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Youngstown State University reserves the right to change without notice any statement in this bulletin concerning, but not limited to, rules, policies, tuition, fees, curricula, and courses.

Youngstown State University is committed to a policy of nondiscrimination on the basis of race, color, age, religion, sex, national origin, disability, sexual orientation, or identity as a disabled veteran or veteran of the Vietnam Era, in respect to students and/or applicants for admission, to employees and/or applicants for employment, and to organizations providing contractual services to Youngstown State University.

Inquiries should be addressed to Youngstown State University's Director of Affirmative Action, who is responsible for coordinating the University's programs for compliance with Section 504 of the Rehabilitation Act of 1973 and Title IX of the Education Amendments of 1972. Inquiries can be initiated in writing or by calling (330) 742-3370.

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GRADUATE CATALOG

ISSUE

EFFECTIVE SEPTEMBER 1996

YOUNGSTOWN, OHIO

Table of Contents

Regents and Trustees.....	4
Administrative Officers.....	4
Academic Calendar.....	5
General Information.....	7
The Campus.....	9
Academic Support Services.....	11
Student Support Services.....	13
The School of Graduate Studies.....	17
Development and Organization.....	17
Programs.....	17
Admission.....	17
Registration.....	21
Other Regulations.....	22
Student Fees and Charges.....	28
State Residency Status.....	33
Financial Assistance.....	36
Graduate Student Representation.....	38
Course Numbering System, Abbreviations, and Reference Marks.....	38
Graduate Programs.....	40
Doctor of Education.....	40
Master of Arts—Economics.....	44
Master of Arts—English.....	45
Master of Arts—History.....	48
Master of Business Administration.....	51
Master of Music.....	55
Master of Science—Biology.....	59
Master of Science—Chemistry.....	61
Master of Science—Criminal Justice.....	60
Master of Science—Mathematics.....	62
Master of Science in Education—Counseling.....	68
Master of Science in Education—Educational Administration.....	74
Master of Science in Education—Master Teacher Elementary.....	80
Master of Science in Education—Master Teacher Secondary.....	84
Master of Science in Education—Special Education.....	87
Master of Science in Engineering.....	93
Master of Science in Engineering—Civil Engineering.....	95
Master of Science in Engineering—Electrical Engineering.....	96
Master of Science in Engineering—Materials Science.....	97
Master of Science in Engineering—Mechanical Engineering.....	98
Graduate Certificates.....	99
Graduate Certificate in Bioethics.....	99
Graduate Certificate in Professional Writing and Editing.....	100
Courses.....	101
University Policies.....	172
Graduate Faculty.....	179
Index.....	194
Campus Map.....	inside back cover

4 YOUNGSTOWN STATE UNIVERSITY

Ohio Board of Regents

	Term Expires
Paul M. Dutton.....	1996
Ralph K. Frasier, Chair.....	1996
Raymond T. Sawyer.....	1996
Jeanette Grasselli Brown.....	1999
Elizabeth K. Lanier, Vice Chair.....	1999
Thomas W. Noe.....	1999
Gerald H. Gordon, Secretary.....	2002
Tahlman Krumm, Jr.....	2002
Stephen A. Perry.....	2002
Elaine H. Hairston, Chancellor	

Youngstown State University Board of Trustees

	Term Expires
Nader G. Atway.....	1997
Edward A. Flask.....	1997
Mark E. Lyden.....	1998
Martin J. O'Connell.....	1999
Y.T. Chiu, Jr., M.D., Chair.....	2000
Bruce R. Beeghly, Vice Chair.....	2001
Ruth Z. Wilkes.....	2002
Eugenia C. Atkinson.....	2003
Joseph Nohra.....	2004
Chander M. Kohli,	2005
Franklin S. Bennett, Jr., Secretary	

Administrative Officers

- Leslie H. Cochran, Ed.D., President
James J. Scanlon, Ph.D., Provost
G.L. Mears, Ed.D., Executive Vice President
Cynthia Anderson, Ph.D., Vice President for Student Affairs

Academic Administration

- Barbara Brothers, Ph.D., Dean, The College of Arts and Sciences
Betty Jo Licata, Ph.D., Dean, The Warren P. Williamson, Jr., College of Business Administration
Clara M. Jennings, Ph.D., Dean, The College of Education
Charles A. Stevens, Ph.D., The William Rayen College of Engineering and Technology
David Sweetkind, Ph.D., Dean, The College of Fine and Performing Arts
John J. Yemma, Ph.D., Dean, The College of Health and Human Services

The School of Graduate Studies

- 3001 Jones Hall
(330) 742-3091
Fax (330) 742-1580
Peter J. Kasvinsky, Ph.D., Dean, School of Graduate Studies

The Academic Calendar 1996-97

Fall 1996

Date	Day	Time	Event
May 20	Mon.		Registration of current students begins
May 31	Fri.		Registration of current students ends
Aug. 15	Thu.		Last day to apply for admission
			Registration of admitted new and former students by appointment during summer
Sept. 2	Mon.		Legal holiday-University closed (Labor Day)
Sept. 21	Sat.		Change of registration begins
Sept. 19	Thu.		Registration of admitted new and former students (payment due at registration)
Sept. 20	Fri.		Late and final registration (payment due at registration)
Sept. 25	Wed.	8 a.m.	Classes begin
Oct. 1	Tue.	7 p.m.	Last day to add a class
Oct. 11	Fri.		Last day to apply for fall quarter graduation
Nov. 5	Tue.	7 p.m.	Last day to withdraw with a W
Nov. 11	Mon.		Legal holiday-University closed (Veteran's Day)
Nov. 27	Wed.	11 p.m.	Thanksgiving academic break begins
Nov. 28	Thu.		Legal holiday-University closed (Thanksgiving)
Nov. 29	Fri.		Legal holiday-University closed (observance of Columbus Day)
Dec. 2	Mon.	8 a.m.	Thanksgiving academic break ends
Dec. 9	Mon.	8 a.m.	Final examinations begin
			Deadline to submit theses to the School of Graduate Studies
Dec. 14	Sat.	5 p.m.	Final examinations end

Winter 1997

Nov. 12	Tues.		Registration of current students begins
Nov. 15	Fri.		Last day to apply for admission
Nov. 22	Fri.		Registration of current students ends
Dec. 30	Mon.		Registration of admitted new and former students (payment due at registration)
Dec. 31	Tues.		Change of registration begins
Jan. 2	Thu.		Late and final registration (payment due at registration)
Dec. 24	Tues.		Legal holiday-University closed (Christmas Day)
Dec. 25	Wed.		Legal holiday-University closed (observance of President's Day)
Jan. 1	Wed.		Legal holiday-University closed (New Year's Day)
Jan. 6	Mon.	8 a.m.	Classes begin
Jan. 11	Sat.		Last day to add a class
Jan. 24	Fri.		Last day to apply for winter quarter graduation
Jan. 20	Mon.		Legal holiday-University closed (Martin Luther King Day)
Feb. 15	Sat.		Last day to withdraw with a W
March 17	Mon.	8 a.m.	Final examinations begin
			Deadline to submit theses to the School of Graduate Studies
March 22	Sat.	5 p.m.	Final examinations end
March 29	Sat.	10 a.m.	Winter Commencement

6 YOUNGSTOWN STATE UNIVERSITY

Spring 1997

Feb. 17	Mon.		Registration of current students begins
Feb. 15	Sat.		Last day to apply for admission
Feb. 27	Thu.		Registration of current students ends
March 27	Thu.		Change of registration begins
March 25	Tues.		Registration of admitted new and former students (payment due at registration)
March 26	Wed.		Late and final registration (payment due at registration)
March 31	Mon.	8 a.m.	Classes begin
April 5	Sat.	Noon	Last day to add a class
April 18	Fri.		Last day to apply for spring quarter graduation
May 10	Sat.	Noon	Last day to withdraw with a W
May 26	Mon.		Legal holiday-University closed (Memorial Day)
June 9	Mon.	8 a.m.	Final examinations begin Deadline to submit theses to the School of Graduate Studies
June 14	Sat.	5 p.m.	Final examinations end
June 21	Sat.	10 a.m.	Spring Commencement

Summer 1997

May 12	Mon.		Registration of current students begins
May 15	Thu.		Last day to apply for admission-Summer I
May 15	Thu.		Registration of current students ends
June 19	Thu.		Change of registration begins
June 17	Tue.		Registration of admitted new and former students (payment due at registration)
June 18	Wed.		Late and final registration (payment due at registration)
June 23	Mon.	8 a.m.	Full-term and first-term classes begin
June 27	Fri.		Last day to add a first-term class
June 30	Mon.		Last day to add a full-term class
July 11	Fri.		Last day to apply for summer quarter graduation
June 30	Mon.		Last day to apply for admission-Summer II
July 4	Fri.		Legal holiday-University closed (Independence Day)
July 14	Mon.		Last day to withdraw with a W-first-term classes
July 26	Sat.		First term ends (final examinations are given during last scheduled class period)
July 28	Mon.	8 a.m.	Second-term classes begin
Aug. 1	Fri.		Last day to add a second-term class
Aug. 4	Mon.		Last day to withdraw with a W-full-term classes
Aug. 18	Mon.		Last day to withdraw with a W-second-term classes Deadline to submit theses to the School of Graduate Studies
Aug. 29	Fri.	10 p.m.	Second term and full term end (final examinations are given during the last scheduled class period)
Aug. 30	Sat.	10 a.m.	Summer Commencement

All registration is by appointment only and concludes before classes begin each quarter.

GENERAL INFORMATION

History

Youngstown State University is in downtown Youngstown, an industrial center in northeastern Ohio midway between Pittsburgh and Cleveland. YSU had its beginning in 1908 with the establishment of the School of Law of the Youngstown Association School, sponsored by the Young Men's Christian Association. From that point in history, YSU continues to grow:

- 1920: The State of Ohio empowered the school to grant the Bachelor of Laws degree. The school offered a four-year course in business administration.
- 1921: The school changed its name to The Youngstown Institute of Technology. Its first liberal arts classes were offered in the evening.
- 1927: The College of Arts and Sciences, offering daytime classes, was established.
- 1928: The Institute changed its name to Youngstown College.
- 1930: The College began to confer the Bachelor of Arts degree.
- 1941: Dana's Musical Institute, founded in nearby Warren in 1869, became the College's Dana School of Music
- 1944: YMCA trustees transferred control of the institution to members of the Corporation of Youngstown College
- 1946: The engineering department, organized several years earlier, became the William Rayen School of Engineering.
- 1948: The business administration department became the School of Business Administration.
- 1955: The Corporation of Youngstown College was rechartered as The Youngstown University.
- 1960: The department of education became the School of Education.
- 1967: The University joined the Ohio system of higher education and became Youngstown State University. A nine-member Board of Trustees was appointed by the Governor with concurrence by the Ohio Senate. As in the case of other state-assisted institutions in the Ohio higher education system, the University is also responsible to the Ohio Board of Regents.
- 1968: The Graduate School and the College of Applied Science and Technology were established.
- 1972: YSU, with The University of Akron and Kent State University, formed a consortium to sponsor the Northeastern Ohio Universities College of Medicine.
- 1974: The College of Fine and Performing Arts was established.
- 1981: The School of Business Administration was changed to the Warren P. Williamson, Jr., School of Business Administration.
- 1993: The University underwent academic reorganization and constituted itself into the following units: the College of Arts and Sciences, the College of Education, the College of Engineering and Technology, the College of Fine and Performing Arts, the College of Health and Human Services, the Warren P. Williamson, Jr., College of Business, the School of Graduate Studies, and the Northeastern Ohio Universities College of Medicine.

A coeducational institution, YSU had an enrollment of 300 students in 1930, which grew to 2,000 in the 1940s, tripled by the 1950s, reached 10,000 in the mid-sixties, and totaled more than 15,000 in 1986.

Degrees Granted

YSU grants the degrees of Doctor of Education, Master of Arts, Master of Business Administration, Master of Music, Master of Science, Master of Science in Education, Master of Science in Engineering, Bachelor of Arts, Bachelor of Engineering, Bachelor of Fine Arts, Bachelor of Music, Bachelor of Science, Bachelor of Science in Applied Science, Bachelor of Science in Business Administration, Bachelor of Science in Education, and Bachelor of Science in Nursing. A broad selection of two-year programs leads to the degrees of Associate in Arts, Associate in Applied Business, Associate in Applied Science, and Associate in Labor Studies.

8 YOUNGSTOWN STATE UNIVERSITY

Accreditation

The University is accredited by the North Central Association of Colleges and Secondary Schools and by appropriate professional accrediting bodies.

