of Literature (4-0-4). Literary discourse; topics center on the structure and form of literary expressiveness; option and choice; linguistic form as the expression of meaning. Counts as an introductory linguistics course in the TESOL endorsement program.

ENG 514 Studies in Linguistics (4-0-4). Topics include historical linguistics, history of the English language, grammar, sociolinguistics, or analysis of an uncommonly taught language such as Sanskrit or Armenian. May be repeated with change of topic. Courses count as TESOL endorsement electives. Note: when the topic is Modern English Grammar, ENG 514 counts as an introductory linguistics course in the TESOL endorsement program.

ENG 515 Studies in Rhetoric (4-0-4). Authors, themes, genres, or periods in the theory and practice of rhetoric.

ENG 516 Style, Voice, and Persona (4-0-4). Experiments in the deliberate creation of authorial voice and persona through the manipulation of linguistic tools such as diction, syntax, and punctuation.

ENG 531 Studies in Medieval Literature (4-0-4). Topics include Arthurian tradition, women and writing in the Middle Ages, Chaucer, Malory, or courses in medieval genres or themes. May be repeated with change of topic.

ENG 532 Studies in Renaissance Literature (4-0-4). Sixteenth- and 17th-century authors, genres, themes, or movements including humanism, the Reformation, metaphysical and cavalier poetry, scientific empiricism, and neo-classicism. May be repeated with change of topic.

ENG 533 Studies in Restoration and 18th-Century Literature (4-0-4). Authors, genres, themes, or movements in 18th-century poetry, fiction, and drama. Topics include the Enlightenment, satire, rise of the novel, and neo-classical and pre-Romantic poetry. May be repeated with change of topic.

ENG 534 Studies in 19th-Century British Literature (4-0-4). Authors, genres, themes, or movements in 19th-century poetry, fiction, and drama. Possible topics include Romantic-era women writers, the literature of British imperialism, and the fiction of Jane Austen. May be taken up to three times with change of topic.

ENG 535 Studies in 20th-Century Literature (4-0-4). Modern and contemporary authors, genres, themes, or movements. May be repeated with change of topic.

ENG 545 Studies in American Literature (4-0-4). Authors, genres, themes, or movements of significance in American literature. May be repeated with change of topic.

ENG 547 Studies in African-American Literature (4-0-4). Authors, themes, or movements of significance in African-American literature. Topics include slave narratives, Harlem renaissance, literature of the 1950s, and African-American women authors. May be repeated with change of topic.

ENG 548 Studies in Multicultural Literature (4-0-4). Authors, genres, themes, or movements representing the ethnic diversity of modern American literature. May be repeated with change of topic.

ENG 553 Studies in Themes, Genres, or Individual Works of Literature (two to four credits). Literary themes, genres, or works significant in British, American, European, or world literature. Topics in the past have included European Romanticism, the Faust theme, and Literature and Science. May be repeated with change of topic.

ENG 563 Gender Issues in Literature (4-0-4). Studies in gender theory and gender issues in literature. Topics may include contemporary feminist themes; the intersection of gender, race, and class; the relationship of gender to voice; technique and genre; and how questions of language are linked to these issues. May be repeated with change of topic.

ENG 575 Major Author (4-0-4). Intensive study of a single major author. May be repeated with change of topic.

ENG 580 Imagination Conference (4-0-4). Prerequisite: Permission of instructor, based on manuscript submission. Intensive five-day summer workshop with visiting writers (fiction, poetry, and creative non-fiction); “craft” analyses of creative writing. Students complete a manuscript at the end of the semester as well as an essay about technical or craft elements. In addition to tuition, students are charged a Workshop and Materials Fee. Additional information is available at the Imagination Conference web site at www.csuohio.edu/poetrycenter/imagination. May be repeated with change of topic.

[ENG 596 Independent Study \(one to four credits\)](#). Prerequisite: Prior written approval from Graduate Committee. Study of a topic not offered as a regular course, under the supervision of a graduate faculty member. The total of ENG 596 course work may not exceed eight credits.

[ENG 602 Creative Writing \(4-0-4\)](#). Prerequisite: Admission to the creative writing concentration or permission of instructor. Graduate-level work in the writing of poetry, fiction, non-fiction, and drama. May be repeated with change of topic.

[ENG 695 Graduate Seminar \(4-0-4\)](#). Study of an important topic in literary or cultural history, criticism, or rhetoric, with special emphasis on methods of analysis and research. May be repeated with change of topic.

[ENG 699 Thesis \(one to four credits, repeated for a minimum total of five credits\)](#). Writing of a Master's Project under the direction of a faculty member. Required for all M.A. degree candidates.

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College of Graduate Studies

Program Listings

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 - **Engineering Mechanics**
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Graduate Catalog 2004-2006

Master of Science in Engineering Mechanics

An interdisciplinary program administered by the Department of Civil and Environmental Engineering

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Department of Civil and Environmental Engineering

Stilwell Hall 107

(216) 687-2400

www.csuohio.edu/civileng/MS.htm

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The Faculty

The Engineering Mechanics program is interdisciplinary in subject areas. Faculty members participate from the departments of Chemical, Civil and Environmental, and Mechanical Engineering.

Chemical Engineering

Professor:

Surendra N. Tewari

Civil Engineering

Professors:

Paul X. Bellini
Paul A. Bosela
Stephen F. Duffy

John Hemann, Emeritus

Associate Professor:

Norbert J. Delatte

Mechanical Engineering

Professors:

John L. Frater
Rama S. R. Gorla
Paul P. Lin

Associate Professor:

Majid Rashidi

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Introduction

The objective of the degree program is to train students in the analytical and computational methods of structural mechanics, the analysis of the mechanical behavior of solids, the fundamentals of material science, and the processing of materials. Recent advances in computational solid mechanics with computer-based algorithms have revolutionized the ability to simulate intelligently both linear and nonlinear structural phenomena. The engineering of advanced materials requires expertise ranging from stress analysis to materials science. Due to this diversity, the program is interdisciplinary in nature with contributions from the Chemical, Civil and Environmental, and Mechanical Engineering graduate programs. It also prepares students for continued study in the Doctor of Engineering program. Two areas of specialization are available:

1. Structural Mechanics
2. Mechanics and Materials

The Structural Mechanics track considers analytical and computational approaches to mechanics and materials. Numerical formulations and computer simulations of basic structural and material phenomena from a stress/strain viewpoint are emphasized. The Mechanics and Materials track concentrates on the material science aspects of materials, including the laboratory testing and development and investigation of new engineered materials. All students must complete a common set of core courses specified below.

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Faculty Research

Students may become active participants in the following areas of faculty research:

- Research in nonlinear finite-element analysis, including the development of automatic incremental algorithms and the formulation of advanced shell-element capabilities.
- Deformation processing of materials, including computer simulation of forging, rolling, and extrusion.
- Non-Destructive Evaluation (NDE) of material properties, including location and size of flaws, voids, and impurities; materials include concrete, polymer, matrix, and ceramic composites.
- Solidification processing, development of elevated temperature materials, atomization-consolidation, and evaluation of powder metallurgy superalloys.
- Development of optimal methods for vapor-phase lubrication of metals, ceramics, and composites.
- Structural reliability and probabilistic mechanics, inelastic deformation, analysis of powdered metals, metal matrix composites, and ceramic matrix composites.
- Construction materials—high-performance concrete, concrete paving materials and tests, performance of materials, composites.

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Facilities

New laboratory facilities are available as part of the renovation of [Stilwell Hall](#). A strength of materials laboratory, an experimental stress lab, a materials laboratory, and concrete mixing and testing lab are included. The Engineering College has a scanning electron microscope, an X-ray diffraction system, an ultrasonic testing facility, four tension-compression testing machines, a computer-controlled MTS dynamic/fatigue test machine, and various NDE Systems.

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Financial Assistance

Graduate teaching and research assistantships are available to qualified students. Assistants receive tuition support and a stipend. Information about [assistantships](#) may be obtained by contacting the Civil and Environmental Engineering Department.

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Admission Information

Students with undergraduate degrees in civil or mechanical engineering may be admitted directly to the Structural Mechanics track. Students with undergraduate degrees in chemical, civil, mechanical, or materials engineering may be admitted directly to the Mechanics and Materials track. Students with degrees in other areas of engineering or science may qualify for admission after completing prerequisite courses. A minimum baccalaureate [grade-point](#) average of 2.75 normally is required.

The [GRE](#) General section is required if one or more of the following conditions is true:

- The undergraduate degree was awarded by a college or university outside of the United States, or by a Canadian institution not accredited by the Canadian Engineering [Accreditation Board](#) of the Canadian Council of Professional Engineers.
- An unaccredited college or university awarded the undergraduate degree.
- The student's undergraduate cumulative [grade-point](#) average is below 2.75.
- The year of the baccalaureate degree precedes the date of application to the [College of Graduate Studies](#) by more than six years; however, in this case, the examination requirement may be waived, with program approval, if the applicant's undergraduate [grade-point](#) average is 3.00 or above.

If the [GRE](#) is required, a minimum score at the 80th percentile on the Quantitative section normally is required.

International students should refer to the section earlier in this Catalog for information on testing requirements to demonstrate English-language proficiency.

To facilitate the admission process, it is strongly recommended that applicants use the online application system at www.csuohio.edu/admissions/gradForm.html. The processing time for paper [application forms](#) is longer.

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Degree Requirements

In addition to the [College of Graduate Studies](#) degree requirements, students in either track must satisfy the following requirements:

1. 30 credit hours are required for the degree.
2. A student must complete the following core courses:

[Structural Mechanics Track](#)

[MME 510](#) Structure of Materials

[MME 511](#) Matrix Methods of Structural Analysis

MME 512 Finite Element Analysis I

MME 513 Advanced Strength of Materials

MME 604 Elasticity

[Mechanics and Materials Track](#)

MME 510 Structure of Materials

MME 513 Advanced Strength of Materials

MME 524 Nondestructive Evaluation

MME 604 Elasticity

3. With an advisor's approval, a maximum of six credits of 400-level courses that are not offered by the departments of Chemical, Civil and Environmental, and Mechanical Engineering may be applied toward the degree. The remaining elective courses are selected from engineering courses numbered 500 and above, with advisor approval. Most MME courses are cross-listed with existing courses in the Chemical, Civil and Environmental, and Mechanical Engineering departments. Non-MME courses must be approved in advance by the graduate review committee.