Mission

Youngstown State University strives to create a teaching and learning environment that promotes academic excellence, fosters intellectual growth and scholarship, focuses on the needs of students and the community, and reflects an awareness of cultural and global perspectives and concerns. The University is dedicated to outstanding teaching; to quality research and scholarly activity, both in the traditional sense and as they relate to classroom instruction and needs of the service region; to responsible public service addressing the employment and economic needs of the region as a whole; to providing knowledge, resources, and leadership to assist area schools, businesses, industries, agencies, and governments; and to taking measures to enhance the quality of life for the constituencies it serves.

Youngstown State University aspires to provide an environment in which students can enrich their minds, their creativity, and their problem-solving abilities, so that they may become fully developed individuals; informed, conscientious, and productive citizens; and responsible and understanding partners with others in life, family, and work. The University strives to prepare students for the future, that they may play active roles in shaping it. To these ends, the University seeks to integrate the best elements of the long tradition of humanistic, liberal education in the arts and sciences with education in the most significant advancements in technology, health, engineering, education, business, and the applied arts.

The University is committed to fostering an understanding of the connections among teaching, scholarship, and service. The University seeks faculty who combine these elements in ways that bring excitement to the classroom, studio, clinic, and laboratory, stimulating enthusiasm and eagerness for learning in students. The University endeavors to enhance the educational experience by providing out-of-class development and support as well as cocurricular opportunities and services. The primary test of the University's effectiveness is the high quality of its graduates, the kinds of lives they lead, their accomplishments, and their service to society. In this sense, teaching and learning, research and scholarship, University and public service are seen not only as interrelated but also as fundamental to endeavors both within and outside the University.

As a state-assisted metropolitan university, Youngstown State University provides a wide range of opportunities in higher education primarily, but not exclusively, to the residents of northeastern Ohio and western Pennsylvania. The University espouses the principles of equal opportunity, affirmative action, and broad access to education: academic access through open admission for all Ohio high school graduates to a wide range of programs; economic access through reasonable tuition and a comprehensive program of financial aids; and programmatic access through careful attention to the collective and individual needs of all its various constituencies: degree and nondegree students; transfer students; commuters and noncommuters; traditional and nontraditional students; associate, baccalaureate, master's, and doctoral students; as well as others encompassed by the Youngstown State University mission.

Affirmative Action Office Statement of Policy

Youngstown State University is committed to a policy of non-discrimination in sex, race, religion, color, age, national origin, disability, sexual orientation or identification as a disabled veteran, or veteran of the Vietnam Era, in respect to applicants for admission, students, employees, applicants for

employment and organizations providing contractual services to it. It operates in full compliance with the Civil Rights Act of 1964 as amended by Executive Order 11246; Title IX Regulations implementing the Education Amendment of 1972; Section 504 of the Rehabilitation Act of 1973; the Older Americans Act of 1965 as amended; and the Age Discrimination and Employment Act of 1967 as amended in 1978.

Although the ultimate responsibility for maintaining a viable and effective affirmative action program rests with the President of the University, the key role in its execution is delegated to the Director, Affirmative Action, who periodically reviews the program, discusses grievances and charges of discrimination if any, and makes recommendations toward the program's effectiveness. An Affirmative Action Committee serves in an advisory capacity.

The University uses all normal means of communication to make known its policies of affirmative action and equal opportunity employment.

Disability Services, located within Affirmative Action, delivers basic support services to students with disabilities. Any YSU student with a documented permanent or temporary disability may register with this office. Services for eligible students may include testing assistance, interpreters, use of a lounge for students with disabilities, advocacy, on and off campus referrals, registration assistance, classroom accommodations, limited reading and research assistance, and access to some forms of adapted equipment. For more information or to register with this office, call (330) 742-3370 or come to Room 2002 in Jones Hall.

The University is committed to the development and implementation of policies and programs that encourage the full participation of women, minorities, disabled, and Vietnam era veterans in all operations of the University.

The Campus

During its early years, the institution had a number of homes. Starting in the old Central YMCA building, it occupied various sites on Wick Avenue until the completion of Jones Hall in 1931. Additional buildings have been constructed and nearby properties converted to University use, so today the campus extends through most of an area four blocks long and three blocks wide, covering 125 acres.

Kilcawley Center was completed in 1966. The building contains dining rooms, meeting rooms, lounges, and recreational areas including rooms for billiards, table tennis, and television viewing. Student offices are included in the facility, as are a bookstore, a bank, facilities for various student publications, and the Multicultural Student Services Office.

In 1967, Ward Beecher Hall, a large addition to the Science Building, was completed. This structure contains laboratories, classrooms, a greenhouse, a planetarium, and offices for chemistry, biology, physics, and astronomy. The planetarium has the largest seating capacity (150 seats) in Ohio.

The University opened its Engineering Science Building in 1968. This building houses the William Rayen School of Engineering and Technology and the geology department. The structure contains an auditorium seating 268, a fluid-flow laboratory that extends two stories, and a chemical engineering chamber that extends three floors to accommodate absorption and distillation equipment.

In September 1970, the School of Business Administration Building, made possible by The University Foundation, Inc., was dedicated. Renamed Williamson Hall in 1981, the six-story structure houses classrooms and faculty and staff offices of the Warren P. Williamson, Jr., College of Business Administration.

10 YOUNGSTOWN STATE UNIVERSITY

Beeghly Physical Education Center was completed early in 1972. The building houses the Department of Health Sciences and the Department of Human Performance and Exercise Science. Its facilities include a large gymnasium with spectator seating and an Olympic-size swimming pool. There are seventeen classrooms, including laboratories for health research and kinesiology; separate gymnasiums for wrestling, weight lifting, gymnastics, and physical education for the handicapped; handball and squash courts; a dance studio; and a rifle range.

Cushwa Hall, completed in 1976, houses the departments and the dean of the College of Health and Human Services as well as the Media Center, WYSU-FM Radio, and the departments of Geography, Mathematics, and Social Work. The building contains 52 classrooms, 70 laboratories, 169 offices and 23 conference/seminar rooms.

A building to house the College of Arts and Sciences offices and classrooms, now named DeBartolo Hall, was occupied early in 1978. The departments of Economics, English, Foreign Languages and Literatures, History, Philosophy and Religious Studies, Political Science and Social Science, Psychology, and Sociology and Anthropology as well as the offices of the Dean, are located in this six-story structure. Also located in this building are five student lounge/study areas, a computer terminal room, and a 210-seat lecture hall with a stage.

Housing the College of Fine and Performing Arts, Bliss Hall was completed in 1976. Its facilities include the 409-seat theater, Ford Auditorium; the 237-seat Choral Recital Hall; an experimental theater with flexible seating for up to 250; 70 music practice rooms equipped with studio or grand pianos; a Schlicker performance organ and two Flentrop practice organs; 27 faculty office-studios that can be used for music instruction; a band/orchestra room with a library; a photography studio with 18 enlargers; a crafts studio with 18 weaving looms; fully equipped drawing, advertising, printmaking, sculpture, and painting studios; a complete shop with heavy equipment for working in three-dimensional design; art faculty office-studios; and a student lounge/art gallery. A \$2,940,000 interior renovation and ceramics/sculpture wing were completed in 1989. The McDonough Museum, completed in 1991, functions primarily as a gallery for art by YSU faculty and students.

Meshel Hall, dedicated January 1986, houses expanded facilities for academic and administrative computer use, broadens the YSU educational programs, and provides local business and industry with highly trained personnel. The state-of-the-art center is for instruction, research, and application in advanced computer technology, including computer-assisted design and robotics, that will serve the entire University community. The building contains 7 classrooms, 10 specialized computerized laboratories, 18 faculty offices, and a large atrium for student study. The fourth floor houses the University's main computer facilities and Computer Center staff, and the second floor houses the Bursar's/Cashier operations. The Harry Meshel Hall total project cost was \$15,000,000, which includes the structure, furnishings, and equipment.

The All-Sports Complex was opened in 1982. This facility, located on an 18-acre site adjacent to Beeghly Physical Education Center, includes a 16,000-seat stadium and a multipurpose sports field for football, field hockey, and soccer. The stadium, named for the late Arnold D. Stambaugh, houses offices, classrooms, gymnasiums, locker rooms, and athletic facilities.

The Phelps Building occupied in 1995, houses the Public Service Institute, University Outreach, and Office of International Student and Scholar Programs.

Academic Support Services

William F. Maag Library

The University's William F. Maag Library opened in January 1976. The six-story structure is an attractive and comfortable environment for study and research. A member of the Online Computer Library Center (OCLC), Maag Library provides reference and interlibrary loan services, CD-ROM as well as online database searching, access to government documents, and other services necessary to meet the needs of the University community. The library's online public access catalog (Innovative Interfaces, Inc.), with 43 terminals throughout the building, provides remote access from home or office.

Maag Library is a member of OhioLINK, a statewide library and information network linking university and college libraries throughout the state. OhioLINK provides straightforward, easy access to a combined catalog of nearly 5,783,329 records. The network also provides over 60 databases that can be searched for journal and newspaper articles. Other features of OhioLINK include patron-initiated borrowing, book and document delivery, and Internet access.

The library offers instructional and research materials in books, periodicals, microforms, CD-ROM, and sound recordings. These holdings number more than 642,750 bound volumes, 1,080,441 microforms, and 207,372 government documents. Periodicals, microforms, and micro-readers are housed on the first floor. A copy management center allows both self-service or operator-serviced copies. The second floor is the main floor, where most user services and library offices are located. Government Documents are on the sixth floor. The book collection is distributed throughout the second through sixth floors in open stacks, with split-level design between stack and reading areas. Study carrels and Scholar Studies are located on five of the floors.

With the relocation of over 9,000 phonorecords, audio and video tapes, et al from the Bliss Materials Center to the fifth floor, seven new media formats were added to the library's holdings in September, 1994. The Maag Library joins the ranks of all other Ohio benchmark universities by becoming a true audiovisual library. The collection now numbers over 10,000 items, over 9,000 of which are accessible via Maagnet. Since the move, the Center has improved its multi-media capabilities with the acquisition of new VCR's, a new Power Mac 7100 and Gateway 486 computers equipped with CD-ROM drives, and an Internet linkup to the World Wide Web through Netscape. The collection is strong in LP recordings of opera, jazz, and the collected works of J.S. Bach. In addition, the Multi-Media Collection contains over 6,000 phonorecords, 1,000 CD recordings, and 1,500 scores. Most of these items were already identifiable online, however, nearly 1,000 Rock music LP's and 2,300 ensemble scores and parts are still in the process of being uncataloged.

Computer Center

The Computer Center is a centralized computational facility that provides decentralized access to faculty, staff, and students. The Center occupies the fourth floor of Meshel Hall, an 87,000 square-foot advanced technology center. Serving both academic and administrative needs, the Computer Center operates an IBM 9672 Model R42 CMOS processor with one gigabyte (over one billion characters) of main memory. The IBM 9672 supports two state-of-the-art production environments via the OS/390 and VM/ESA operating systems. These environments provide online access to a high-performance RAID-5 disk array, providing a data storage capacity in excess of 158 billion characters. Application development utilizes the MODEL204 Relational database and VSAM files accessed through CICS. The computer complex is complemented by approximately 700 online devices, including terminals, personal computers, printers, plotters and projection systems. Telephone lines are provided for remote access off campus.

12 YOUNGSTOWN STATE UNIVERSITY

An Ethernet backbone runs through campus and connects workstations, personal computers, Maag Library's computer system and the IBM 9672 to the Internet. Network access is also available in Cafaro House, the newest on-campus student residence facility. This network will be expanded over the next few years to allow network connections to dorm rooms, classrooms, labs, offices, etc., throughout the campus.

Personal computers are available on campus for instruction and research. The personal computers in Meshef Hall are connected to the campus Ethernet network. Networked personal computers allow access to local software, as well as to other facilities on campus, such as Maag Library and Youngstown Free-Net, and to Internet sites worldwide. Implementation of the first phase of the "Electronic Campus" five-year computing plan has begun. The Electronic Campus will provide faculty, staff and students the opportunity to use global and local computer networks and current generation computer hardware and software.

Full-time professional staff and part-time student assistants are available for consultation on course work and research projects.

International Study & Scholar Programs

YSU currently hosts students and scholars from over 50 countries through programs in the Office of International Student and Scholar Programs (ISSO.) ISSO is an office of The Center for International Studies and Programs, which also administers the institution's study abroad and other exchange agreements, a full-time English Language Institute, and community-related international activities. The Center also supports efforts by faculty to internationalize classes, hosts offices for the YSU chapter of Phi Beta Delta Honor Society for International Scholars, and YSU's International Student Association.

ISSO administers programs and activities with foreign governmental and international sponsoring agencies, as well as U.S. Immigration and Naturalization Services, and the U.S. Information Agency. The office provides information and assistance regarding foreign students' and scholars' entry and arrival for study or research, during their educational programs, and when returning to their home countries. It also provides individual program planning assistance to participants and sponsors for academic, career, cultural, and immigration-related matters, and cross-cultural orientation and training to facilitate international education. More information may be obtained at ISSO, 128 Phelps Building.

Office of University Outreach

The Office of University Outreach develops and administers courses and programs outside the traditional degree programs through Continuing Education, Education Outreach, Edutavel, and the Center for Creative Retirement. Through both credit and noncredit course offerings at a variety of convenient times and locations, it makes academic programs, along with administrative and support services, available to nontraditional students and regional workplaces. Through University Outreach, YSU attempts to make the lifelong process of education possible for the adult with family and work obligations.

YSU offers degree and nondegree programs, courses, conferences, and seminars, all specifically designed and planned to meet the varied needs of adults. The University has the flexibility to build a schedule that is both comfortable and convenient for adults.

The **Continuing Education** noncredit programs offer area residents a wide variety of adult study or lifelong-learning courses and seminars to meet the needs for a changing society for professional updating and upgrading, for mid-career adjustments, and for lifestyle changes.

Area residents participate annually in more than 200 noncredit programs, many of which are in the academic disciplines and professional areas, varying from half-day seminars to multiweek courses, conducted in local business and government settings and other off-campus locations as well as on campus.

Education Outreach coordinates the off-campus delivery of credit classes throughout the service area at instructional settings, including business, agency or community locations. Evening off-campus credit programs are designed for people who find the traditional daytime courses on campus inconvenient. They permit students, with or without prior credit, to take courses for an undergraduate degree during evening or weekends or both.

Edutrapel provides adults with the opportunity to explore cultural learning by visiting foreign countries to experience other lands and cultures. Travel-study programs in this series provide on-site lectures, seminars, and field experiences and include visits to sites and facilities often unavailable to the average tourist.

The **Center for Creative Retirement** provides area seniors with several opportunities to pursue their educational objectives. The College for the Over-Sixty is a state-mandated program providing for the enrollment of Ohioans 60 years of age or older who have been state residents for the preceding 12 months in undergraduate credit classes on a space-available basis. Through the YSU-ILR, an affiliate of the Elderhostel Institute Network, seniors have the opportunity to develop, instruct, and participate in educational programs and social activities designed for this membership-based organization. During the summer, the YSU-Elderhostel provides seniors with weeklong residential learning and social experiences through Elderhostel-approved offerings.

Further information may be obtained from the Office of University Outreach, Room 009, Phelps Building; (330) 742-3221; for noncredit programs, (330) 742-3358.

Student Support Services

Career Services

The University maintains a comprehensive Career Services Office to provide professional assistance to students and alumni in all areas of career decision-making and searching for a professional job. Students are encouraged to contact Career Services early in their course of study and professional job search in order to obtain maximum benefit of services available. Individual career counseling, computerized interactive programs, a comprehensive resource information center, and skill-development programs are among the services offered. Credential services are also provided to certified teachers applying for positions or further educational opportunities.

The office is a member of the National Association of Colleges and Employers, Inc. National, regional, and local employers actively recruit students and alumni through the various programs offered at Career Services. Students are also assisted in finding employment while enrolled in the University, both on- and off-campus. Graduate students enrolled in degree programs are eligible for on-campus employment.

The Career Services Office has an information center that includes career and organization materials from more than 1,000 employers. More than 300 videotapes with career and employer information are also available. Career and Job Fair days are presented through the year, as are seminars on job searching, resume writing, and interviewing. More information may be obtained at the Career Services Office, 3025 Jones Hall.

14 YOUNGSTOWN STATE UNIVERSITY

Student Health Service

The Student Health Service is maintained by the University to provide most routine health care to students in need of medical assistance. Its staff consists of registered nurses and licensed physicians. The cost of the service is included in the general fee; however, outside laboratory and diagnostic testing is the student's responsibility.

A voluntary group accident-and-sickness insurance is available at the time of initial registration each quarter. A brochure explaining this program is available at the Student Health Service and Bursar's offices. All foreign students who are not permanent residents of the United States and all residents of University-owned housing are required to participate in this or a comparable program of health and accident insurance during their entire period of enrollment at YSU.

Counseling Services

The Youngstown State University Counseling Center staff includes licensed psychologists, a professional counselor, a certified chemical dependency counselor, and counselors in training. All professional staff are experienced and specialize in working with college students. Issues addressed by our staff include problems with adapting to college, academic progress, career choices, alcohol/drug problems, family and/or marital problems, abuse issues, eating disorders, or other personal issues. Counseling services are provided at no cost to YSU students, faculty, and staff.

The Counseling Center also provides a wide range of prevention/education programs, and assessment, intervention, consultation, and referral services. Outreach programming is available to the campus community and includes programming in areas such as: alternatives to alcohol and drug use, rape prevention, stress and relaxation, well and health issues, communication and listening skills, conflict resolution, relationship issues, dysfunctional versus functional families, common psychological difficulties, depression, career indecision, and other related substance use/mental health issues.

We also have a resource library containing books, reference materials, research papers, pamphlets, brochures, posters, and videos on various substance abuse, holistic health, and related topics. These materials are available to faculty for classroom use and to students for class papers, class projects, and/or personal use.

All information obtained as part of a counseling/consultative relationship is confidential. No information is released to officers of the administration, faculty members, parents of students age 18 or older, or to outside agencies without the express written authorization of the client. Exceptions to confidentiality occur when there is a clear and immediate threat to the life or welfare of the student or the community, child or elder abuse, or as court ordered. Information obtained during the course of counseling remains confidential and in no way reflects on the student/faculty/staff person's record.

The University Counseling Center is located in Room 3046 of Jones Hall and can be reached by calling (330) 742-3056 or 742-3322. The resource library is located in Room 3049 of Jones Hall and is open daily.

Veterans

Efforts are made to give all necessary guidance and assistance to military veterans and others eligible for VA educational benefits. Additional information may be obtained by contacting Financial Aid, 2013 Jones Hall, (330) 742-3508.

Alcohol and Drug Abuse Prevention Program

YSU is committed to a campus free of unlawful drug use and alcohol abuse. The policy outlining YSU's Alcohol and Drug Abuse Prevention Program is printed in the "University Policies" section of this catalog.

Bookstore

The Youngstown State University Bookstore is located at the west end of the Kilcawley Center complex. The bookstore is a full-service operation that carries required texts and supplies as well as a wide array of emblematic apparel, gifts, stationery, specialty items, and an extensive trade and general book area. The in-house computer store sells computer hardware and software.

Housing

Kilcawley House was constructed in 1965 and recently refurbished. Housing 240 students, Kilcawley House is located in the heart of the YSU campus. The location provides students with the convenience of Kilcawley Center, the library, academic resources, and much more right outside their doors. Each floor has a comfortable lounge and central restroom with multiple private showers, mirrors, and sinks. Kilcawley residents live in double-occupancy rooms, complete with bunk beds, wall-to-wall carpeting, built-in desks, telephones, and plenty of closet and drawer space. Single-occupancy rooms are available for graduate students with the same furnishings as a double-occupancy room.

Kilcawley House includes a computer lab and a large quiet study lounge. A spacious recreation room with a variety of activities such as billiards, ping pong, and foosball, a big-screen TV and VCR, and fitness equipment such as Stairmasters and exercise bikes is also available. Living on campus offers independence in modern, comfortable rooms with contemporary furnishings, front-desk security, convenient food service, laundry facilities, and a friendly housing staff.

Lyden House opened in the fall of 1990 with an impressive five-story collegiate gothic-style structure. Located just north of campus along Madison Avenue, Lyden houses 300 students. A typical student room is double occupancy, measuring approximately 12' by 17', and contains a set of bunk beds, which can be stacked or separated. Each student is provided with a desk and chair, a dresser, a shelving unit, and an armoire wardrobe unit. The furniture is uniquely designed to suit the individual student's taste and personal decor. Rooms also feature individually controlled heating as well as air-conditioning units, decorator vertical window blinds, overhead lighting, and tiled floors. All rooms in Lyden are handicapped-accessible. Each wing of this beautifully designed residence hall includes convenient showers and restrooms, quiet study rooms, and comfortable conversation lounges. Students have full access to a kitchenette/vending area and laundry facilities. Convenient parking is also available next to Lyden House.

Cafaro House is a residential honors house located next to Lyden House at Madison Avenue and Elm Street. This facility is designed to house University Scholar students, University Honors Program students, BS/MD students, and other student scholars. This facility opened Fall, 1995. Cafaro House features an academic wing where classes are held.

Wick House and **Weller House**, located along Wick Avenue, have a unique historical setting next to the Arms Museum and near The Butler Institute of American Art. Both houses were purchased by the University and completely renovated. Renovations include new energy-efficient windows, heating and air-conditioning units, carpeting, and lighting. Furnishings provided to each student are similar to those listed for Lyden House residents. Each house can accommodate up to 40 students.

16 YOUNGSTOWN STATE UNIVERSITY

Weller House opened in the fall of 1991, offering apartment-style on-campus living facilities. Each unit has a full bathroom with a tub and/or shower, a kitchen furnished with modern cabinets, an electric range, a refrigerator/freezer, a garbage disposal, and a dining table. Apartments vary in size and are designed to accommodate two to five students. Weller also offers students a comfortable group lounge and convenient laundry facilities.

Wick House, offers the traditional architecture style of the turn of the century. This fully renovated mansion boasts four floors and features a breathtaking, historically preserved dual staircase. It offers women students a wide variety of housing options, ranging from single-occupancy rooms to rooms accommodating four students. Residents share showers and restroom facilities. Wick House residents enjoy security monitoring, a conversation lounge, and laundry facilities.

Applications for University housing can be arranged by contacting the Housing Services Office, Room 100, Kilcawley House, or by calling (330) 742-3547.

Campus Dining

Students residing in Kilcawley, Lyden, Wick, and the Cafaro houses have a choice of meal plans as part of their room-and-board package. All plans allow for all-you-can-eat breakfast, lunch, and dinner Monday through Friday, plus brunch and dinner on Saturday and Sunday. Weller House residents may purchase an optional meal plan package that fits their needs. Residents can eat on campus in the spacious Christman Dining Commons, Taco Bell Express, or the Terrace Food Court or Penguin Express.

Kilcawley Center

Kilcawley Center is the community center of the University for all the members of the University family students, faculty, administration, alumni, and guests. It is not just a building; it is also an organization and a program. It represents a well-considered plan for the community life of the University. As the living room or the hearthstone of the University, the Center provides the services, conveniences, and amenities that the members of the University family need in their daily campus life and facilities for getting to know and understand one another through informal association outside the classroom.

Kilcawley Center is part of the educational program of the University; it serves as a laboratory of citizenship, training students in social responsibility and leadership in a democratic society. Through its various boards, committees, and staff, it provides a cultural, social, and recreational program, aiming to make free-time activity a cooperative factor with study in education. In all its processes, it encourages self-directed activity, giving maximum opportunity for self-realization and for growth in individual social competency and group effectiveness. Its goal is the development of persons as well as intellects.

Kilcawley Center attempts to meet the diversified needs of the University community in its food service options. The Terrace Food Court opens at 7:00 a.m. with a full breakfast menu. Lunch is available 10:30 a.m. - 2:30 p.m. with a variety of menu options including the Penguin Grill, a full salad bar, fresh baked pastries, Colombo yogurt, fresh cut french fries, deli style sandwiches, and rotisserie foods. Taco Bell Express opens 10:00 a.m. - 2:30 p.m. The Noodles Restaurant offers a wood fired oven featuring pizza and pasta specialties. Hours of service are 11:00 a.m. - 2:00 p.m. Pizza is the theme at the Pub, open 8:00 a.m. - 9:00 p.m., offering both whole wheat and New York style pizza daily in addition to their morning breakfast menu. Arby's is more than just roast beef with a full menu including breakfast 7:00 a.m. - 8:00 p.m. Residents and commuters are welcome at Christman Dining Commons, a satellite food court style operation, located directly behind Lyden and Cafaro Houses.

THE SCHOOL OF GRADUATE STUDIES

Development and Organization

On March 28, 1967, the Trustees of The Youngstown University authorized the President and faculty of the University to begin developing graduate programs at the master's degree level, starting in the fall of 1968. In May 1967, the Faculty Senate of The Youngstown University authorized the development of master's degree programs in various academic departments of the University. At its first meeting on August 15, 1967, the Youngstown State University Board of Trustees established the office of the Dean of the Graduate School and the general regulations governing the appointment of a graduate faculty. It also identified and authorized the initial graduate degree programs that were to be offered. These programs gained approval from the Ohio Board of Regents on December 15, 1967. Preliminary accreditation was given by the Commission on Colleges and Universities of the North Central Association of Colleges and Secondary Schools in July 1968; continued accreditation was awarded in 1974, 1978, and 1988. The School of Graduate Studies is a member of the Council of Graduate Schools in the United States and the Midwestern Association of Graduate Schools.