4. A six-credit thesis or three-credit research project is required of each student. A graduate committee is required to guide thesis work. A faculty advisor is required for the research project.

5. On or before completing nine credit hours of course work, a student must submit a plan of study, which requires both advisor and program committee approval.

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Exit Requirements

Theses must follow the format noted in Thesis and Dissertation Format Guidelines available from the [College of Graduate Studies, Keith Building, Room 1150](#). Acceptance of the thesis by the committee and the passing of an oral defense of the thesis are required.

Research project students must present an acceptable written report to the faculty advisor and give an oral presentation of the research activity to the program faculty.

Courses (See Addenda - May 01, 2005)

[MME 500 Mathematical Methods in Engineering Mechanics \(4-0-4\)](#). Partial differential equations, integral equations, complex variables, integral transforms, and variational calculus as applied to the areas of elasticity, plasticity, fracture mechanics, materials science, and structural engineering. Cross-listed with [CVE 500](#).

[MME 504 Continuum Mechanics \(3-0-3\)](#). (See Addenda - January 01, 2005) General discussion of cartesian tensors. Application to the mechanics of linear and nonlinear continua. Unified analysis of stress and deformations in solids and fluids. Cross-listed with [MCE 504](#).

[MME 509 Energy/Variational Methods in Engineering Mechanics \(3-0-3\)](#). Prerequisite: [MME 604](#) or permission of instructor. Application of variational calculus techniques to the solution of solid mechanic problems. Cross-listed with [CVE 509](#).

[MME 510 Structure of Materials \(4-0-4\)](#). Basic principles, which determine the atomic, and crystal structures of materials are studied. Topics include instrumental and structural

analysis techniques, evolution of microstructures (phases/phase diagram), processing (diffusive, solidification, and mechanical working) techniques, and the influence of processing on microstructure. Cross-listed with [CHE 510](#).

[MME 511 Matrix Methods of Structural Analysis \(3-0-3\)](#). Energy methods approach to matrix structural analysis, including the development of element material stiffness, geometric stiffness, and mass matrices of basic structural elements; emphasis on the displacement method with computer-program solutions of truss and frame problems. Cross-listed with [CVE 511](#).

[MME 512 Finite Element Analysis I \(3-0-3\)](#). Prerequisite: [MME 511](#) or [MCE 504](#) or permission of instructor. Theory and application of finite-element methods as analysis tools for problems in engineering. Cross-listed with [CVE 512](#) and [MCE 580](#).

[MME 513 Advanced Strength of Materials \(4-0-4\)](#). Prerequisite: [ESC 211](#). Fosters an understanding of a number of advanced concepts in the field of engineering mechanics. Topics include three-dimensional stress-strain relationships, including failure theories; bending of non-symmetrical members; curved-beam theory; beams on elastic foundations torsion of non-circular shafts using the thin membrane analogy; and plate theory. Cross-listed with [CVE 513](#).

[MME 514 Analysis and Design of Composite Materials \(4-0-4\)](#). Prerequisite: [ESC 211](#). Behavior of unidirectional composites, rule of mixtures, short-fiber composites, analysis of orthotropic lamina, analysis of laminated composites, design of polymer-composite structures, and repair of reinforced concrete structures with composite materials. Cross-listed with [CVE 514](#).

[MME 515 Elastic Instability \(3-0-3\)](#). Prerequisite: [MME 511](#). Euler buckling of bars, beam/columns, and plates using matrix methods; concepts of geometric nonlinearity, including bifurcation and limit-point analysis using iterative numerical techniques; applications to load eccentricity and system imperfection. Cross-listed with [CVE 515](#).

[MME 517 Structural Vibrations \(4-0-4\)](#). Prerequisites: [ESC 202](#) and [CVE 412](#). Dynamic response of single and multiple degree-of-freedom and continuous structural systems to general force inputs by integration and modal methods; approximate design methods of structural systems under dynamic loading. Cross-listed with [CVE 517](#).

[MME 521 Behavior and Properties of Concrete \(3-0-3\)](#). Prerequisite: [CVE 422](#). Properties of hydraulic cements, aggregates, plastic, and hardened concrete; effect of admixtures and curing conditions; specifications and acceptance tests; placement, consolidation, finishing, and durability of concrete. Cross-listed with [CVE 521](#).

[MME 524 Nondestructive Evaluation \(3-2-4\)](#). Methods of nondestructive evaluation are studied. Topics include ultrasonics, acoustic emissions, penetrants, eddy current, X-ray and neutron radiography, digital radiography, computed tomography, thermography, and ground penetrating radar. Cross-listed with [CVE 524](#).

[MME 550 Advanced Dynamics \(3-0-3\)](#). Prerequisite: Graduate standing or approval of instructor. Fundamentals of analytical mechanics and Lagrangian dynamics. Study of Hamilton's and D'Alembert's principles. Behavior of autonomous and nonautonomous systems. Analytical solutions of dynamics problems by perturbation techniques. Cross-listed with [MCE 550](#).

[MME 565 Advanced Machine Analysis \(4-0-4\)](#). Prerequisite: [MCE 362](#) or [MME 513](#). Finite-element analysis of stresses and deflections in complex mechanical systems under static and dynamic loading. Integrating modeling techniques with 2D and 3D CAD systems for inputting geometric data. Comparison of finite-element results with theoretical and empirical results.

[MME 604 Elasticity \(4-0-4\)](#). Prerequisite: [MME 513](#). Elasticity topics include tensor algebra, fundamentals of stress analysis, fundamentals of deformation theory, thermo-elastic constitutive relationships, uniqueness of solution, Airy's stress function, and various solution

techniques for two-dimensional problems. Cross-listed with [CVE 604](#).

[MME 612 Finite Element Analysis II \(3-0-3\)](#). Prerequisite: [MME 512](#). Extension of the finite-element method to the solution of advanced linear and nonlinear engineering problems. Cross-listed with [CVE 612](#) and [MCE 680](#).

[MME 613 Nonlinear Finite Element Analysis \(3-0-3\)](#). Prerequisites: [MME 511](#) and [MME 604](#). Isoparametric finite-element discretization, incremental equations of motion. Total and updated Lagrangian formulations. Nonlinear geometry, nonlinear material problems in two and three dimensions. Computer solution of problems. Cross-listed with [CVE 613](#).

[MME 619 Advanced Plasticity with Applications \(3-0-3\)](#). Prerequisite: [MME 620](#). Solution techniques of plasticity problems that are amenable to computer solutions. Numerical treatment includes slab method, upper and lower bound on power, and finite-element methods.

[MME 620 Fracture Mechanics and Plasticity Theory \(4-0-4\)](#). Prerequisite: [MME 604](#). The stress and deformation field in the region of a crack are derived using linear elastic analysis. Topics include analyzing the change in potential energy due to crack propagation (Griffith's analysis), understanding the origin of critical fracture toughness parameters, and developing fundamental fracture criteria. In addition the course focuses on time-dependent plastic deformation analysis. Relationships between stress and strain that agree with experimental observations beyond the yield stress are constructed. Application of these inelastic constitutive relationships in predicting plastic deformations in simple components are presented. Drucker's stability postulates are discussed, and the principles of slip-line theory are given. General theorems of limit analysis and their application in structural analysis are highlighted. The J-integral and fundamentals of elastic-plastic fracture analysis are presented. Cross-listed with [CVE 620](#).

[MME 622 Fatigue Analysis \(2-0-2\)](#). Prerequisite: [MME 620](#). The fundamental concepts of crack growth in the presence of cyclic stress are considered. The fracture-mechanics approach is adopted. Similitude concepts, common empirical and semi-empirical equations, variable amplitude loading, and rainfall analysis are discussed. Cross-listed with [CVE 622](#).

[MME 625 Viscoelasticity \(2-0-2\)](#). Prerequisite: [MME 604](#). Modeling of continua as a viscoelastic material in which stress and strain fields in deformable bodies are time and spatially dependent. Viscoelastic models include Maxwell fluids and Kelvin solids. Creep phenomena, stress relaxation, hereditary integrals, viscoelastic beams, beams on continuous supports, vibration, and wave propagation in viscoelastic materials are studied. Cross-listed with [CVE 625](#).

[MME 638 Viscous Flow I \(4-0-4\)](#). Prerequisite: [MME 504](#) or [MCE 509](#). Derivation and exact solutions of Navier-Stokes equations governing laminar viscous flow with emphasis on incompressible fluids; applications include non-steady flow, low Reynolds numbers flows, parallel flows, and laminar boundary layers. Cross-listed with [MCE 638](#).

[MME 650 Nonlinear Dynamics \(3-0-3\)](#). Prerequisite: [MCE 512](#) or [MME 550](#). Dynamic behavior of nonlinear conservative and nonconservative systems. Response of nonlinear systems to force and parametrically excited inputs. Approximate solutions of nonlinear systems, perturbation techniques. Study of damping mechanisms as nonlinear phenomena, Coulomb damping, hysteretic damping, material damping. Limit cycle and jump phenomena observed in nonlinear systems.

[MME 693 Special Problems in Engineering Mechanics \(one to four credits\)](#). Detailed study of a special topic under the guidance of a faculty member.

[MME 696 Independent Study in Engineering Mechanics \(one to four credits\)](#). Prerequisite: Chair approval. Detailed individual study on a special topic under the guidance of a faculty member.

[MME 697 Master's Research \(one to eight credits per semester\)](#). Prerequisite: Graduate

standing in engineering mechanics. Up to eight credits may be considered toward thesis credit requirements.

MME 698 Master's Project in Engineering Mechanics (one to three credits). Preparation of a paper involving design and analysis or theoretical investigation of a topic in structural mechanics/materials selected by mutual agreement between student and department. A written report and an oral presentation are required.

MME 699 Thesis (one to eight credits). A research problem under the guidance of a faculty member, culminating with the writing of a thesis.