The School of Graduate Studies is administered by a Dean who is also a member of the Graduate Council. The elected members of the Graduate Council consist of one representative from each of the University's colleges that offer graduate programs, two faculty members-at-large elected by the Graduate Faculty, and one representative from the Graduate Student Advisory Committee. Standing committees of the Graduate Council are Curriculum; Graduate Faculty Membership; Policy; Assistantships Allocation Committee; and Graduate Student Grievance.

Graduate Programs

The graduate degree programs offered by Youngstown State University are:

- Doctor of Education (Educational Leadership)
- Master of Arts (Economics, English, History)
- Master of Business Administration (Accounting, Finance, Management, Marketing)
- Master of Music (Performance; Music Theory and Composition; Music History and Literature; Music Education)
- Master of Science (Biology, Chemistry, Criminal Justice, Mathematics)
- Master of Science in Education (Master Teacher Program for Elementary and Secondary School Teachers; Educational Administration; Counseling; Special Education)
- Master of Science in Engineering (Civil; Electrical; Mechanical; Materials Science)
- Early Placement Program for Ph.D. in Engineering with Akron University.

Admission

Admission to the School of Graduate Studies is granted by the Dean of Graduate Studies upon recommendation of the department in which the applicant wishes to do major work. Students in combined baccalaureate/master's programs must follow standard procedures for admission to the School of Graduate Studies. Admission is required before registration in any course for graduate credit. (See also "Graduate Courses for Undergraduates.")

The complete application for admission, including supporting materials, should be received by the School of Graduate Studies at least four weeks before the beginning of the term in which the applicant plans to register. YSU admits graduate students in the fall, winter, spring, and summer quarters, except foreign students and students majoring in Counseling, who must enter only during the fall or spring quarters.

18 YOUNGSTOWN STATE UNIVERSITY

Application Procedure

Application for admission is made on a form provided by the School of Graduate Studies, which can be requested by writing to the Dean of Graduate Studies, Youngstown State University, Youngstown, Ohio 44555-3091.

The completed application form is submitted with the application fee to the Bursar's office. Applicants must send one transcript from each college or university attended, except YSU, to the School of Graduate Studies. Transcripts must be sent directly from the institution. Personal or unofficial transcripts issued to the student or those delivered or sent by the applicant instead of the institution will not be accepted.

Applications for admission cannot be reviewed until official transcripts of all previous college or university work are received. The applicant must see that these reach the School of Graduate Studies at the earliest possible date. Omission of information on the application form will necessitate requests for additional information and therefore delay processing of the application, so the applicant should provide all the information requested in the first submission of materials. International applicants should also see the section International Student Admission for additional requirements.

As soon as possible after receipt of application materials, the Graduate Dean will notify the student of the action taken on the application and, if the student is admitted, will provide information on registration procedures.

Test Information

In certain master's programs, test results must be submitted as part of the admissions procedure. The registration forms and deadline dates for the Graduate Record Examination and the Graduate Management Admission Test may be secured from the Testing Center at YSU, but the applicant must register for the test with the Educational Testing Service, Princeton, New Jersey. Arrangements for taking the Miller Analogies Test on campus should be made directly with the Testing Center.

Admission Requirements

Minimum requirements for admission to the School of Graduate Studies are:

- 1) A bachelor's degree from an accredited college or university.
- 2) An unrecalculated cumulative grade-point average in undergraduate work of at least 2.5 (on a 4.0 scale). If an undergraduate course has been repeated, all grades received will figure in the calculation of the grade-point average.
- 3) Satisfactory preparation for the graduate program in which the student wishes to enroll as specified by the department of the major.
- 4) A test of written/spoken English, which the University reserves the right to request, of any entering graduate student whose primary language is not English.

The applicant is reminded to check specific admission requirements of the program in which he/she wishes to enroll to determine whether there are any additional requirements.

Types of Admission

Regular

Regular admission will be granted to a student who satisfies the admission requirements for the master's program in which he/she wishes to enroll.

Provisional

Upon recommendation of the person in charge of the program involved and subject to the approval of the Graduate Dean, a student may be accepted with provisional admission if his/her undergraduate record shows slight deficiencies compared to the admission requirements of the program to which the student seeks entrance. Students who are admitted provisionally may be required to make up deficiencies by taking appropriate undergraduate courses without graduate credit. The academic record of all provisional students will be reviewed when 12 quarter hours of degree-credit coursework have been completed. The advisor will change the student's status from provisional to regular if those deficiencies have been made up and the student's record justifies such a change. The advisor will report the change to the Graduate Dean on the Change of Status form.

Nondegree

Students with a bachelor's degree who wish to register for courses but do not expect to work toward an advanced degree may be admitted to the School of Graduate Studies as nondegree students. Such admission is granted by the Graduate Dean upon recommendation of the department to which the student seeks entrance. A maximum of 12 credits earned as a nondegree student may be applied toward a degree if the student later decides to pursue an advanced degree, if he/she is accepted by the department in which he/she wishes to study, and if the department's recommendation is approved by the Graduate Dean.

Special Nondegree

An individual who does not wish to participate in a specific graduate program or to be assigned to an advisor in a program may be considered for admission as a special nondegree student by the Graduate Dean. The special nondegree student must meet the prerequisites of courses before enrolling in them. A maximum of 12 quarter hours earned as a special nondegree student may be applied toward a degree if the student later decides to pursue an advanced degree, if the student and his/her credits are accepted by the department in which he/she wishes to study, and if the department's recommendation is approved by the Graduate Dean.

Restricted

Students who wish to take a workshop for graduate credit but who have not completed the regular School of Graduate Studies admission process will be permitted to register in the School of Graduate Studies as restricted graduate students. Such permission is granted by the Graduate Dean through the workshop representative upon receipt of a completed Workshop Registration form, which includes a statement signed by the applicant that a baccalaureate degree has been received. Graduate workshops designated as restricted are graded on a satisfactory/unsatisfactory (S/U) basis.

Workshop courses, upon approval of the graduate advisor, may later be applied to degree work if regular admission to the School of Graduate Studies is obtained and if those courses are part of the degree program. Workshop courses are those specifically designated as such in the graduate catalog or by the Graduate Council.

20 YOUNGSTOWN STATE UNIVERSITY

Transient

Transient admission may be granted to a student who is in a degree program at an accredited graduate school. The student must submit a graduate transient student form, signed by the dean of the graduate school to which he/she wishes to transfer credit, showing that he/she is a graduate student in good standing. The form to be used in such cases may be secured from the YSU School of Graduate Studies office. Under some circumstances, transient admission may be renewed for a second quarter, but the graduate deans of both universities must approve the renewal. If a transient student later wishes to become a regular graduate student, he/she must be admitted to a degree program by following the usual admission procedures.

Transfer Credits

Master's Degree: Up to 12 quarter hours (8 semester hours) of graduate work completed at other accredited institutions may be applied toward a master's degree at YSU, provided the student earned a grade of A or B in such courses.

Doctoral Degree: Up to 24 quarter hours (16 semester hours) of post-master's degree graduate work completed at other accredited institutions may be applied toward a doctoral degree at YSU, provided the student earned a grade of A or B in such courses.

Credits for courses in which grades of S or CR were received will not be transferred. The number of transfer credits to be accepted in each case will be determined by the Graduate Dean upon evaluation and recommendation by the department of the student's major. The student is responsible for initiating a request for the approval of transfer credits. Transfer hours are not included in the calculation of the student's cumulative grade-point average.

Transfer hours will be considered for acceptance at the time of application/acceptance to the School of Graduate Studies. After admission to a program of study, a student who wishes to attend another university to complete coursework toward a YSU graduate degree must complete the Request for Transient Status form available from the Office of Graduate Studies in order to transfer credits to a YSU degree.

In general, workshop format courses are not acceptable for transfer. Professional development workshops are not acceptable. However, if the workshop fulfills the following requirements, credit may be considered for transfer to Youngstown State University.

- 1) The workshop must be taught as part of a master's degree curriculum of the university at which the course was taken;
- 2) The workshop should consist of 30 contact hours (10 contact hours per quarter hour) for a 3-quarter hour course;
- 3) The workshop must include exposure to the disciplinary research literature appropriate to the course;
- 4) The workshop must include the opportunity for outside work such as term or research papers or other major assignments appropriate to a graduate course.

International Student Admission

To be considered for admission, international applicants must provide all materials required at least three months before the quarter they wish to enter. In addition to the regular admission requirements,

the following must also be submitted:

- 1) A true or certified copy of the degree earned and all course and examination records, including grades received, beyond the secondary-school level.
- 2) A minimum score of 550 on the Test of English as a Foreign Language (TOEFL) administered by the Educational Testing Service, Princeton, New Jersey, by graduates of foreign universities who are non-native English speakers; or, a minimum score of 84 on the Michigan English Language Battery (MELAB) administered by the English Language Institute, Ann Arbor, Michigan. Before full admission to academic study, students are tested and placed in special English classes, if necessary, to ensure an adequate level of English proficiency.

For F-1 or J-1 visa certification:

- 3) Evidence of financial support and sponsorship during the period of study at YSU, including documents of verification.
- 4) A Visa Clearance form from the last school attended for international applicants who have attended another U.S. academic or language school.

YSU enrolls students in accordance with the policy of the United States Immigration and Naturalization Service.

Registration

Advisement

Before initial registration, the student must consult with the faculty member in charge of the program to which the student has been admitted or with an assigned advisor for advice in developing a program of study that leads to the desired degree. The ultimate responsibility for selection of graduate courses, based upon the requirements of the student's program as set forth in the catalog, remains with the student. Continued consultation with the advisor is encouraged. Because of the nature of certain programs, an advisor may require consultation before each registration.

Registration Procedure

Students register through the SOLAR (Student Online Advisement and Registration) system. Appointment times are mailed to all students by the Registrar's Office. Appointment times for current students are also published in the quarterly Schedule of Classes.

Registration is not completed until all tuition and fees are paid. Nonpayment of tuition and fees by the due date results in schedule cancellation. Registration must be concluded no later than the date published for the Late and Final Registration for the particular quarter. All significant dates are published in the catalog and in the Schedule of Classes for each specific quarter.

Change of Registration

A registered student who wishes to alter a schedule must complete a Change of Registration form and submit it to the Registrar's office. A Change of Registration fee is charged to the student's account.

22 YOUNGSTOWN STATE UNIVERSITY

No student may add a course for credit or audit after the seventh calendar day of the quarter or after the fifth calendar day of a summer term.

Withdrawal from a course must be accomplished through the Change of Registration procedure. Failure to attend class or notification to an instructor is insufficient. A grade of F will be recorded unless a student officially withdraws. If a student withdraws from one or more classes during the first two weeks of classes, no entry will be made on that student's permanent record for the withdrawn class(es).

Complete Withdrawal of Registration

The student who wishes to withdraw from all classes in a particular quarter must follow the same procedure as in Change of Registration. If a student withdraws from all classes during the first two weeks of the quarter, the academic record will contain the statement: Student Completely Withdrew During the First Two Weeks of the Quarter. The student who withdraws from all classes will automatically receive a permit to register for the subsequent four quarters.

Other Regulations

Time Limit

Master's Degree: All work, including transfer credits, completed to fulfill the minimum credit-hour requirement for the degree must have been taken within the six-year period immediately preceding the date on which the last requirement is completed.

Doctoral Degree: All post-master's coursework, including transfer credit, must be taken within an eleven-year period.

In special cases, the Graduate Dean may grant an extension of the coursework time limit upon the written request of the Chair of the department of the master's or doctoral study.

Matriculation to Doctoral Candidacy: Doctoral students shall be granted a six-year period to complete the general examination successfully and acquire candidacy status.

Doctoral Candidacy to Final Dissertation Copy: Doctoral candidates will have five years from the acquisition of candidacy status to filing the final dissertation copy. Failure to meet this time frame will result in cancellation of the candidacy. With the approval of the advisor and the Graduate Studies Committee, the student may take a supplemental general examination to reacquire candidacy. If the supplemental general examination is passed, the student is readmitted to candidacy and must complete the dissertation within two years. The supplemental general examination may not be repeated more than once.

Graduate Courses

Courses in which graduate credit may be earned are:

- 1) 1100-level courses, which are for doctoral students only.
- 2) 900- and 1000-level courses, which are open to master's students (see "Graduate Courses for Undergraduates"). At least one-half of the credits applied toward the master's degree must be earned in courses in the 900- and 1000-series.

3) Upper-division undergraduate courses (800-level), in which the student may enroll for graduate credit only with the approval of the advisor.

Only certain upper-division undergraduate courses may be taken for graduate credit. Those in this category are listed in the "Courses" section of this catalog. To earn graduate credit in an upper-division course, the student must be admitted to the School of Graduate Studies before the course is taken. Graduate students in undergraduate courses that offer graduate credit may be expected to pursue the subject matter in greater depth than the undergraduate student. This may require additional work assignments.