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College of Graduate Studies

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Graduate Catalog 2004-2006

Master of Science in Nursing

School of Nursing

Rhodes Tower 915

(216) 687-3598

[//www.csuohio.edu/coehs/departments/nursing/gradprogram/index.htm](http://www.csuohio.edu/coehs/departments/nursing/gradprogram/index.htm)

[//www.csuohio.edu/coehs/departments/nursing/gradprogram/forensicnursing.htm](http://www.csuohio.edu/coehs/departments/nursing/gradprogram/forensicnursing.htm)

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Programs of Study

[Population Health](#)

[Population Health – Forensics Track](#)

[M.S.N./M.B.A.](#)

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The Faculty

Professor:

Noreen Frisch, Director

Associate Professors:

Valerie George

Amy Govoni

Andrea Jennings-Sanders

Cheryl McCahon

Assistant Professors:

Cheryl Delgado

Sharon Radzysinski, Graduate Program Director

Marilyn Weitzel

Sharon Wing

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Population Health

38 credit hours leading to the Master of Science in Nursing degree

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Introduction

The M.S.N. program with a focus in Population Health is designed to prepare graduates with advanced knowledge, competencies, and skills in the nursing care of populations (aggregates). The graduate will have in-depth skills in population assessment, demography, epidemiological

assessment and data analysis, evaluation research, survey research, data projections, cost-benefit analysis, and the ability to apply nursing theory, population theory, ethics, cultural awareness, and political strategies to design, implement, and evaluate population health programs. In keeping with the rules and regulations of the Ohio Nurse Practice Act, the program does not prepare nurse practitioners or clinical nurse specialists; graduates are not eligible to apply for a certificate of authority in the State of Ohio.

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Accreditation

The graduate program in Nursing is accredited by the Commission on Collegiate Nursing Education (CCNE).

Faculty Research

Program faculty have research specializations in epidemiology, population health issues, culture and health, gerontology, mental health, nursing theory, and nursing diagnosis. In addition, the Center for Nursing Research provides resources to faculty and students, including a forum for interdisciplinary research, assistance with proposal development, and identification of funding sources. The departmental partnership with the Visiting Nurse Association of Cleveland also provides opportunities for collaboration with practitioners in community settings.

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Financial Assistance

Graduate [assistantships](#) (minimum of nine credit hours per semester) are available on a competitive basis to full-time students who apply and are eligible. [Assistantships](#) cover tuition and provide stipend support. Assistants may be involved in three types of [graduate assistantships](#): teaching, research, and administrative. Each type of assistantship is designed to meet the needs of the University and to assist in the professional development of students.

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Career Information

The focus in population health prepares graduates to practice in the evolving health care delivery system. Currently, managed care puts all decisions in the context of population-based data. Nursing activities—designed and implemented according to care maps and critical pathways—are grounded in aggregate data analysis. Quality assurance departments, the Department of Veterans Affairs Medical System, and many HMOs require nurses with the skills attained in a graduate program with a population health focus. Graduates are prepared to function collaboratively in community-based settings, to manage health care of population groups, and to work with populations to plan programs to address health concerns of the community. The program enables graduates to practice with populations across care settings, to assume leadership roles in the health care delivery system, and to pursue doctoral education.

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Non-Degree Status

A total of seven credits of 500-level graduate nursing courses may be taken as a non-degree graduate student. No nursing course may be taken beyond this limit. Students who wish to progress in nursing must complete the application process for admission to the College of Graduate Studies and to the M.S.N. program.

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Admission Information

Applicants to the Master of Science in Nursing program must meet the minimum requirements established by the College of Graduate Studies and the M.S.N. program faculty. Two letters of recommendation are required, preferably from individuals who can address the applicant's ability to be successful in graduate study. The general requirements for admission are:

1. A baccalaureate degree in nursing.
2. An undergraduate **grade-point** average of 3.00 or above.
3. A statistics course (undergraduate or graduate) within five years of application/admission.
4. A three-to-five page typed essay explaining why the applicant wants an M.S.N. in population health nursing; how such a graduate degree fulfills the applicant's personal and professional goals; and the knowledge, skills, attitudes, and competencies that the applicant hopes to develop during the educational process.
5. A valid active license as an RN in Ohio.
6. Identification of a population on which the student will focus during his or her program of study.
7. Submission of the Application for Graduate Admission and the \$30 application fee.
8. Completion of a School of Nursing application to the M.S.N. program.

Applicants who do not meet the minimum 3.00 or better **grade-point** requirement may be considered for admission on a probationary basis based on completion of prerequisite courses with an "A" and approval of the Graduate Admissions and Progressions Committee for the School of Nursing.

Students admitted on a probationary basis must take prescribed core courses in their first 12 credit hours and perform satisfactorily before being allowed to continue in the program.

Submit all materials to the Graduate Admissions Office. The office will forward materials to the M.S.N. Program Director.

To facilitate the admission process, it is strongly recommended that applicants use the online application system at www.csuohio.edu/admissions/gradForm.html. The processing time for paper **application forms** is longer.

Applications for fall semester are reviewed by the Department of Nursing Graduate Committee beginning March 1. Applications received after that date are considered for fall semester on a space-available basis.

Students may pursue the program on a full- or part-time basis. The University mandates a six-year time limit to obtain a master's degree.

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Degree Requirements

A minimum of 38 credit hours of study is required, including courses in advanced nursing knowledge, population health, a capstone project, and a cognate, or area of interest.

[Advanced Nursing Knowledge Courses \(17 credits\)](#)

NUR 500 Professional Role Development for Population Health Nursing I (one credit)

NUR 501 Introduction to Population Health Nursing (three credits)

NUR 502 Theory Development in Nursing (three credits)

NUR 503 Nursing Research Methods I (three credits)

NUR 601 Nursing Research Methods II (three credits)

NUR 602 Health Care Policy (two credits)

NUR 603 Health Care Financing for Nursing Practices (two credits)

[Population Health \(16 credits\)](#)

NUR 505 Introduction to Epidemiology and Demography: A Nursing Perspective (three credits)

NUR 604 Nursing of Populations I (four credits)

NUR 605 Nursing of Populations II (four credits)

NUR 606 Practicum in Population Health Care (four credits)

NUR 607 Professional Role Development for Population Health Nursing II (one credit)

NUR 699 Thesis (optional; one to three credits)

[Cognate or Area of Concentration \(elective: minimum of five credits\)](#)

Students may choose courses from the following list (other options available with approval of advisor):

NUR 598 Independent Study

NUR 698 Independent Study

Bioethics

Business Administration

Education

Gerontology

Health Care Administration

Health Sciences

Nursing

School Health Nursing

Sociology

Urban Affairs

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[Annual Documentation](#)

Once accepted into the program each student is required to present, at the time of entrance and annually thereafter, documentation of licensure as a registered nurse, professional liability insurance, CPR certification, and current immunizations. This information is required by clinical sites as well as accrediting agencies. Students are responsible for their own transportation to clinical sites.

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Clinical Placement

Students admitted to Phase II of the M.S.N. in Population Health Program take three courses, [NUR 604](#), [NUR 605](#), and [NUR 606](#), each of which includes a lecture and clinical component. In the clinical component, students develop competencies enacting the roles of the population health nurse expert with their population of focus in several different environments of care. During these learning experiences, students interact with members of their population, health care professionals, interest groups, and others who are involved with their population. These opportunities enable them to use the Precede-Proceed Model, nursing theory, and other concepts, theories, and frameworks to promote the health of aggregates. Students are encouraged to identify their population of interest soon after they enter the program to facilitate identification of clinical sites for optimal learning.

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Exit Requirements

There is no thesis requirement for the M.S.N. program in Population Health. Graduation is based on the successful completion of the required courses and clinical experiences. [NUR 606](#) Practicum in Population Health Care is the capstone course of the program. Students are expected to plan and implement a clinical project to address the needs of their population of focus. Each student is expected to do an oral presentation of his or her project and develop a manuscript for submission to a refereed journal.

Students may, however, elect to sub-stitute a thesis for the practicum course as part of their program of study. The thesis option requires the student to plan and carry out a research project, or develop a scholarly essay. Any student who selects this option will develop and submit a paper for publication to a refereed journal and publicly present and defend the thesis.

A student completing a thesis should select a thesis advisor early in the program, preferably by the completion of Phase I courses (500-level courses). The advisor helps the student establish an Advisory Committee of faculty from the student's area of interest and an external member from a cognate area. After the committee has been established, the student must prepare a research proposal that must be approved by the Advisory Committee. The committee members also monitor the thesis.

Students should enroll in [NUR 699](#) each semester in which they are involved with their thesis.

See the [Academic Regulations](#) section of this Catalog for additional information on the Thesis option.

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Population Health: Forensics Track

38 credit hours leading to the Master of Science in Nursing degree

Introduction

The core graduate program in nursing at Cleveland State University is a master's degree with a focus in population health. Students may choose to work with the victims or perpetrators of crime. In addition to the M.S.N. program's core content, students will focus on the science and the art of nursing as they apply to both criminal and civil investigations and legal matters. They will apply the forensic aspects of nursing care in the scientific investigation and treatment of victims/perpetrators due to violence, criminal activity, or traumatic accidents within the clinical or community institution. Students will acquire the in-depth knowledge and skill that interfaces the law, forensic science, law enforcement, mental health, health care, and nursing.

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Financial Assistance

See Master of Science in Nursing – Financial Assistance

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Career Information

The tract in forensic nursing prepares the nurse to function in a variety of roles in the evolving health care delivery system. These include but are not limited to:

- Sexual Assault Nurse Examiner – Nurse expert in caring for patients who have been sexually assaulted. Forensic nurses who see patients who have been sexually assaulted are employed by a variety of institutions, including hospitals, crisis centers, and government agencies.
- Forensic Nurse – Nurse expert who cares for all types of victims of violence. This nurse conducts forensic evaluations for any patient who presents with medico-legal needs. Any living victim and/or suspect may benefit from the objective forensic evaluation that is conducted. Forensic nurses are often employed by hospital emergency rooms, crisis centers, trauma centers, correctional facilities, medical examiner's office, and government agencies.
- Legal Nurse Consultant – Nurse expert who works with attorneys. A variety of cases are handled, from malpractice to personal injury. Policies and procedures are studied and documentation of nursing actions is reviewed. This nurse also assists attorneys with preparing for trial proceedings and may testify in some instances.
- Forensic Psychiatric Nurse, Correctional Nurse, and Institutional Nurse – Nurse expert who works with the accused in institutions and facilities. Forensic needs are identified and treatments are made available.
- Death Investigations – Forensic nurse experts may assist coroners and death investigators. The holistic nursing approach is integral to care of the deceased victim's family, community, and the investigation.

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Admission Information

See Master of Science in Nursing – Admission Information

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Degree Requirements

The 38-credit-hour curriculum is structured so that the student will take all of the core courses in the Population Health major. This allows students to gain a strong foundation in population health as well as theory and research. This also affords an opportunity for student interaction with others in all areas of interest related to population health and nursing. In addition the student will be required to take courses related to the specific population of victims/perpetrators of crime, violence, or traumatic events on which he or she has chosen to focus.

[Advanced Nursing Knowledge Courses \(12 credits\)](#)

NUR 500 Professional Role Development for Population Health Nursing (one credit)

NUR 502 Theory Development in Nursing (three credits)

NUR 503 Nursing Research Methods I (three credits)

NUR 601 Nursing Research Methods II (three credits)

NUR 602 Health Care Policy (two credits)

[Population Health Courses \(six credits\)](#)

NUR 501 Introduction to Population Health Nursing (three credits)

NUR 607 Professional Role Development for Population Health Nursing (one credit)

Ethics Elective (two credits)

[Area of Concentration – Forensics \(24 credits\)](#)

NUR 511 Introduction to Forensic Nursing (two credits)

NUR 512 Strategies for Population Health Assessment in Forensic Nursing (three credits)

NUR 614 Nursing of Populations I (Forensics) (four credits)

NUR 615 Nursing of Populations II (Forensics) (four credits)

NUR 616 Practicum in Population Health Care (Forensics) (four credits)

NUR 617 The Legal System (three credits)

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[Clinical Placement](#)

Students admitted to Phase II in the graduate program will take NUR 614 and NUR 615, each of which includes a lecture and clinical component. During these learning experiences, students interact with members of their population, health care professionals, interested groups, and others involved in their population. Students in the forensic track interact with law enforcement officials, attorneys, medical examiners, crisis specialists, correctional facility officials, and other nursing professionals involved in the promotion of health/nursing care of victims/perpetrators of crime, violence, or traumatic events.

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[Exit Requirements](#)

See Master of Science in Nursing – Exit Requirements

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[The M.S.N./M.B.A. Program](#)

[The Faculty](#)

In addition to faculty from the Master of Science in Nursing program, the Joint Degree Program includes faculty from the James J. Nance College of Business Administration.

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[Introduction](#)

The program leading to a joint Master of Science in Nursing and Master of Business Administration degree is designed for students with an undergraduate degree (B.S.N.) in

nursing and is offered jointly by the School of Nursing and the James J. Nance College of Business Administration. It is administered by the School of Nursing.

The purpose of the program is to prepare nurses for careers in management and leadership positions. This unique program offers graduates advanced knowledge, competencies, and skills in nursing of populations (aggregates) and a foundation for their growth into competent business managers. The graduate will have in-depth skills in demography, epidemiological assessment and data analysis, evaluation research, survey research, data projections, and cost-benefit analysis, and the ability to apply nursing theory, business theory, ethics, cultural awareness, and political strategies to design, implement, manage, and evaluate health programs, departments, and facilities.

Students in the M.S.N./M.B.A. program develop competencies in administration and management of different environments of health care.

In keeping with the rules and regulations of the Ohio Nurse Practice Act, the program does not prepare nurse practitioners or clinical nurse specialists; graduates are not eligible to apply for a certificate of authority in the State of Ohio.

For additional information, visit the web sites at [//www.csuohio.edu/cba/academic/graduate/nursing.html](http://www.csuohio.edu/cba/academic/graduate/nursing.html) or [//www.csuohio.edu/coehs/departments/nursing/gradprogram/msnmba.htm](http://www.csuohio.edu/coehs/departments/nursing/gradprogram/msnmba.htm).

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[Accreditation](#)

The M.B.A. program of the James J. Nance College of Business Administration is accredited by AACBS International, the Association to Advance Collegiate Schools of Business. The graduate program in nursing is accredited by CCNE, the Commission on Collegiate Nursing Education.

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[Admission Information](#)

Applicants to the M.S.N./M.B.A. program must meet the admission requirements for both the College of Business Administration and the School of Nursing.

College of Business Administration:

1. A total of at least 950 points based on the formula: 200 times the overall undergraduate **grade-point** average plus the Graduate Management Admission Test (**GMAT**) score; or at least 1,000 points bases on the formula: 200 times the upper division **grade-point** average plus the **GMAT** score. Students scoring below the required score on the **GMAT** may be required to take prerequisite courses prior to admission into the program. Refer to the Admission Information section of the Master of Business Administration program for details.

2. An official transcript from each college and university previously attended.

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School of Nursing:

1. A baccalaureate degree in nursing.

2. An undergraduate **grade-point** average of 3.00 or above.

3. A statistics course (may be at the undergraduate level) within five years of admission.

4. Two letters of recommendation.

5. A valid active license as an RN in Ohio.

6. An official transcript from each college and university previously attended.
7. Completion of the Application for Graduate Admissions and the \$30 application fee.
8. Students who do not meet the GPA requirement may be considered on a probationary basis. See details under Admission Information for the Master of Science in Nursing degree program.

To facilitate the admission process, it is strongly recommended that applicants use the online application system at www.csuohio.edu/admissions/gradForm.html. The processing time for paper application forms is longer.

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[Annual Documentation](#)

Once accepted into the program each student is required to present annually documentation of licensure as a registered nurse, professional liability insurance, CPR certification, and current immunizations.

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[Program of Study](#)

Students must meet all course and exit requirements for the Master of Science in Nursing and the Master of Business Administration. Refer to the Degree Requirements for the Master of Science in Nursing and the Master of Business Administration for details. Students can pursue the program on a full-time or part-time basis.

The M.S.N./M.B.A. course sequence for the full-time program is as follows:

Semester one

ACT 501 Financial Accounting (three credits)

ECN 503 Economic Concepts (three credits)

MLR 501 Management and Organizational Behavior (three credits)

NUR 500 Professional Role Development for Population Health Nursing I (one credit)

NUR 503 Nursing Research Methods I (three credits)

Semester two

HCA 640 Health Care Law (three credits)

MKT 501 Marketing Theory and Practice (three credits)

NUR 502 Theory Development in Nursing (three credits)

NUR 602 Health Care Policy (three credits)

Semester three

FIN 501 Financial Management (three credits)

GAD 515 Communication for Managers (three credits)

NUR 601 Nursing Research Methods II (three credits)

OMS 511 Operations Management (three credits)

Semester four

ACT 600 Managerial Accounting (two credits)

HCA 601 Health Care Finance (three credits)

MKT 601 Marketing Management (three credits)

NUR 605 Nursing of Populations II (four credits)*

Semester five

MBA 602 International Business (three credits)

MLR 601 Human Resource Management and Labor Relations (three credits)

NUR 505 Introduction to Epidemiology and Demography: A Nursing Perspective (three credits)

NUR 606 Practicum in Population Health Care (three credits)*

Semester six

ACT 660 Integrative Business Strategy (four credits)

MBA 600 Team Dynamics (one credit)

MBA 603 Management of Innovation and Technology (three credits)

NUR 606 Practicum in Population Health Care (two credits)*

Ethics Elective (three credits)

As a dual degree, the M.B.A. program will accept nine hours of core M.S.N. courses as elective credit, and the M.S.N. program will accept 10 hours of core M.B.A. courses as elective credit.

See the College of Business Administration Course Descriptions section of this Catalog for details on ACT, FIN, GAD, HCA, MBA, MLR, MKT, and OMS courses. Information on ECN courses can be found in the M.A. in Economics section of this Catalog.

* Includes a lecture and clinical component.

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Courses

[NUR 500 Professional Role Development for Population Health Nursing I \(1-0-1\).](#)

Prerequisite: Graduate standing or permission of instructor. Focuses on giving voice to the role of a population health nurse expert beyond the parameters of current areas of advanced practice function. The emerging nursing role in population health is necessary for practice in today's health care delivery system in which social, cultural, political, and economic forces interact with complex client systems. Students are supported to construct a new paradigm for nursing practice in order to articulate the role to health professionals, policy makers, community groups, and consumers.

[NUR 501 Introduction to Population Health Nursing \(3-0-3\).](#) Prerequisite: Graduate standing or permission of instructor. Addresses the philosophy and framework for population health and the care of aggregates. Concepts of health, disease, health promotion, and health restoration are emphasized, along with knowledge of human and cultural diversity, factors

influencing health and disease states, the ethics of care, and population as community. There is an emphasis on the need to collect explicit population data to progress systematically through the steps of health-promotion and program-planning processes. Introduces the Precede-Proceed Model; theories, concepts, and models of families; communication related to population health; epidemiology; public policy; and cost containment.

NUR 502 Theory Development in Nursing (3-0-3). Prerequisites: Graduate standing and B.S.N., or permission of instructor. Sets forth the expectation for using theory as a framework in graduate-level nursing practice. Nursing theories, models, and the stress framework are applied to population health.

NUR 503 Nursing Research Methods I (3-0-3). Prerequisites: Undergraduate or graduate-level statistics course and graduate standing, or permission of instructor. Focuses on critical analysis of scientific knowledge related to clinical problems. Study of the research process with emphasis on the logic and processes of inquiry, design, sampling, measurement, data collection, analysis, interpretation, and dissemination of findings. Use of information systems, standardized databases, and statistics needed for population analysis is presented.

NUR 505 Introduction to Epidemiology and Demography: A Nursing Perspective (3-0-3). Prerequisite: NUR 503 or permission of instructor. Focuses on the assessment of population groups with emphasis on epidemiology and demography. Analysis of population-based data for use in practice, program planning, and consultation is emphasized. The course provides an opportunity to use epidemiologic and demographic data to plan interventions for populations.