Graduate students may register for 700-level or lower courses, but these courses do not apply toward the requirements of a graduate degree. Although the grades received and quarter hours for such courses appear on the student's record, the hours and quality points are not included in the student's cumulative totals.

Seminar

A seminar generally consists of a group of advanced students studying a subject under a professor, each making some pertinent contribution and all exchanging results through informal lectures, reports, and discussions.

Thesis or Dissertation

Certain programs accept or require a thesis or dissertation as partial fulfillment of the requirements for the degree. Students follow the style manual used by the field as determined by the department. The deadline to submit theses is the first day of final examinations of the graduating quarter. Additional thesis and dissertation presentation information is available from the School of Graduate Studies and individual departments.

Second Master's Degree

A student who has a master's degree from YSU and desires a second master's degree must earn a minimum of 18 quarter hours of credit in addition to the total that the student had when requirements for the first degree were completed, and he/she must complete the requirements for another graduate program. Students with a master's degree from another university will be limited to a maximum of 12 quarter hours of transfer credit.

Interrupted Enrollment

Students who interrupt their attendance for four or more quarters (one calendar year) must apply for readmission as former students at least two weeks before Late and Final Registration. Graduate students who have not attended for six years must also pay a readmission fee.

Graduate students who fail to take courses or otherwise pursue their graduate education for two years will be readmitted only under regulations in force at the time of reapplication.

Academic Standards

A cumulative grade-point average of at least 3.0 (on a 4.0 scale) is required for graduation. All graduate credit courses taken at YSU are included in the grade-point average calculation (see Grading System for grades less than C.) Good academic standing for graduate students is maintained by earning a cumulative grade-point average of at least 3.0 (on a 4.0 scale) for all graduate courses taken at YSU.

24 YOUNGSTOWN STATE UNIVERSITY

Satisfactory Academic Progress

Satisfactory academic progress at the graduate level is maintained by satisfying the following criteria:

- 1) A graduate student's ability to earn the minimum credit hours necessary to the program with a minimum grade-point average of 3.0 (on a 4.0 scale.) Any course grade of D or F must be repeated and passed with a grade of B.
- 2) A graduate student's ability to meet successfully the requirements including the time requirement of all comprehensive examinations of the degree program.
- 3) A graduate student's ability to complete with a passing grade any thesis requirements (or the equivalent) of the degree program.

Academic Suspension

A graduate student who is not maintaining satisfactory academic progress as determined by the graduate academic program director or department chairperson and graduate dean may be excluded from registration and dropped from the program in which he or she is enrolled. Such action constitutes academic suspension from the School of Graduate Studies.

Academic suspension is automatic if:

- 1) the cumulative grade point average is below the minimum after two quarters during which the student registered "not in good standing."
- 2) the student fails to pass a comprehensive exam after three tries.

Registration for any session or continuous registration during a full summer counts as one quarter for these purposes.

A graduate program may utilize additional academic standards to determine satisfactory academic progress and/or standards for academic suspension; however, such standards must be distributed in writing to all graduate students in the program and must be filed and approved by the Dean of Graduate Studies.

Readmission Procedures

- 1) Under exceptional circumstances and with the approval of the Dean of Graduate Studies, a program may readmit a suspended student. In such cases, the normal six-year limitation on coursework shall be applied.
- 2) Graduate students suspended for failing to maintain satisfactory academic progress may appeal their suspensions within one year in writing to the Graduate Council. The decision of the council is final.
- 3) After a period of one year, a graduate student who has been suspended for academic reasons may reapply to the School of Graduate Studies in order to begin a new degree program or to pursue studies in non-degree status. A readmitted graduate student is not permitted to register for any courses offered by the program from which he or she was academically suspended.

Full-Time Status

A full-time student is one carrying eight or more hours for credit. However, graduate students who complete less than 8 quarter hours per quarter may lose eligibility for federal financial aid as a full-time student.

Reduced Load for Employed Students

The School of Graduate Studies recommends that the employed student carry less than a full academic load as determined in consultation with the major advisor or Graduate Committee.

Graduate Courses for Undergraduates

The Application by Undergraduate to Enroll in a Graduate Course form is available in the School of Graduate Studies office. Students may choose to take such courses for graduate or undergraduate credit.

For Graduate Credit

An undergraduate student who has senior standing and an unrecalculated grade-point average of at least 2.7 and who does not require a full schedule to complete the baccalaureate degree requirements at YSU may enroll in 900- and 1000-level courses for graduate credit, provided such enrollment does not cause the total schedule for the quarter to exceed 16 quarter hours. Before registering for courses, the student must have the approval of the advisor, the instructor of each course, and the Graduate Dean. The credit earned cannot be counted toward fulfillment of the requirements for a bachelor's degree and may not be used for graduate credit at YSU until the student is admitted to the School of Graduate Studies and the credit is accepted by the department in which the student continues graduate work. The maximum amount of such credit acceptable at YSU is 15 hours.

For Undergraduate Credit

Permission to undergraduates to enroll in graduate courses for undergraduate credit will be granted only to students with proven exceptional academic ability. Such permission will be based on a petition prepared by the student's major department containing a statement of criteria used to determine exceptional ability and approved by the Chair of the department offering the course and the Graduate Dean.

Grading System

The following grading system is used in reporting a final evaluation of the work of graduate students in courses or thesis research: A, B, C, D, and F. The grade-point equivalents are 4, 3, 2, 1, and 0, respectively.

Grades of D and F carry no graduate credit but will be used to determine the student's grade-point average. Failure will normally be indicated by a D. A grade of F indicates that the student has not achieved even a minimum grasp of the essentials of the course; this grade can also result from failure to withdraw officially from a course (see "Change of Registration and Reduction/Refund of Fee Charges Upon Withdrawal"). A student has the privilege of repeating a course once, but the repetition is treated merely as another course, along with the first, in calculating the student's grade-point average.

On petition by the student and concurrence of the advisor and program director, the Graduate Dean may approve the exclusion of courses that do not apply to the current degree program from the calculation of the student's grade-point average.

26 YOUNGSTOWN STATE UNIVERSITY

Graduate workshops designated as restricted are graded on a satisfactory/unsatisfactory (S/U) basis.

A grade of I (incomplete) may be given to a student who has been doing satisfactory work in a course but, for reasons beyond the student's control and deemed justifiable by the instructor, has not completed all requirements for a course when grades are submitted. A written explanation of the reason for the I and a date by which all course requirements will be completed, which must be within one year, will be forwarded to the Registrar for inclusion in the student's permanent record; copies will also be provided to the student and the Chair of the department. The instructor will initiate a grade change upon completion of the course requirements. If no formal grade change occurs within one year, the I automatically converts to an F; if graduation occurs within this one-year time period, the I grade will be converted to an F before graduation. Department Chairs are granted authority to convert grades of I into final grades in cases where instructors may have severed connections with the University or have been incapacitated before converting the grade.

The grade of W will be given for all withdrawals properly processed during the third through sixth weeks of any quarter or from the fifth calendar day through the third week of each five-week summer term. ("Properly processed" describes withdrawals made in conformity with the instructions on the Change of Registration form.) A grade of W does not appear on the student's academic record if withdrawal occurs before the end of the second week of classes, although it does appear on the grade report received by the student. A withdrawal made after the three- or six-week period will be recorded as an F unless the withdrawal was the result of circumstances over which the student had no control as shown by evidence presented by the student in a petition to the Graduate Dean. Any grade of F assigned because of absence may be reviewed upon petition to the Graduate Dean. Where withdrawals change the student's status from full-time to part-time, the student immediately forfeits any privileges contingent upon full-time status, and all interested parties who legally require it will be notified. In the case of thesis work, independent study, and other courses where research or scholarship is still in progress at the time grades are to be reported, a PR may be reported in place of a conventional grade. The PR grade is intended to indicate that it is the nature of the scholarship rather than the student's ability to complete the work that is preventing the issuance of a conventional grade. A PR grade must be converted to a regular grade before graduation.

AU signifies that the student was enrolled in the class as an auditor.

A graduate student may not elect to take a course under the credit/no-credit option.

Grade Changes

Applications for grade changes must be completed by the instructor and must contain the signature of the Graduate Dean unless the change is from Incomplete (I) or Progress (PR). All grade changes must be submitted to the Records Office by the Dean or instructor; they will not be accepted from the student. In no case may a grade be changed after a student has received a graduate degree for the purpose of changing the grade-point average of the completed degree.

Change of Curriculum

A student must request a transfer from one graduate program to another in writing. The transfer is complete when an advisor in the program to which the student is transferring has been appointed and has accepted the student as an advisee, and when the change has been reported to and approved by the Graduate Dean. In such cases of transfer, courses taken in the original curriculum that also apply toward the degree in the new curriculum will be accepted. None of the credit hours or quality points earned in other courses in the original curriculum will be taken into account in the new curriculum. However, the student's academic record and grade-point average will reflect all graduate courses taken.

Auditing Courses

A student may register for and attend any courses as an auditor. An auditor is not held responsible for the regular classwork, class attendance, and preparation of assignments and receives no credit for the course. The student pays the regular tuition as well as any other applicable fees for the course(s) audited. Audit courses are carried in a student's load only for fee purposes. A student who has registered for a course for audit may not change that status to credit after the last day to add a class. An AU may be given only to a student who has begun a course as an auditor or who has changed status to that of auditor before six weeks of a regular quarter or three weeks of a five-week summer term have elapsed.

Foreign Language Proficiency Examinations

The Department of Foreign Languages and Literatures administers proficiency examinations in the following languages: French, German, Italian, Latin, Russian, and Spanish. The graduate student should consult the major department to learn specific degree requirements. A grade of pass or fail on the proficiency examination will be registered with the Graduate Studies office.

It is not the responsibility of either the University or the Department of Foreign Languages and Literatures to tutor students for these examinations or to recommend tutors.

Commencement

The Intention to Apply for Graduation form and the Application for Graduation form must be filed and the graduation fee paid before 5 p.m. on the third Friday of the quarter in which the student intends to graduate. Submission of the graduation application and fee payment is the student's responsibility. Late applications will be accepted through the Friday of the sixth week of the quarter but will require the signature of the Graduate Dean. A copy of the Intention to Apply for Graduation form will be sent to the student's major department. There are three graduation ceremonies each year: Winter Commencement at the end of the second quarter of the academic year in March, Spring Commencement at the end of the third quarter in June, and Summer Commencement at the end of the summer session in August or September. There is no graduation ceremony at the end of the fall quarter. Diplomas and transcripts for students who have completed the requirements for a degree at the end of the fall quarter and who have applied for candidacy for December graduation bear a December graduation date. However, diplomas for fall graduates are not distributed until the Winter Commencement ceremony.

Student Rights, Responsibilities, and Conduct

In accordance with The Code, formal disciplinary sanction may be imposed by the University whenever student and/or group/organization behavior interferes with the University's responsibility to ensure a positive educational environment; its subsidiary responsibilities to protect the rights, health, and safety of persons in the University community; to maintain and protect property; to keep accurate records; and to provide necessary services and nonclassroom activities.

In extraordinary circumstances, the President of the University may suspend a student and deny access to the University campus for a reasonable period of time pending consideration of the case. In event of acquittal, every consideration shall be given to the student for completion of academic work.

Copies of *The Code* are available in the Office of the Vice President for Student Affairs, 141 Tod Hall.

28 YOUNGSTOWN STATE UNIVERSITY

1996-97 Student Fees and Charges

Tuition

Instructional Fee (including audit)

Graduate Students, all credits.(both graduate and undergraduate) \$ 83 per credit

General Fee

All Students, 1-11 credits 18 per credit
 All Students, 12 credits or more 216 per quarter

Nonresident Tuition Surcharge

The YSU Regional Service Area, for nonresident tuition surcharge purposes, includes the counties of Chautauqua, New York; Allegheny, Armstrong, Beaver, Butler, Clarion, Crawford, Erie, Fayette, Forest, Greene, Indiana, Jefferson, Lawrence, Mercer, Venango, Warren, Washington, and Westmoreland, Pennsylvania; and Brooke, Hancock, Marshall, and Ohio, West Virginia.

Regional Service Area:

Students registering for all credits 49 per credit

Outside of Regional Service Area:

Students registering for all credits 92 per credit

Housing

Room and Board (per academic year) 4,200

(Payable \$1,300 per quarter, except that an extra \$200 is collected the first quarter of residency and the spring quarter is reduced by \$200. If a resident does not stay through the spring quarter, the \$200 is forfeited.)