NUR 511 Introduction to Forensic Nursing (2-0-2) Focuses on a variety of models drawn from population health, mental health, holistic nursing practice, and crisis intervention theory, including crisis response training as developed by the National Organization for Victim Assistance (NOVA) to develop a theoretical framework for guiding forensic nursing practice. The course provides an overview of the stress framework and individual functioning for both the victim and the perpetrator, including spiritual and cultural perspectives.

NUR 512 Strategies for Population Health Assessment in Forensic Nursing (3-0-3) Focuses on the physical, psychological, and legal examination performed to identify, collect, and preserve evidence, identify physical and psychological trauma, and document injuries. Includes an overview of the interview/history, physical exam, evidence collection, and discharge process of patients experiencing acts of violence or traumatic incidences. Special attention is given to victims of domestic violence, abuse, and sexual assault.

NUR 530 Health Assessment Strategies of the School Aged Child: Strategies for Nursing Practice (2-0-2). (See Addenda - July 15, 2005) Prerequisite: Enrollment in the School Nurse Licensure Program; co-requisite: NUR 532. Expands the student's ability to use the nursing process through health appraisal of the school-aged child.

NUR 532 Health Assessment of the School-aged Child: Strategies for Nursing Practice Laboratory (0-2-1). (See Addenda - July 15, 2005) Co-requisite: NUR 530. Provides supervised laboratory practice to develop health appraisal skills. A comprehensive assessment tool based on the stress framework is used specifically related to the school-aged child.

NUR 550 Legal Issues in School Nursing (2-0-2). Prerequisite: Enrollment in the School Nurse Licensure Program or permission of instructor. Examines the legal implications of nursing practice in the school environment. The course assists students in developing basic skills in analyzing situations from a legal perspective and identify strategies to safeguard the health of students while practicing within the scope of a registered nurse's license and the published standards and guidelines for school nursing.

NUR 593 Special Topics in Nursing (one to four credits). Prerequisite: Admission into the M.S.N. program or permission of the instructor. Study of specific health problems/issues. May be repeated for credit with change of topic.

NUR 598 Independent Study (variable credit). Prerequisites: Approval of the Program

Director or Advisor, and acceptance into the M.S.N. program. Individual exploration in the student's area of interest under the direction of a [graduate faculty member](#).

[NUR 601 Nursing Research Methods II \(3-0-3\)](#). Prerequisite: NUR 503 or permission of instructor. Promotes research-based nursing practice in the care of populations. Focuses on methods of implementing research findings to solve identified clinical problems, and in developing questions appropriate for population-based research. Students gain skill in developing and evaluating evidenced-based practice guidelines for populations and in using research methods to evaluate outcomes.

[NUR 602 Health Care Policy \(2-0-2\)](#). Prerequisite: Graduate standing or permission of instructor. Models of health care policy are presented as well as principles for understanding behavior of complex health care, social organizations, community groups, and subcultures. Issues related to managed care, program planning, resource allocation, utilization and outcomes, and government and business influences on population health nursing practice are discussed. Application of ethical dimensions of health care policies to case studies and selected provider guidelines enables students to develop awareness, sensitivity, and a values framework to act ethically in policy decisions. An eight-week course.

[NUR 603 Health Care Financing for Nursing Practices \(2-0-2\)](#). Prerequisite: Graduate standing or permission of instructor. Focuses on strategic thinking for planning and managing in health care settings. Economics, reimbursement, budget planning, business planning, and marketing are explored in relation to nursing services. Issues such as health care financing practices, reimbursement for nursing care, cost-accounting of nursing services, billing codes, resource allocation, managed care and insurance coverage are explored. Effects of such practices on nursing workforce/manpower issues are explored. Access to care is analyzed as a contributing factor to population health. Students develop analytical skills and examine the ethical impact of economic decisions. An eight-week course.

[NUR 604 Nursing of Populations I \(4-8-4\)](#). Prerequisite: Completion of Phase I courses; co-requisite: NUR 601. Examines physiological, pharmacological, environmental, and demographic factors that frame nursing interventions at the population level. In the laboratory component, students design and implement research-based nursing interventions, and evaluate the outcomes of these interventions on aggregates. An eight-week course.

[NUR 605 Nursing of Populations II \(4-8-4\)](#). Prerequisites: Completion of Phase I courses and [NUR 604](#); co-requisite: [NUR 601](#). Examines psychosocial, behavioral, educational, cultural, political, and ethical factors that frame nursing interventions at the population level. In the laboratory component, students design and implement research-based nursing interventions and evaluate the outcomes of these interventions on populations. An eight-week course.

[NUR 606 Practicum in Population Health Care \(0-8-4\)](#). Prerequisite: [NUR 605](#); co-requisite: [NUR 607](#). [NUR 602](#) and [NUR 603](#) also may be taken as co-requisites. Provides students with the opportunity to synthesize and apply their understanding of population health concepts as well as theories and nursing frameworks with a population of their choice along the continuum of care. In this culminating experience, students plan, execute, and evaluate nursing practice within the context of the practice setting(s) or among populations in communities. Within the practice situation, students enact leadership roles to expand, enhance, and optimize positive outcomes for the population. The practicum includes a clinical seminar in which students analyze patterns of health care delivery to populations, examine factors that influence decision making, and appraise the impact of inter-professional collaboration on outcomes and their own efficacy as population health nursing experts.

[NUR 607 Professional Role Development for Population Health Nursing II \(0-2-1\)](#). Prerequisites: [NUR 604](#) and [NUR 605](#); co-requisite: [NUR 606](#) or [NUR 616](#). Culminating seminar that focuses on the emerging role of the population health nursing expert as it relates to nursing administration, direct practice, independent practice, consultation, public policy, community building, and nursing entrepreneurship. Graduates are prepared to provide leadership in the development, implementation, and evaluation of health care to populations, and to articulate the role to health professionals, policy makers, community groups, and

consumers.

NUR 614 Nursing of Populations I (Forensics) (2-4-4). Prerequisite: NUR 512. Examines physiological, pharmacological, environmental, demographic, and educational factors that frame nursing interventions at the population level. Introduces the student to the crime scene and forensic science. Provides an overview of various scientific applications of chemistry, biology, physics, and geology in such areas as forensic pathology, psychology, odontology, anthropology, psychiatry, and engineering. The laboratory component may include experiences in areas that allow the student to have contact with victims or perpetrators involved in acts of violence or traumatic incidences such as correctional facilities, emergency and trauma centers, or rape crisis centers. In the laboratory component, students design research-based nursing interventions in relation to forensic nursing.

NUR 615 Nursing of Populations II (Forensics) (2-4-4) Prerequisite: NUR 614. A continuation of NUR 614 focusing on an intensive examination of laboratory testing and procedures related to forensic science. The Coroner's Office and the State Crime Laboratory may be used as laboratory sites.

NUR 616 Practicum in Population Health Care (Forensics) (0-8-4). Prerequisites: NUR 601, NUR 605, and NUR 615; co-requisite: NUR 607. Provides students with an opportunity to synthesize and apply their understanding of forensic and population health concepts and theories as well as nursing frameworks with individuals and communities experiencing violence or traumatic incidences along a continuum of care. In this culminating experience, students plan, execute, and evaluate nursing practice within the context of the practice setting (s). Within the practice situation, students enact leadership roles to expand, enhance, and optimize positive outcomes for individuals or communities experiencing violence or traumatic incidences. Includes a clinical seminar in which students analyze patterns of health care delivery to individuals or communities experiencing violence or traumatic incidences, examine factors that influence decision making, appraise the impact of inter-professional collaboration on outcomes, and their own efficacy as forensic nurse experts.

NUR 617 The Legal System (3-0-3). Prepares nurses to interface with the legal system. Provides an overview of the legal process, lawyers, and the forensic specialist. Special emphasis is on the process of trial preparation and the roles of witness preparation, including the presentation of evidence and expert testimony.

NUR 698 Independent Study (variable credit). Prerequisites: Approval of the Program Director or Advisor, and acceptance into the M.S.N. program. Individual exploration in the student's area of interest under the direction of a [graduate faculty](#) member.

NUR 699 Thesis (one to three credits). Prerequisites: NUR 604 and NUR 605. Independent investigation by the student selected from an area of population health that results in a significant contribution to the field. The graduate advisor and the thesis committee must approve the research proposal. The results of the study must be submitted to a refereed journal for publication. A bound copy of the thesis must be submitted to the department. This option is primarily for students who intend to pursue doctoral studies.

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College of Graduate Studies

Program Listings

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Graduate Catalog 2004-2006

Master of Science in Industrial Engineering

Department of Industrial and Manufacturing Engineering

Stilwell Hall 212
(216) 687-2044
ime-egr.sh-02-01.csuohio.edu/Graduate.html

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The Faculty

Professors:

Chittaranjan Jain
L. Kenneth Keys
Theodore J. Sheskin

Associate Professors:

Taysir H. Nayfeh
Paul F. Petersen
Joseph A. Svestka, Chair

Assistant Professor:

M. Brian Thomas

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Introduction

The objectives of the Master of Science in Industrial Engineering program are to enable the student to continue professional development beyond the baccalaureate degree and to prepare the student for higher-level management responsibilities in a changing technological environment. The program also provides a foundation for doctoral studies.

Programs are structured to accommodate students holding undergraduate degrees in industrial engineering, engineering degrees in other fields, or science degrees with appropriate engineering experience. Students holding undergraduate degrees in disciplines other than industrial engineering may be required to take background undergraduate engineering courses, depending on their professional experience.

Courses are scheduled in the late afternoon and evening to permit students to follow a full-time or part-time program of study.

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Faculty Research and Laboratories

Students have ample opportunities to pursue research in the areas of facility planning, quality

systems, industrial automation, in-process sensing and adaptive control, machining, process simulation and control, engineering design/production interaction, engineering and technology management, work measurement, and human performance with interdepartmental cooperation, as well as materials and manufacturing processes and systems.