Security Deposit (paid first quarter) 100
 Single Room Surcharge 250 per quarter
 Room per five-week summer session 375
 Single Room Surcharge per five-week summer session 125

University Apartments (room only, per person per academic year) 2,730

Summer (room only, five weeks) 425

Voluntary Board Plan (students not living in University housing)

Nineteen-meal plan per week 615 per quarter
 Fifteen-meal plan per week 525 per quarter
 Ten-meal plan per week 420 per quarter
 Five-meal plan per week 230 per quarter

Special Purpose Fees

Course Materials Fee 20 per course
 Computer-Assisted Course Fee 25 per course
 Computer-Intensive Course Fee 35 per course
 Performance Music 35 per credit
 Application (graduate students) 30

Drop course fee	25	per change
Credit by Examination	10	per credit
Graduation	25	
Late Application for Graduation (after third week of the quarter)	50	
International Student Credentials Evaluation	45	
Late Payment	25	
Late Registration	55	
Parking Permit	35	per quarter
Parking Per Day Without Permit	2	
Proficiency Examination	30	per course
Transcript	5	per copy
Tuition Installment Payment Plan Application	25	per use
Tuition Installment Late Payment	14	
Tuition Loan Late Payment	10	per month

Service Charges

Diploma Mailing (not assessed those attending commencement)	15	
Diploma Replacement	30	
Health and Physical Education Activity: set by and paid to independent vendor.		
Health and Physical Education Locker and Towel:		
All authorized users	25	per quarter
Lock or Towel Replacement	6	each
I.D. Replacement	15	
I.D. Validation Sticker Replacement	10	
Maag Library Carrel Key Deposit (paid at Maag Library)	25	annual fee
Returned Check or Credit Card	35	
Student Locker Rental (paid at Kilcawley per academic year)	15	
Thesis binding	25	per copy
Withdrawal	25	

Fines

Library

- Overdue book: 10 cents per day to a maximum of \$11, plus cost of book replacement, plus \$10 processing charge.
- Overdue reserve book: 55 cents per day to a maximum of \$11, plus cost of book replacement, plus \$10 processing charge.
- Unauthorized removal of closed reserve book: same as for overdue reserve, plus \$5.

Parking

- (fines double if not paid within 20 days of issuance of ticket):
- Class I-All violations except those in Class II: \$10
- Class II-Parking in a handicap zone without proper permit, parking at a no parking sign, tow away zone, loading zone, official use only sign, fire lane, or in the campus core area: \$35

THE UNIVERSITY RESERVES THE RIGHT TO CHANGE ANY FEE WITHOUT NOTICE.

Fees

Tuition. The sum of the Graduate Instructional Fee and the General Fee is the tuition for a student.

30 YOUNGSTOWN STATE UNIVERSITY

Graduate Instructional Fee. This charge is assessed all students each quarter. The rate is per academic quarter hour of credit of registration. This fee supplements the state subsidy and is a revenue of the University's Educational General Fund.

General Fee. This charge is also assessed all students each quarter; the rate depends upon the number of credits for which the student is registering. This fee is for noninstructional services such as Kilcawley Center, intercollegiate athletics, intramural sports, performing artists and lecture programs, Student Government, and Career Services.

Auditing Courses. Students may audit courses (i.e., register to take a course without receiving credit). The fees are the same as if the course was taken for credit.

Nonresident Tuition Surcharge. As noted above, all students pay the instructional fee and the general fee. Those students who are not legal residents of Ohio must also pay a surcharge. Students who are legal residents of the regional service area pay a lesser surcharge than do students who are legal residents of other areas. The regional service area includes 23 counties in New York, Pennsylvania, and West Virginia.

Course Fee; Computer-Assisted Course Fee; Computer-Intensive Course Fee. Many classes and laboratories require the use of consumable materials or supplies. Students enrolled in courses so identified are assessed a fee for these supply items. The fee is variable and approximately proportional to the cost of supplies used in the class.

Performance Music Fee. This fee is in addition to the regular instructional fee. It is assessed students taking music lessons and applies on a per-credit basis.

Other Fees

Application Fee. A nonrefundable application fee must accompany the application for admission to the School of Graduate Studies. Once a student has paid the application fee, he/she shall not be recharged an application fee unless six or more years have elapsed since the student was last registered as a graduate student.

Graduate Management Admission Test (GMAT) Fee. The GMAT is an aptitude test designed to measure abilities important to the study of business at the graduate level. It is offered four times a year. Registration forms are available at the University Counseling Center.

Graduate Record Examination Fee. The aptitude portion of the Graduate Record Examination is administered on campus five times a year. Registration forms are available at the Counseling Center.

Graduation Fee. A fee is charged persons awarded a degree and is to be paid before the application for graduation is filed with the Dean of the school or college awarding the degree. The fee covers the required academic attire (cap and gown) and the diploma. No reduction or waiver of the fee occurs for graduation in absentia or for use of nonacademic attire. The fee applies for each degree granted, except honorary degrees. This fee is nonrefundable.

Late Payment Fee. Payment of a bill after the due date results in assessment of a late payment fee. The graduate instructional fee, general fee, nonresident tuition, and applied music fee are due 10 days before the first day of scheduled classes for that term or as otherwise shown in the calendar or Schedule of Classes. All fees and charges billed must be paid in full or via the installment payment plan (information available at the Bursar's Office). This fee is also charged any student who registers after classes begin.

Late Registration Fee. A fee is charged a currently enrolled student who fails to register for the next term at the assigned time.

Parking Permit Fee. A permit to park in YSU parking facilities will be issued to students and employees of the University upon payment of the fee. The fee is for the academic quarter and does not guarantee a parking space. Some facilities are restricted (e.g. for students only, or for faculty and staff only). The current Driving and Parking Regulations pamphlet and parking lot map should be consulted. A daily fee is charged anyone without a permit who wishes to park in facilities designated for cash business. Persons other than employees and students who are on campus for a short period of time to conduct business may park in the visitor's lot at University Plaza and Bryson streets (Lot M-8) if space is available. The parking permit fee is refundable only if the student withdraws and returns the permit and access card. Any refund is prorated at the daily parking rate through the end of the withdrawal period (first six days of regular term), unless an Application for Involuntary Withdrawal is filed and the sticker and card are returned within five days of withdrawal. No refund is issued for permits returned later than five days after withdrawal.

Proficiency Examination Fee. A fee is charged for an examination provided by an academic department to determine a student's proficiency for some reason other than assignment of academic credit.

Withdrawal Charge. See "Reduction/Refund of Fee Charges Upon Withdrawal."

Service Charges

Health and Physical Education Locker and Towel Fee. Students enrolled in a class requiring a locker, basket, or towel service in Beeghly Physical Education Center or the Sports Complex do not pay a fee. Other authorized persons pay a fee each academic quarter. Loss or damage to the lock or towel will result in assessment of a replacement charge.

Identification Card Replacement Charge. A charge is made for replacement of an ID card or a current term validation sticker, which is to be affixed to the ID card.

Residence Hall Charge. University housing is available by the academic year. The residence contract includes room and 19 meals per week. In addition to the service charge, a security deposit is required. Payment and refunds are as scheduled in the housing contract. Meal tickets are also available for students who are not residents of University-owned housing.

Returned Check Charge. A charge is made to anyone whose check or charge card is returned unpaid by the bank. Any late payment fee applicable is also assessed. Failure to pay billing of return check and/or charge within ten days and/or a second check/charge return will result in the University's refusal to accept this type of payment at any of its collection points.

Student Locker Charge. A limited number of lockers are available in various buildings for the convenience of commuting students. Payment and assignments are made at the Kilcawley Information Center.

Thesis Binding Charge. A charge is made for each copy of a thesis bound by the Maag Library.

Transcript of Credits Charge. A charge is made for each transcript issued. Transcripts will not be issued for students or alumni with outstanding debts owed the University. Only a student may order a transcript; however, students are cautioned that most graduate and professional schools and many employers accept transcripts only if sent directly by the University.

Fines

Parking Violation Fine. Parking without a permit, parking in such a manner as to impede regular traffic flow, occupancy of more than one identified space (assuming lines are not obscured), and other offenses as identified in the Driving and Parking Regulations will result in a citation issued to the student responsible for the vehicle (e.g., student driving parents' car). Payment of a fine removes the citation; however, the fine is doubled if not paid within 20 days of issuance. Vehicles may be towed in certain cases. See the regulations.

Library Fines. Fines are assessed for failure to return books on time as stipulated or for the unauthorized removal of a reserved book. Willful damage or defacement of library materials or other property is a violation of state law and is punished as such.

Reduction/Refund of Fee Charges Upon Withdrawal

To withdraw from a single course or from all courses, a student must process a Change of Registration through the SOLAR registration system. Nonattendance of class or notification to the instructor or department does not constitute official withdrawal.

A full reduction of the instructional, general, music performance, and course materials fees and the nonresident surcharge will be provided for all withdrawals in conformity with the following schedule:

<i>Course Duration*</i>	<i>100% Refund**</i>	<i>No Refund</i>
10 weeks or more	6th day of term or earlier	7th day of term or later
5-9 weeks	5th day of term or earlier	6th day of term or later
less than 5 weeks	3rd day of term or earlier	4th day of term or later

* Every day of the week is counted except Sunday.

** For a complete withdrawal from any term, a withdrawal charge of \$25 as well as all applicable fees, fines, and penalties will be deducted from all refunds. Student accounts paid with financial assistance awards will be billed the \$25 charge. The YSU student identification card must be surrendered before the refund is paid. After the refund period, the \$25 withdrawal charge is not assessed.

If fees were paid by scholarship, loan, or grant-in-aid, the appropriate credit is issued to the fund from which the initial payment was made. Pro-rata refunds are calculated for first-time, first-year Title IV recipients who completely withdraw during the first six weeks of the quarter. No refunds or adjustments are made on student accounts until after the tenth day of the term.

Any withdrawal or reduction in academic hours after the schedule outlined above will not be entitled to a reduction of charges and/or refund.

Application for Involuntary Withdrawal

If a student withdraws for reasons beyond his/her control (e.g., illness, military service, job transfer, or shift change imposed by the employer that creates a direct conflict with the class schedule), the fee charges may be refunded in direct proportion to the number of weeks in attendance. An Application for Involuntary Withdrawal can only be processed for courses in which the student has already received a grade of W (withdrawn). Applications for Involuntary Withdrawal will only be considered for quarters falling within the immediately preceding year (four quarters). Appeals pertaining to quarters beyond this one-year time limit will not be accepted. All Applications for Involuntary Withdrawal must be documented and are processed only by mail on forms provided by the Bursar. Address such correspondence to the Fees & Charges Appeals Board, c/o Bursar, Youngstown State University, Youngstown, OH 44555.

State Residency Status

Place of residency for tuition purposes will be determined at the time of admission or readmission by the Director of Enrollment Services on the basis of the residency rules stated in this section and information supplied on the Application for Admission form.

If the student has any questions about appropriate classification, he/she should immediately bring it to the attention of the Director of Enrollment Services for review. Retroactive refunds or charges may be made to any student improperly classified.

Resident Status Appeal

Appeal for a change in residency classification should be made in writing to the Director of Enrollment Services, who may require the student to complete an Application for Nonresident Tuition Surcharge Exemption form. The Director's decision will be sent in writing to the student, who may then appeal the classification in a personal interview with the Director of Enrollment Services.

The student may request the Director of Enrollment Services to arrange an appearance before the Residence Classification Board. Such appearances ordinarily occur within two weeks of the request, if possible. The Residence Classification Board's appellate decision is final.

Ohio Student Residency for State Subsidy and Tuition Surcharge Purposes

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) A resident of Ohio for all other legal purposes 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 welfare benefits, 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.

2) Financial Support, as used in this rule, shall not include grants, scholarships, and awards from persons or entities who are not related to the recipient.

3) An Institution of Higher Education, as used in this rule, shall mean any university, community college, technical institute or college, general and technical college, medical college, or private medical or dental college, which received a direct subsidy from the State of Ohio.

4) For the purpose of determining residency for tuition surcharge purposes at Ohio's state-assisted colleges and universities, domicile is a person's permanent place of abode; there must exist a demonstrated intent to live permanently in Ohio and a legal ability under federal and state law to reside permanently in the state. For the purpose of this policy, only one domicile may be maintained at a given time.

34 YOUNGSTOWN STATE UNIVERSITY

5) 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 residency status if that individual has the current legal status to remain permanently in the United States.

C) Residency for subsidy and tuition surcharge purposes

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

- 1) 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/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 child of a parent or legal guardian or the spouse of a person who, as of the first day of a term of enrollment, has accepted full-time 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 the employer's representative certifying that the parent or spouse of the student is employed full time in Ohio.
- b) A copy of the lease under which the parent 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 or spouse is the owner and occupant; or if the parent or spouse is not the lessee or owner of the residence in which he/she has established domicile, a letter from the owner of the residence certifying that the parent or spouse resides at that residence.

D) Additional criteria that may be considered in determining residency for the purpose 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 state welfare benefits;
- d) If a person has an Ohio 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 welfare benefits, 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 welfare benefits (see paragraph D2a of this rule).