The Industrial and Manufacturing Engineering (IME) Department has several state-of-the-art laboratories in the fields of human factors, quality control, quantitative analysis, facility planning, industrial automation, manufacturing processes, and metrology. The Rockwell Industrial Automation Laboratory contains state-of-the-art programmable logic controllers (PLCs), machine vision, robotics, and precision material-handling systems. The Nondestructive Evaluation and Process Control Laboratory contains an ultrasonic CAT-scan system along with optical fluorescence, eddy current, and several other types of sensors and controllers. The Manufacturing Processing Laboratory contains several lathes, computer numerical controlled (CNC) milling machines, grinders, and force dynamometers, and a PC-based data acquisition (DAQ) system. The Manufacturing Research and Process Simulation Laboratory focuses on the development of process-simulation models and continuous process improvement by applying deterministic, condition monitoring, artificial intelligence techniques. Current research activities include predictive machining simulation and monitoring, high-speed dry-milling technology, and micro-mechanical machining of ceramics.

The IME department works closely with local industry focusing on applied research and development in the areas of machine performance, manufacturing operations, quality engineering, and the transfer of technology to industry. This has developed into a close collaborative relationship between the department and a large number of local industries.

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Financial Assistance

A limited number of [graduate assistantships](#) are available to highly qualified students. Some [assistantships](#) are funded through sponsored research projects that require the student to complete a thesis. International students wanting to be considered for [assistantships](#) are encouraged to take the TOEFL Academic Speaking Test (TAST).

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Career Information

Industrial engineering graduates typically are employed in manufacturing, service, government, and health care industries and agencies. The demand for industrial engineers continues to increase. Some recent graduates have obtained senior-level management positions with a variety of local organizations. Employment prospects for students trained in industrial engineering generally are good. Several national surveys have predicted that industrial engineering will be one of the highest career growth and opportunity areas for the next decade.

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Admission Information

Admission to the graduate program in industrial engineering is open to qualified students with a baccalaureate degree in engineering or science. A minimum baccalaureate [grade-point](#) average of 2.75 normally is required. Students lacking background courses should complete this work by taking undergraduate day or [evening](#) classes. A list of background courses required for students without an engineering degree is available on the IME web site under "Forms" or from the IME department. All applications are reviewed by the Department's Graduate Program Committee.

The GRE General section is required if one or more of the following conditions is true:

1. The undergraduate degree was awarded by a college or university outside of the United

States or Canada, or by a Canadian institution not accredited by the Canadian Engineering Accreditation Board of the Canadian Council of Professional Engineers.

2. An unaccredited college or university awarded the undergraduate degree.
3. The student's undergraduate cumulative **grade-point** average is below 2.75.
4. The year of the baccalaureate degree precedes the date of application to the College of Graduate Studies by more than six years; however, in this case, the examination requirement may be waived, with program approval, if the applicant's undergraduate **grade-point** average is 3.00 or above.

If the GRE is required, a composite score of 1300 or greater is required. The composite score is based on 200 times the undergraduate grade point average plus the quantitative score on the GRE. A minimum of the 50th percentile on the quantitative section of the GRE is required. The student must demonstrate an acceptable level of verbal comprehension and writing ability.

International students should refer to the section earlier in this Catalog for information on testing requirements to demonstrate English-language proficiency

To facilitate the admission process, it is strongly recommended that applicants use the online application system at www.csuohio.edu/admissions/gradForm.html. The processing time for paper application forms is longer.

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Degree Requirements

The requirements for the M.S. in Industrial Engineering degree are as follows:

1. A program of study must be completed in conference with the student's faculty advisor within the first semester of enrollment. Students are expected to follow the plan of study requirements. The student's program of study must have the approval of the Graduate Committee of the department.
2. Two options are available—thesis or courses only.
 - a. The thesis option requires a minimum of 27 hours of course work and a minimum of three hours of **IME 698** Master's Thesis. Thesis registration may begin after completion of nine credit hours of work in residence. See course description for **IME 698** for details.
 - b. The course-only option requires a minimum of 30 hours of course work. Students may be required to take certain undergraduate background courses to be prepared to take 500- and 600-level courses.
3. A minimum of 21 credits for the thesis option and 24 credits for the course option must be taken at the 500 or 600 level in the Industrial and Manufacturing Engineering Department. A maximum of two technical electives (six hours) may be taken outside of the department with departmental approval.

Areas of Concentration

The M.S.I.E. degree has four areas of concentration. A student must select one of these areas as part of his or her plan of study.

- Advanced Industrial Engineering
- Engineering Management
- Manufacturing Engineering
- Quality Engineering

Required Core Course

(To be taken by all industrial engineering students)

IME 520 Applied Engineering Design

IME 530 Operations Research I

IME 560 Manufacturing Systems Engineering

IME 562 Production and Inventory Control

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Exit Requirements

Students pursuing the thesis degree option must successfully defend their work in an oral examination in person, before their committee. This examination is open to the public and a notice must be posted two weeks prior to the examination.

Courses (See Addenda)

Undergraduate students taking 500-level courses must meet University requirements and obtain the permission of the course instructor. All non-degree students must obtain the instructor's permission before registering for any of the courses offered by the IME Department.

IME 505 Human Factors Engineering (3-0-3). The physical capabilities and limitations of the worker in the design and analysis of occupational tasks are studied. Topics include workplace design, work physiology, manual material handling, heat/noise stress prevention, and hand-tool design.

IME 506 Industrial Safety and Health (3-0-3). Fundamental principles and techniques of industrial safety and hygiene are presented. Topics include federal regulations, hazard analysis, fire and explosion prevention, machine guarding, hazardous material control, industrial ventilation, survey and sampling techniques, and personal protection equipment.

IME 520 Applied Engineering Design (3-0-3). Prerequisites: Undergraduate course in statistics and probability (ESC 310), graduate standing, and permission of instructor. Note: This course is not a substitute for IME 320. Statistical considerations for designing good engineering experiments; topics include application of interference theory, terminal vs. run-to-failure tests, predetermined vs. sequential tests, evaluation comparison, incomplete blocks, accelerated tests, factorial experiments, covariance, analysis of variance, and regression analysis.

IME 530 Operations Research 1 (3-0-3). Prerequisites: Undergraduate course in linear algebra, graduate standing, and permission of instructor. **Note:** This course is not a substitute for IME 330. Deterministic models in operations research, including linear programming and network formulations, the Simplex, transportation, and assignment algorithms, with applications to engineering and management problems.

IME 540 Quality System Design (3-0-3). Prerequisite: IME 320 or equivalent with permission of instructor. Philosophies and structures of a generic quality system are introduced. Also examines the backgrounds of various industrial quality assurance systems, such as ISO 9000, CIS 9000, and Ford 01. A comprehensive examination of ISO 9000 is included, along with various implementation issues.

IME 545 Advanced Metal Cutting (3-0-3). Prerequisite: IME 250 or equivalent with permission of instructor. The physical models describing chip-formation phenomenon are described, analyzed, and applied to various machining operations. Machine performance and production economics are discussed and applied to automated and conventional machining

systems.

IME 548 In-Process Sensing and Process Control (3-0-3). Study and analysis of the role of sensors and computers in manufacturing process control. Intrinsic and extrinsic properties of products and materials are explored with respect to in-line, on-line, and off-line methods of monitoring, adaptive control, and automated inspection systems.

IME 550 Industrial Automation (3-0-3). Broad introduction and analysis of the basic building blocks of modern automated manufacturing and quality inspection systems. Topics include sensors, actuators, machine vision, programmable logic controllers, and PC-based data acquisition and control.

IME 551 Industrial Automation Laboratory (0-3-1). Application of sensors and control interfaces for manufacturing systems. Design setup, implementation, data gathering, and analysis of collected data on real-process control.

IME 560 Manufacturing Systems Engineering (3-0-3). Analysis and design of automated production systems; quantitative models are introduced and applied to flow-balance characteristics of synchronous and asynchronous fabricating and assembly systems.

IME 562 Production and Inventory Control (3-0-3). Prerequisites: Graduate standing and permission of instructor. **Note:** This course is not a substitute for IME 470. This is an introduction to the analysis of various aspects of production planning and control. Topics include classical inventory models, MRP, DRP forecasting, production planning, scheduling, queuing, and line balancing. Emphasis is on integration of production and control activities.

IME 570 Continuous Quality Improvement (3-0-3). Prerequisite: IME 320 or equivalent with permission of instructor. The philosophy, techniques, and methods for continuous improvement of manufacturing, business, and service processes are studied. The Shewhart cycle, team building and dynamics, quantitative and qualitative methods, Taguchi, and other quality-engineering methods also are covered.

IME 575 Systems Simulation (3-0-3). Prerequisites: Undergraduate course in statistics and probability (ESC 310) and permission of instructor. Introduction to simulation, including development of simulation models, random number and random variable generation, model validation and testing, analysis of model output, and an overview of simulation languages. Emphasis is on the use of simulation modeling in decision making through a series of projects involving decision problems.

IME 580 Engineering Management (3-0-3). Studies of current methods for the effective control of projects in the private and public sectors are presented. Included are the analysis of qualitative and quantitative factors that affect the successful completion of projects. Emphasis is on the development of project criteria, analysis of project networks, and the effects of time, financial, and organizational changes on projects.

IME 600 Economic Evaluation of Industrial Projects (3-0-3). Prerequisite: Undergraduate course in engineering economics or permission of instructor. Advanced study in the time-value of money, project costing, evaluation of industrial projects, and economic decision models for investments in manufacturing and industrial projects. Topics include, but are not limited to, activity-based costing, venture capital, concepts and impact of risk, and corporate financial evaluation.

IME 610 Concurrent Engineering (3-0-3). An understanding of the principles of system-level design, product quality requirements, and design for manufacturability and assembly are presented. Addresses testability, reliability, and maintainability issues; explores rapid prototyping and design-review techniques. Additional topics include selection of materials, manufacturing processes and functional testing, and life-cycle engineering.

IME 623 Reliability Engineering (3-0-3). Concepts, models, and goals of reliability engineering for engineering systems, qualitative analysis of economic specifications, performance levels, maintenance levels, and redundancy systems.

IME 631 Operations Research II (3-0-3). Prerequisites: IME 530 or equivalent and an

undergraduate course in statistics and probability. A study of stochastic models in operations research, including stochastic processes, queuing models, probabilistic inventory models, and probabilistic decision models, with applications to engineering and management problems.

IME 641 Manufacturing Expert Systems (3-0-3). Prerequisites: **IME 530** and permission of instructor. The concepts and principles on which the Artificial Intelligence (AI) models known as Expert Systems are constructed, and how they are employed in modern manufacturing are studied. Fundamentals of the PROLOG language and applications to engineering design and manufacturing-systems control problems.

IME 652 Robotics and Machine Vision (3-0-3). The basic principles underlying the analysis and application of robots used in manufacturing systems are introduced and analyzed. Stand-alone and robot-integrated machine-vision systems and their applications are discussed in detail.

IME 653 Robotics and Machine Vision Laboratory (0-3-1). The student receives hands-on experiences in programming and applying robots, robotic arms, and machine-vision systems to material processing and handling problems.

IME 654 Advanced Industrial Automation and Control (3-0-3). Design and analysis of integrated manufacturing cell-control systems for material handling, processing, and automated inspection systems. Topics include PLCs, machine vision, I/O communication, and manufacturing automation protocols.

IME 655 Advanced Industrial Automation and Control Laboratory (0-3-1). Projects representing the advanced concepts developed in **IME 654** are assembled and applied on automated processing and assembly cells in the industrial automation laboratory.

IME 656 Nondestructive Evaluation (3-0-3). A comprehensive analysis of nondestructive-testing techniques for characterization and defect evaluation. Methods covered include radiography, ultrasonics, eddy currents, microwaves, magnetic flux, and penetrant inspection, with hands-on applications in a laboratory setting.

IME 660 Computer Integrated Design and Manufacturing (3-0-3). Prerequisite: **IME 560** or equivalent. Introduction of the concepts of solid modeling of parts, computer-aided design strategies, control of manufacturing processes through computers, and integration of computer-controlled machine tools with design models, and understanding of CAD/CAM systems architectures through case studies and projects.

IME 663 Competitive Manufacturing Management (3-0-3). Prerequisite: **IME 562** or permission of instructor. A study of the management concepts and principles that will guide manufacturing into the future. Topics include approaches to waste elimination, teaming, continuous improvement, lean manufacturing, advanced production planning and control systems, supply-chain management, and activity-based costing. Web-based course.

IME 664 Engineering Project Control (3-4-3). Prerequisite: Undergraduate course in production and inventory control. Survey of methods and techniques used to plan, implement, manage, and control projects. Topics include team building, resource allocation, control techniques, resource leveling, and analysis of alternatives. Application of techniques to small and large projects is emphasized.

IME 666 Systems Engineering, Analysis, and Management (3-0-3). Basic graduate course for introducing the concept of systems, systems engineering process, definitions, planning, design, advancement, and control of complex human-made systems and organizations (enterprises). Major topics include system-engineering process, planning, system design, life cycle, reliability, maintainability, integrated logistics support, and costs issues. Includes several examples of new enterprise systems engineering products and processes.

IME 678 New Product Development, Marketing, and Management. (3-0-3). Prerequisite: **IME 666.** A study of the latest practices, processes, methodology, marketing, and management of the development, introduction, and successful product life-cycle management

of new high-technology products. Topics include opportunity identification, new-products development process, alter-native evaluation, product-test (marketing) strategies, introduction and roll-out strategies, and customer support.

IME 679 Technology Management for Engineers (3-0-3). Technology management concepts, principles, and processes with engineering examples that govern the successful implementation of new technologies are studied. Also addresses the process strategies for managing technology (S-curve) changes in today's high-technology-engineering driven world. Topics include the engineer's role in innovation and entrepreneurship, innovation and technology forecasting, product/technology life cycle, economic life cycles, S-curves, and technology change.

IME 696 Directed Studies in Industrial Engineering (one to three credits). Prerequisite: Permission of instructor. A directed or independent study of an individual problem or subject under the supervision of a [graduate faculty](#) member. Students must register for this course in the IME Department for assignment of a section number. Students must furnish a title for the directed or independent study at the time of registration.

IME 697 Master's Project (3-0-3). A student may include one semester of [IME 697](#) as part of his or her plan of study. An IME Graduate Faculty member must agree to be the advisor. The student must prepare a formal proposal for approval prior to registering for the course. This should be done during the semester prior to taking the course. The student must present a formal report on the project to his or her advisor and at least one additional faculty member prior to the end of the semester.

IME 698 Master's Thesis (3-0-3). (See [Addenda](#)) The thesis course is taken the last semester in which the student is enrolled. The student should design a plan of study around his or her thesis and begin the process one or two semesters prior to graduation. The students must have the thesis approved by his or her committee and the Graduate Program Committee prior to registering for [IME 698](#). Before a student may register for [IME 698](#), the Thesis and Dissertation Proposal Form must be on file with the [College of Graduate Studies](#). Each student pursuing the thesis option must successfully defend his or her work in an oral examination, in person, before the committee. This examination is open to the public and a notice must be posted two weeks prior to the examination. The student must be enrolled in [IME 698](#) or [IME 699](#) to defend the thesis.

IME 699 Master's Defense (1-0-1). (See [Addenda](#)) Prerequisite: Completion of one semester of [IME 698](#). Students may enroll in this course only if they were not able to defend their thesis during the last semester of enrollment.

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College of Graduate Studies

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Master of

Applied Communication Theory and Methodology

School of Communication

Music and Communication 233

(216) 687-4630

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The Faculty

Professors:

Robert I. Abelman
 David J. Atkin
 Eileen Berlin Ray
 Leo W. Jeffres
 Sidney Kraus
 Jae-won Lee
 Carolyn A. Lin
 Kimberly A. Neuendorf
 Richard M. Perloff, Director

Associate Professors:

Austin Allen
 Susan E. Kogler Hill
 Michael Rand
 George B. Ray
 Jill E. Rudd

Assistant Professors:

Cheryl Campanella Bracken
 Jian Guiwei
 Jenifer E. Kopfman
 Loreen Olson

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Purpose, Objectives, and Career Information

The master's degree program provides graduate education in communication theory and methodology for students who seek to: 1) apply communication strategies to work-related problems; and 2) ultimately pursue doctoral studies in communication. The program is directed primarily toward the development of communication scholars and specialists, i.e., individuals who are able to apply knowledge of communication theory and methodology to the analysis and solution of a variety of communication problems. The program emphasizes the ability to synthesize and interpret research in socially useful ways while also allowing for specialization in the actual conduct of research.

Communication techniques and problem-solving strategies incorporated in this program provide an effective background for individuals in careers such as corporate media or training, journalism, organizational communication consulting, promotional communication, and campaigning. Also, business or management personnel who have a need for experience in communication problem solving may find the program useful. Recent graduates of the program

are employed in such diverse fields as advertising/ public relations research, broadcast programming, corporate research, government, personnel/administration, and retailing. Others have continued on with doctoral studies at major U.S. universities.

The key words “applied theory and methodology” emphasize that students are expected to utilize their education in the pursuit of their individual career objectives. For most students, this occurs directly when they conduct a final thesis or project.

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Communication Research

Communication research involves the scientific study of communication in order to help individuals and institutions meet the changing needs of today’s society. The members of the graduate faculty have published hundreds of articles and chapters, more than 20 books, and have received grants and Fulbright Fellowships. Their areas of expertise include communication technologies, corporate communication, conflict management, health communication, and media audience analysis. According to a study in the Journal of the Association for Communication Administration (Spring 1996), the Cleveland State University Department of Communication ranks among the top four nationally.

Graduate students are encouraged to work as research interns with faculty. Students also are encouraged to present their work at professional conventions and to coauthor papers for both scholarly and trade publications. Recent research projects involving graduate students include the diffusion and use of new communication technologies, mass media and interpersonal influences on career aspirations of teenagers, college student perceptions of and communication about date rape, accounts of unexpected events in organizations, affection exchange in father-son relationships, how TV violence affects ethnic and racial stereotypes, effects of community characteristics on newspaper reporting styles, using Internet web sites for community integration, and communication deficiencies in interpersonal and organizational contexts.

Graduate students also work with the Communication Research Center on survey projects for clients that include regional and national marketing/ research agencies.

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Financial Assistance

Research and teaching [assistantships](#) are available. Assistantships are awarded on the basis of merit as represented in undergraduate records and letters of recommendation, as well as financial need. Graduate assistants must maintain at least a 3.00 [grade-point](#) average. Receipt of more than one grade below a “B” also warrants revocation of an assistantship. The program also offers a variety of scholarships. Graduate [assistantships](#) are awarded starting in April until all positions are filled.

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Admission Information

Applicants for admission to the master’s program in Applied Communication Theory and Methodology must:

1. Hold a bachelor’s degree from an accredited college or university.
2. Have a cumulative [grade-point](#) average of at least 2.75.
3. Submit the results of either the Miller Analogies Test or the Graduate Record Examination. Students with an undergraduate [GPA](#) of 3.75 or higher are exempted from this requirement.

An undergraduate major in communication is not required for admission to this program. However, applicants without such a degree may be required to make up deficiencies either before admission or during the first semester of enrollment. No graduate credit is granted for making up deficiencies.

Applicants are screened by the Department Graduate Committee, which makes its decision based on:

1. The undergraduate record.
2. The career aspirations of the candidate.
3. A statement from the applicant regarding the expected benefits to be derived from the program.
4. Performance on the Graduate Record Examination or the Miller Analogies Test.
5. Two or more letters of recommendation.

Students who enroll in the program should be interested in relating course work to career objectives, and to solving communication problems. Students may enter the program in fall or spring semester.

To facilitate the admission process, it is strongly recommended that applicants use the online application system at www.csuohio.edu/admissions/gradForm.html. The processing time for paper application forms is longer.

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Curriculum

The program requires the completion of 32 or 38 hours, depending on exit option, including at least 24 required communication credits as follows:

[Core Requirements](#) (eight credits)

COM 501

COM 512

[Communication Theory](#) (eight credits)

Two of the following required:

COM 510

COM 520

COM 530

COM 540

[Research Methods](#) (four credits)

One of the following required

COM 531

COM 532

COM 533

COM 534

COM 535

Cognate Courses (four credits)

One of the following required

COM 541

COM 542

COM 543

COM 544

COM 548

COM 549

COM 590

Electives (four or 12 credits, depending on exit option)

Exit Options: COM 589, COM 597, COM 598, or COM 599.