E) Exceptions to the general rule of residency for 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/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 State Military Service who is stationed and resides in Ohio and his/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/her dependents shall be considered residents of Ohio for these purposes as long as Ohio remains the state of such person's domicile as long as such person has fulfilled his/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/her dependents shall be considered a resident for these purposes, provided such person has worked in Ohio at least four months during each of the three years preceding the proposed enrollment.

F) Procedures

1) A dependent person classified as a resident of Ohio for these purposes under the provisions of section C1 of this rule and who is enrolled in an institution of higher education when his/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/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 C1 or C2 of this rule.

3) For students who qualify for residency status under C3, residency status is lost immediately if the employed person upon whom resident student status was based accepts employment and establishes domicile outside Ohio less than 12 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 University for reclassification as a resident of Ohio for enrollment 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/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 University 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/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 a full and complete determination under this rule.

Financial Assistance

Assistantships

Applications for assistantships must be accompanied or preceded by application for admission to the School of Graduate Studies. First-year international graduate students with superior credentials and/or prior academic study in the United States may apply for graduate assistantships.

The assistantship program is predicated on the idea that graduate students, when given an opportunity to assist the faculty, not only provide a service to the institution but also gain valuable experience through this work in association with the faculty. Appointments to assistantships are made by the Graduate Dean only upon recommendation by the department concerned. In those instances in which the student indicates acceptance of an assistantship award before April 15, the student may not accept another appointment without first obtaining formal release for this purpose.

Graduate assistants may be assigned to instructional, research, and/or other academic duties as determined by the department in which the assistant is appointed and as approved by the Graduate Dean. Those assigned to classroom or laboratory duties are under the direct supervision of a full-service faculty member who will retain full responsibility for the maintenance of high academic and pedagogical standards. The oral English proficiency of each graduate assistant providing classroom-related services, including lab assistants, will be determined by an interview with and certification by the department Chair. In the event the department Chair cannot certify that the student is proficient in English, the student will be required to complete remedial courses satisfactorily before being assigned instructional duties. International students must also submit a score of the Test of Spoken English (TSE) to the School of Graduate Studies. TSE scores in the range of 45-60 (Foreign Service Institute scale level 2 to 3) are normally considered the minimally accepted standards. In the absence of the TSE, international students may be required to undergo other testing.

Research assignments afford the assistant the opportunity to participate in authorized faculty or University research programs.

Normally, assistantships are awarded for a period of three quarters, beginning with the fall quarter. To remain eligible for the assistantship, an appointee must discharge his/her duties satisfactorily and maintain good academic standing. An appointee must maintain enrollment in at least 21 quarter hours of degree credit course work for the regular academic year and not fewer than six quarter hours of degree credit course work for any one quarter. (With the advisor's approval, coursework that is not part of the graduate assistant's degree program may be counted toward the 21 quarter-hour minimum for the assistantship.) Approval to carry more than 12 quarter hours or fewer than six quarter hours in any quarter must be obtained from the department concerned and the Graduate Dean. Graduate assistants shall not hold other regular employment, whether full- or part-time, but may accept occasional or temporary work subject to the approval of the department Chair or the graduate supervisor of the department.

Each assistantship carries a stipend and remission of instructional fees, including the nonresident tuition surcharge and music performance fees. It does not cover such other expenses as the general fee or charges for parking permits. The same remission will be applicable for the summer quarter up to 12 quarter hours for those who have held an assistantship during each of the three preceding quarters.

Further information on assistantship stipends may be obtained from the School of Graduate Studies.

Federal Financial Aid

Graduate students enrolled in degree programs at YSU may apply for federal financial aid in the Scholarships and Financial Aid office, 2013 Jones Hall. (See "Full-Time Status" as it relates to eligibility for federal financial aid.)

On-Campus Student Employment

Graduate students enrolled in degree programs are eligible for on-campus student employment. For information on how to apply, contact Career Services, 3025 Jones Hall.

Scholarships

The Youngstown State University Foundation makes funds available to provide scholarships and grants-in-aid to eligible graduate students. An application must be submitted for each quarter for which a scholarship or grant-in-aid is sought. Applications for a given quarter are accepted during the first through the tenth day of classes (Monday through Friday) of the preceding quarter. Whenever there are more eligible applicants than funds available, awards will be made on the basis of grade-point average. Applications received after the deadline will not be considered. Minimum grade-point averages, application deadlines, award levels, and eligibility criteria are subject to change without notice. Detailed information on scholarships and grants-in-aid is available at the School of Graduate Studies.

Fellowships and Awards

The *Earl E. Edgar Memorial Scholarship Fund* was established in 1980 by friends and family of the late Dr. Earl E. Edgar, Vice President for Academic Affairs at YSU. This scholarship provides an annual \$500 award to a graduate student at YSU studying the Humanities. Selection of the recipient will be based on financial need and academic excellence. The selection committee comprises the deans of the School of Graduate Studies and the College of Arts and Sciences.

The *Dr. Eugene D. Scudder Graduate Student Teaching Award* is a cash award given to a chemistry graduate student for outstanding performance in teaching.

The *Dr. James A. Reeder Graduate Scholarship Award* is given to a current chemistry graduate student who will be enrolled at YSU at least part time during the next academic year.

The *Gertrude E. Hendricks Family Life Scholarship* is available each year to a graduate student whose undergraduate major has afforded preparation for an effective contribution in the family life area.

The *Dr. Robert A. DiGiulio Scholarship*, a grant of \$500, is awarded each year to a student selected on the basis of the following criteria: 1) A graduate student in the Department of Counseling; 2) an earned grade-point average of at least 3.00; 3) a nontraditional female student (over the age of 25 years); and 4) a promising student with evidence of need. Application forms may be obtained from the Department of Counseling. The deadline for submission of applications is April 15.

Graduate Student Representation

Within the first month of the fall quarter, the Graduate Council representative from each school or college that houses a graduate degree program will make sure that a graduate student from that school is designated to serve on the Graduate Student Advisory Committee (GSAC). All graduate students will have the opportunity to stand for election to this committee. If two or more graduate students file petitions, each signed by 15 or more graduate students, an election shall be held. These petitions must be filed by the 12th day of classes during fall quarter; for this purpose, Saturday is a day of classes. If fewer than two file such petitions, the representative will be appointed from among those who volunteer. Each appointment must be ratified by Council. The Council shall designate one of its members to be advisor to the GSAC.

Those eligible to be members of GSAC are full-time graduate students as defined in the graduate catalog, graduate assistants, or part-time students who have completed 12 or more hours of graduate credit, excluding transfer credit, before the fall quarter in which the representatives are chosen.

The GSAC will choose from its own membership:

- 1) a graduate student member of Graduate Council
- 2) a graduate student member to serve on each of the following graduate committees: Policy; Curriculum; Scholarships, Assistantships, and Awards.

The GSAC will recommend to Council three graduate-student members of the Grievance Committee, at least one of whom comes from GSAC.

Graduate students serving on graduate committees shall be voting members of the committees on which they serve. Members of GSAC have the right to participate in graduate faculty meetings without voting. Vacancies in GSAC will be filled by Graduate Council. A vacancy will occur automatically if a student representative resigns his/her position or if he/she is not registered for courses carrying graduate credit. The GSAC may request Council to declare a vacancy if the student is delinquent in his/her duties. If there are no available students from a given school, the Council may fill the vacancy with a student from another school.

Course Numbering System, Abbreviations, and Reference Marks

Courses listed in this bulletin are of two types. Courses in the 800-series are upper-division undergraduate courses in which the graduate student may enroll for graduate credit with the approval of the advisor. Courses in the 900- and above series are graduate-level courses normally open only to graduate students but which undergraduates may elect under conditions outlined in Graduate Courses for Undergraduates. Courses in the 1100-series are doctoral-level courses.

The abbreviation *q.h.* at the end of a course description stands for quarter hours of credit. Thus, credit for a three-hour, three-quarter course is indicated by the notation 3+3+3 q.h., meaning three quarter hours of credit each quarter.

Prereq. stands for prerequisite.

Hyphen. A hyphen between numbers (e.g. 907-908-909) indicates that credit is not given toward graduation for the work of the first and second quarters until the work of the third quarter is completed, except when special permission is granted by the Chair of the department in which the course is given. The first quarter of such a course is prerequisite to the second and the second quarter prerequisite to the third.

Comma. Ordinarily, a comma between numbers (e.g., 907, 908, 909) indicates that the course extends throughout the year, but that credit toward graduation is given for each course individually.

GRADUATE PROGRAMS

Doctor of Education Educational Leadership

Program Director: Robert J. Beebe
2008 Fedor Hall
(330) 742-1436

Program Description

The Doctor of Education (Ed.D.) program in Educational Leadership provides terminal professional preparation for public and nonpublic school administrators in the northeastern Ohio and western Pennsylvania areas served by the University. The program is designed to serve administrative personnel in elementary, secondary, and central office positions.

The program focuses on the preparation of professionally committed practitioners who reflect the current state of knowledge and best practice in Educational Leadership. Central to the preparation of such professionals are the refinement and transmission of competencies in the areas of scholarship, instruction, leadership, management, external relations, and personal development.

The Ed.D. program is administered by the Department of Educational Administration in the College of Education.

Faculty Research Interests

Reene A. Alley, Ed.D., Associate Professor
Principalship; school and community relations

Robert Beebe, Ed.D., Professor
Administrative theory; personnel administration

Howard Pullman, Ph.D., Professor
Computer applications; school business management

David P. Ruggles, Ph.D., Professor
Finance; institutional evaluations

Charles Vergon, J.D., Professor
Education law; policy development; educational change

Linda H. Wesson, Ph.D., Associate Professor
Principalship; leadership

Accreditation

Accreditation for the Ed.D. program in Educational Leadership has been granted by the North Central Association of Colleges and Schools and is being sought from the National Council for the Accreditation of Teacher Education. Membership is also being sought in the University Council for Educational Administration.

Application Procedure

Program information may be obtained from the Department of Educational Administration. Application and financial aid information may be obtained from the School of Graduate Studies. All application materials must reach the School of Graduate Studies by May 1 of the year in which fall admission is sought.

Admission Requirements

Acceptance into the Ed.D. program reflects superior qualifications. Admission is by cohort, based upon a competitive evaluation of applications by the faculty of the Department of Educational Administration. Ethnic and sexual diversity among students is desirable. In addition to the admission requirements of the School of Graduate Studies, applicants must meet the following departmental standards:

Professional Potential

- 1) Possession or qualification for certification as an educator in the state in which they wish to practice.
- 2) Completion of at least three years of teaching experience.
- 3) Completion of at least two years of administrative experience or demonstration of exceptional leadership skills in schools.

High Academic Achievement

- 1) Completion of an accredited master's degree program with a minimum grade-point average in graduate study of 3.5.
- 2) Scores at or above the 50th percentile on both the General Test and the Education Subject Test of the Graduate Record Examination. These tests must have been completed within the past five years. Applicants must plan to register for these examinations in advance. Exceptions may be made for otherwise outstanding applicants who fail to achieve the cutoff scores.

Professional References

- 1) Presentation of three letters of reference attesting to the applicant's good moral character, educational leadership and management potential, professional plans, success in teaching, professional commitment, interpersonal skills, and special professional capabilities.

Narrative

- 1) Submission of two 500- to 750-word essays: one personal essay and one essay on a professional topic.
- 2) Submission of a proposed timetable for completing the program.

Faculty Interview

- 1) A personal interview with the faculty of the department for applicants who are successful in an initial screening based upon the standards listed earlier.

42 YOUNGSTOWN STATE UNIVERSITY

2) Approval of the applicant by the faculty.

Degree Requirements

Upon admission, each student is assigned an advisor. The advisor and the student are responsible for planning a program that is professionally appropriate for the student.

Cohort Activities

Beginning with an orientation session shortly after admission and once each quarter, students are required to participate in scheduled cohort activities. These activities provide an opportunity for students to establish and maintain supportive informal relations among themselves and with the program faculty. The cohort activities also provide a setting for short seminars, colloquia, simulations, journal writing, and study sessions, relating to important areas of professional development.

Residency

Concentrated effort, continuing peer and faculty interaction, and scholarly reflection relatively free from distraction are needed if the student is to develop a considered and mature vision of the profession. Each student is required to meet a minimum residency requirement of enrollment for 27 quarter hours during the period of five continuous quarters, including summer session(s). No Ed.D. student may enroll for more than six quarter hours of study during any quarter unless his/her advisor approves such enrollment. Dissertation credits may not be used to satisfy the residency requirement.

Coursework

The coursework required for the Ed.D. in Educational Leadership consists of a minimum of 111 quarter hours of graduate study beyond the master's degree. While completion of YSU's approved 48-quarter-hour M.S. in Educational Administration is not required for admission, students admitted to the program will be required to complete the equivalent coursework as a prerequisite to beginning doctoral coursework. A minimum of 48 quarter hours of graduate credit beyond the master's degree, exclusive of dissertation credits, must be earned at YSU. Transfer credits may be accepted within policies of the School of Graduate Studies.