Students have four exit options: thesis, project, collaborative research, and comprehensive examinations. For the thesis option, students take four credit hours of electives and four credits of thesis. For the project option, students take four credit hours of electives and four credits of project. For the collaborative research exit option, students take four credit hours of electives and the four-credit collaborative research course. For the comprehensive examination option, students take 12 hours of electives and the two-credit examination.

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Degree Requirements

Successful completion of the Master of Applied Communication Theory and Methodology degree program requires the following:

1. Successful completion of a minimum of 32 or 38 credit hours, depending on the exit option, which may include a maximum of eight hours of transfer credit and/or a maximum of four hours of credits in 400-level courses taken outside of the Department of Communication, with departmental approval.
2. Completion of a minimum of 20 credit hours in communication courses at Cleveland State University as a graduate student, not including collaborative research, comprehensive examination, project, or thesis credits (COM 589, COM 597, COM 598, or COM 599).
3. Completion of a program of study approved by the Graduate Committee in Communication and the student's master's committee.
4. A minimum 3.00 grade-point average in all courses taken for the degree.
5. Students have four options for the completion of their M.A.C.T.M. following course work: a thesis, a project, collaborative research, or a comprehensive examination.
 - a. Thesis students must submit a thesis and present an oral defense of their research. A maximum of four credit hours for thesis research (COM 599) may contribute to the 32-credit total.
 - b. Project students must submit a project report and orally defend the report. A maximum of four credit hours for the project (COM 598) may contribute to the 32-credit total.

c. Students must successfully complete the Collaborative Research Project (COM 589). A maximum of four credit hours may contribute to the 32-credit total.

d. Non-thesis/non-project/non- collaborative research students must complete eight additional credit hours of course work (for a total of 36 hours), and pass a comprehensive examination (COM 597, two credit hours).

6. Students must present a bound copy of the thesis or project to each member of the M.A.C.T. M. committee and to the Department of Communication Graduate Office.

7. Requirements for the Master of Applied Communication Theory and Methodology degree must be met within six calendar years of the student's admission to the program.

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Required Courses

Students should consult with their advisor to determine when courses should be taken. The following are required core courses for all students seeking the master's degree:

COM 501 Pro Seminar in Communication

COM 512 Communication Research Methods

All other 500-level communication courses are electives. Courses in other departments may be taken in lieu of these courses, with departmental approval. Specific elective needs and interests of students will determine how many electives are completed outside of the department.

Courses

COM 501 Pro Seminar in Communication (4-0-4). Introduction to the history of science, communication theories, and the nature of scientific inquiry. Focuses on a survey of major theories, the logic of communication inquiry, techniques in literature search and review, and the skills in critiquing research. Also examines the structure and logic of the scientific method, as well as different research methodologies and when they are employed. Introduces students to key principles of design, sampling, reliability and validity, measurement, and hypothesis testing.

COM 510 Organizational Communication Theory (4-0-4). Prerequisite: COM 501 or permission of instructor. Focuses on three main issues: 1) major theoretic approaches to studying organizations, and the communication models emphasized in each approach; 2) major variations in processes and effects of organizational communication when analyzed by the structure, function, and level of communication system; 3) applications of concepts and principles for describing and analyzing organizational communication processes and effects.

COM 512 Communication Research Methods (4-0-4). Examines specific quantitative and qualitative research methods, including survey, experimental, content analytic, and observational designs. Emphasis is on design and execution of research for exploratory, descriptive, and explanatory purposes. Students also learn statistical procedures employed in analyzing data through an introduction to multivariate statistics and an overview of t-tests, analysis of variance, and multiple regression techniques.

COM 520 Interpersonal Communication Theory (4-0-4). Prerequisite: COM 501 or permission of instructor. Focuses on communication networks and the relational dimensions of communication behavior, including control and affective functions of verbal and nonverbal communication; examination of human communication models as they relate to both information theory and the "systems approach." Emphasis on interaction theories of personality in explaining interpersonal communication behavior.

COM 530 Mass Communication Theory (4-0-4). Provides students with an introduction to the major theories and concepts in the field of mass communication. Attention is devoted to communication perspectives and to psychological perspectives. Topics include determinants of mass media news, effects of television news, political advertising and debates, television violence effects, TV and children, media economics, and the sociology and psychology of the mass media audience.

COM 531 Multivariate Statistical Methods (4-0-4). Prerequisite: COM 512. Advanced methods course on multivariate statistical methods used in analyzing research in human communication. Focuses primarily on understanding these methods and statistics rather than on their actual performance and calculation. Students should be able to critically read and analyze published research in communication, including the methodological and statistical sections of these articles, as well as to use computer packages to apply multivariate statistical tests, including factor analysis, multiple regression, discriminant analysis, MANOVA models, cluster analysis, and multi-dimensional scaling.

COM 532 Audience/Media Research Methods (4-0-4). Introduction to applied research methods in public relations, advertising, and media in relation to the nature of and relations between audience and media. Focuses on demographic and psychographic research methods, audience measurement techniques such as audience ratings, quantitative and qualitative research data gathering, analysis and interpretation methods, such as focus groups, surveys, and experiments.

COM 533 Content Analysis Research Methods (4-0-4). An empirical and systematic investigation of documented messages — in print, graphical, and audio-visual forms — and observed human communication behaviors. Focuses on the design and execution of content analytic studies, including form vs. content variables, measurement issues, reliability and validity assessment, a systems view of research findings, use of a computer text analysis program, and traditional human-coder techniques.

COM 534 Ethnographic/Qualitative Research Methods (4-0-4). Assumptions behind and strategies for conducting ethnographic research. Qualitative techniques of data collection, including intensive interviews, field observations, and use of various cultural texts. Methods of data analysis and the writing of ethnographic studies. Emphasis on the ethnography of communication.

COM 535 Participant Observation/ Interviewing Methods (4-0-4). An examination of the basic principles and strategies of participant observation — a method of collecting information utilizing creative judgment and systematic procedures. Theoretical basis for collecting data using the combination of qualitative and quantitative methodologies is discussed. Techniques of interviewing and mini-fieldwork participant observation are discussed and practiced.

COM 540 Persuasive Communication and Campaigns (4-0-4). Prerequisite: COM 501 or permission of instructor. Study of persuasive communication and campaigns. Focuses on major communication theories of persuasion, current issues and problems in persuasive communication, and an examination of mass and interpersonal persuasive campaign issues such as attitude formation, fear appeals, cognitive dissonance theory, and interpersonal persuasion. Students may construct campaigns and persuasive appeals for application.

COM 541 Political Communication (4-0-4). This seminar explores theory and research on political communication. The role of mass media and public opinion in American politics is examined, focusing on media and elections, agenda setting, political advertising, campaigning, and presidential debates. Contemporary and classic theories of press and politics are critically examined.

COM 542 Communication and Technology (4-0-4). An in-depth study of the fundamental nature and components of existing and emerging communication technologies and their relationship to society. Focuses on the discussion of current socio-cultural, economic, and regulatory issues relevant to the development of these technologies and their ongoing convergence in the information society as well as their impact on communication systems.

COM 543 Theory Building (4-0-4). The examination of the structure, assumptions, and testing of various theories in the physical and social sciences and their application to communication science as well as theory construction techniques.

COM 544 Mediation and Collaborative Problem Solving (4-0-4). Examines how mediation works, factors that determine whether mediation can be used to resolve disputes, and the conditions under which mediation is most effective.

COM 548 Managing Organizational Teams (4-0-4). Focuses on the structure, functions, and processes of organizational teams and work groups. Special attention is given to promoting effective teamwork in today's organizations through methods of team building and examining leadership issues confronting teams.

COM 549 Health Communication (4-0-4). Focuses on interactions of people involved in the health care process and the dissemination and interpretation of health-related messages. Emphasis is on provider-recipient communication, communication in health concerns as they relate to physical, mental, and social health issues.

COM 589 Collaborative Research Project (one to four credits). Prerequisite: Grade of "B" or higher in COM 531. Exit option for completion of the master's program. Students work with faculty on a significant team project and are involved in conceptualization, project design, data collection, data analysis and evaluation, preparing and writing reports, and presentation of results to clients. The nature of the project selected is announced in advance. Graded S/F.

COM 590 Internship in Communication (four credits). (See Addenda - January 01, 2005) Fieldwork with community agencies concerned with promotional communication, communication in organizations, political campaigns, and the media. Offered every semester; see advisor for help in scheduling. Graded S/F. No more than four credit hours from either COM 590 or COM 596 may be counted toward the M.A.C.T.M. degree.

COM 595 Seminar in Communication Theory and Methodology (4-0-4). In-depth analysis of one or more specific issues in communication theory in relation to an applied problem in communication. Area of primary emphasis varies depending on the instructor. Theory or methodology course; may be repeated with change of topic.

COM 596 Problems in Communication (one to four credits). In-depth examination of a student-selected communication topic via independent study. Typically involves the utilization of appropriate research methods (e.g., field survey, attitude poll, experimental investigation) as applied to the student's proposed research topic. Students may serve as research interns in a faculty member's program of research. Offered every semester; see advisor for help in scheduling. No more than four credit hours from either COM 596 or COM 590 may be counted toward the M.A.C.T.M. degree.

COM 597 Comprehensive Examination (two credits). Prerequisites: Permission of instructor and Graduate Director, and completion of 36 hours required for graduation. Students enroll in the course the semester they take the comprehensive examination. May be repeated. Graded S/F.

COM 598 Research Project (one to nine credits). Design and execution of an individual research project directed toward analysis of a communication problem found in a career-related setting. May be repeated until completed. Graded S/F.

COM 599 Thesis (one to nine credits). Writing of a master's thesis under the direction of a member of the department faculty. Thesis research must be conducted within the boundaries set by faculty expertise. May be repeated until completed. Graded S/F.

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2121 Euclid Avenue, Cleveland, Ohio
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Mailing Address

Cleveland State University
Affirmative Action Office
2121 Euclid Avenue
AC 236
Cleveland, OH 44115-2214

Campus Location

2300 Euclid Avenue
AC 236

Phone: 216.687.2223

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