See the "Courses" sections of this catalog for required prerequisite study for each course. Certain courses reflect the particular vision of the YSU program and are to be completed at YSU. This information is noted in parentheses. Doctoral-only courses bear course numbers of 1100 or above.

- 1) Educational Leadership Core (minimum of 12 quarter hours)
 - Ed.Adm. 1122 Leadership in Education 3 q.h.
 - Ed.Adm. 1125 Politics and Policy Development in Education 3 q.h.
 - Ed.Adm. 1140 Seminar in Administrative Theory (YSU-only) 3 q.h.
 - Ed.Adm. 1155 Seminar in Current Educational Issues (YSU-only) 3 q.h.

- 2) Educational Foundations Core (minimum of 6 quarter hours)
 - Found. 1102 Multicultural Perspectives on Educational Leadership 3 q.h.
 - Found. 1110 Theories of Inquiry 3 q.h.

- 3) Educational Research Core (minimum of 21 quarter hours)
 - Found. 872 Statistical Methods in Education 3 q.h.
 - Ed.Adm. 908 Computer Applications for Administrators 3 q.h.
 - Found. 945 Research Design 3 q.h.

Found. 977 Qualitative Research Methods	3 q.h.
Found. 980 Advanced Statistical Methods	3 q.h.
Ed.Adm. 1100 Advanced Computer Applications in Educational Research	3 q.h.
Found. 1105 Advanced Educ. Research/Dissertation Proposal (YSU-only)	3 q.h.
4) Dissertation Study (minimum of 24 quarter hours)	
Ed.Adm. 1190 Dissertation (YSU-only)	3 q.h.
5) Educational Leadership Electives (minimum of 21 quarter hours; courses should be selected so as to satisfy the requirements for any desired areas of administrative certification.)	
Ed.Adm. 947 Basic Principles of Elementary School Administration	3 q.h.
Ed.Adm. 948 Basic Principles of Secondary School Administration	3 q.h.
Ed.Adm. 950 School Business Management	3 q.h.
Ed.Adm. 956 Educational Facilities	3 q.h.
Ed.Adm. 988 Evaluation of Educational Institutions	3 q.h.
Ed.Adm. 1024 Seminar in Collective Bargaining	3 q.h.
Ed.Adm. 1033 Theories of Change in Education	3 q.h.
Ed.Adm. 1034 Implementing Change in Education	3 q.h.
Ed.Adm. 1035 The Superintendency	3 q.h.
Ed.Adm. 1130 Organizational Dynamics	3 q.h.
Ed.Adm. 1135 Seminar in Personnel Administration	3 q.h.
6) Instructional and Service Electives (minimum of 15 quarter hours; it is important for educational leaders to understand the role and operation of the several specialized instructional and service areas. This list of courses is recommended.)	
EMCE 911 Early Childhood Programs	3 q.h.
EMCE 916 The Elementary School Curriculum	3 q.h.
Sec.Ed. 922 Principles of Instruction	3 q.h.
Sec.Ed. 931 The Secondary School Curriculum	3 q.h.
EMCE 939 Designing Middle Grade Environments, Curricula, and Instruction	3 q.h.
Couns. 982 Educational Leadership in Primary Prevention and Intervention Strategies	3 q.h.
Couns. 1008 Assessment for Educational Design Making	3 q.h.
Couns. 1011 Clinical Counseling Practice I	3 q.h.
Sp.Ed. 1043 Instructional Leadership in Special Education	3 q.h.
Found. 1115 Schools, Society, and Ideology	3 q.h.
Sec.Ed. 1120 Clinical Supervision	3 q.h.
7) Cognate Electives (minimum of 9 quarter hours)	
8) Field Experience in Educational Leadership (minimum of 3 quarter hours) One field experience course from the following list:	
Ed.Adm. 1022, 1023, 1037, 1038, 1039, 1041 (YSU-only)	3 q.h.

Comprehensive Examinations

Comprehensive examinations consist of a sequence of three examinations that are cumulative of the student's experiences in the program: a written qualifying general examination covering the profession of education, a written specialty examination in the area of education leadership, and an oral examination assessing the overall suitability of the individual as a leader in schools or school systems. Satisfactory completion of these three examinations qualifies the student as a candidate for the Ed.D. degree and signifies readiness to begin the dissertation study.

Master of Arts Economics

Program Director: Yih-Wu Liu
328 DeBartolo Hall
(330) 742-1674

Program Description

The M.A. program in Economics accommodates students who wish to obtain professional employment in business, government, or education. The program also prepares students for doctoral study in economics or related fields. Areas of concentration offered in the M.A. program include economic growth and development, economic theory, fiscal economics, industrial organization, international economics, labor economics, monetary economics, quantitative economics (econometrics, mathematical economics, and statistics), and regional and urban economics.

Faculty Research Interests

Richard H. Bee, D.B.A., Professor
Applied macroeconomics; economics of education; time series

Yih-Wu Liu, Ph.D., Professor
Applied econometrics; forecasting; Asian economy

Dennis Petruska, Ph.D., Associate Professor
Financial markets; macroeconomics monetary theory

Tod Porter, Ph.D., Professor and Chair
Labor market; school financing; computer-aided instruction

Teresa Riley, Ph.D., Professor
Labor economics; health care financing; computer-aided instruction

Rochelle Ruffer, Ph.D., Assistant Professor
Industrial organization; antitrust regulation

Ebenge Usip, Ph.D., Associate Professor
Time series analysis and forecasting; economic development; the effect of oil on Nigerian economic development

Admission Requirements

In addition to the minimum School of Graduate Studies admission requirements, applicants must have completed 21 quarter hours (or its equivalent) in economics or preparation judged satisfactory by the department. These courses must include Principles of Economics and one course in statistics.

Degree Requirements

Core course requirements are Introduction to Mathematical Economics, Econometrics, Microeconomics I and II, and Macroeconomics I and II. Graduate credit electives may be taken in the social and applied

sciences and humanities with the consent of the advisor. No more than 13 hours may be taken at the 800 level unless the student receives permission from the graduate program director.

The student must successfully complete a comprehensive examination in economic theory. This examination should be scheduled as soon as possible after completion of the core course requirements and before completion of 36 hours of graduate work. To be eligible for the comprehensive examination, the student must have a grade-point average of not less than 3.0. The comprehensive examination may not be taken more than twice. A student who has successfully passed the comprehensive examination pursues one of the following options for graduation: Option A: The student must complete a minimum of 45 quarter hours of graduate coursework, which must include Economics 998; Option B: The student must complete a minimum of 45 quarter hours of graduate coursework, including a master's thesis. The maximum amount of credit that may be earned for the thesis is nine quarter hours. The thesis must be submitted according to the general requirements established by the School of Graduate Studies. The student is required to defend the thesis in an oral examination before a committee of three or more faculty members of the department.

Master of Arts English

Program Director: Rick A. Shale
247 DeBartolo Hall
(330) 742-3416

Program Description

The M.A. Program in English offers courses in literature research, history, and theory; genre and figure studies; creative and professional writing; linguistics and composition theory; film; and the teaching of writing and literature. Faculty members strive to offer students an understanding of the traditions of literary study and familiarity with the latest multicultural and interdisciplinary approaches. The M.A. in English prepares graduates to pursue opportunities in teaching, professional writing, and further graduate study.

Working closely with their advisors, students design individual programs to meet their interests and goals. Students are encouraged to explore a variety of approaches to the study of literature, language, and writing and to develop their abilities as readers, critics, writers, and teachers. The program requires 48 quarter hours of coursework in English, during which students complete and present a portfolio of their representative work to a faculty review committee.

Faculty Research Interests

Rane Arroyo, Ph.D., Assistant Professor
American literature; poetry; drama; multicultural literature

Salvatore Attardo, Ph.D., Assistant Professor
Linguistics (semantics and pragmatics); humor theory

Rebecca Barnhouse, Ph.D., Assistant Professor
Medieval studies; early British literature; contemporary fiction

46 YOUNGSTOWN STATE UNIVERSITY

Bege Bowers, Ph.D., Professor

19th-century British studies; professional and technical editing; rhetoric; composition

Philip Brady, Ph.D., Associate Professor

Modern Irish literature; creative writing; modern world literature

Barbara Brothers, Ph.D., Dean of the College of Arts and Sciences and Professor

Modern British literature; feminist studies; travel literature

Thomas A. Copeland, Ph.D., Professor

English renaissance; Milton; 17th-century English literature

Michael Finney, Ph.D., Associate Professor

James Joyce; literary theory; prose fiction

Julia M. Gergits, Ph.D., Associate Professor

Victorian literature; women's studies; technical writing; literature and the other arts

Betty T. Greenway, Ph.D., Associate Professor

Children's literature; prose fiction

William Greenway, Ph.D., Professor

Poetry writing; poetry; modern British and American literature

Megan Isaac, Ph.D., Assistant Professor

16th- and 17th-century literature; drama; children's literature

Scott A. Leonard, Ph.D., Assistant Professor

19th-century British literature; critical theory; composition/rhetoric

Sherry Lee Linkon, Ph.D., Associate Professor

19th- and 20th-century American studies; feminist criticism; popular culture

H. Thomas McCracken, Ph.D., Professor

English education; mythology; rhetoric; composition

Virginia R. Monseau, Ph.D., Professor

Adolescent literature; children's literature; English education

Bill V. Mullen, Ph.D., Associate Professor

Contemporary American literature; African-American literature; literary theory; cultural criticism

Charles Nelson, Ph. D., Professor

Technical writing

Gail Okawa, Ph.D., Assistant Professor

Multicultural studies in language, literacy, literature, and pedagogy

Steven Reese, Ph.D., Associate Professor

20th-century British literature; creative writing

Gary M. Salvner, Ph.D., Professor

English education; adolescent and children's literature; composition

James J. Schramer, Ph.D., Associate Professor
Early American literature; technical writing; travel literature

Richard A. Shale, Ph.D., Professor
Film study; popular culture; American studies

Sandra W. Stephan, Ph.D., Professor and Chair
18th-century British literature; rhetoric; composition; literature and science

Linda J. Strom, Ph.D., Assistant Professor
Working class literature; women's studies; 20th century american literature

Stephanie A. Tingley, Ph.D., Associate Professor
American literature; film studies

Admission Requirements

Students must have an undergraduate English major or other preparation judged satisfactory by the department and an unrecalculated grade-point average in undergraduate study of at least 2.7 on a 4.0 scale. Applicants who do not have an undergraduate major in English must complete a sequence of undergraduate prerequisite courses prior to admission to the M.A. program. Such students should check with the program director when applying.

Degree Requirements

- 1) Students must complete 48 hours in English courses at the graduate level; exceptions must have prior approval of the department Chair and Graduate Program Director.
- 2) Students must submit a portfolio consisting of 35-50 pages of writing generated during graduate school. Most of this writing will come from class assignments; however, up to 15 pages of personal writing done outside the classroom may be included. During the final quarter the student will present the portfolio to a faculty review committee. A handout on the portfolio requirement is available from the program director.

Graduate Certification

A Graduate Certificate in Professional Writing and Editing is available through the English Department. Please see the appropriate information in the "Graduate Certificates" section of this catalog.

Advising

- 1) All students should have their schedules approved by a graduate faculty advisor every quarter. After initial enrollment in the program the student and his/her advisor will establish a coursework plan including alternate course selections.
- 2) Students who anticipate graduate study beyond the M.A. are strongly advised to acquire basic reading competence in at least one foreign language.

Master of Arts History

Program Director: Frederick J. Blue
541 DeBartolo Hall
(330) 742-3453

Program Description

The Department of History offers a graduate program leading to the Master of Arts degree. Its curriculum combines American, European, and Third World areas. The program prepares students for doctoral study in history or related fields, advancement in secondary and elementary education with a concentration in history and the social sciences, certification in Historic Preservation, and additional graduate study in a variety of professional areas. Alternatively, the program provides the knowledge base for those pursuing history as an avocation. The program concentrates on research and primary materials, written analysis of research results, study of important monographs in all fields of history, and training in a number of special fields such as oral history and historic preservation. The department prides itself on its small classes and close personal attention for all of its master's candidates.

Faculty Research Interests

Martin Berger, Ph.D., Professor
Marxism; modern Germany

Frederick Blue, Ph.D., Professor
19th-century United States; Ohio

Leslie Domonkos, Ph.D., Professor
Medieval; renaissance Europe

Saul Friedman, Ph.D., Professor
Middle East; Jewish

Thomas Hanchett, Ph.D., Assistant Professor
Historic Preservation

William Jenkins, Ph.D., Professor
20th-century United States; social

George Kulchytsky, Ph.D., Professor
Russia; eastern Europe

Martha Pallante, Ph.D., Assistant Professor
Early American

Lowell Satre, Ph.D., Professor
Modern British

Fred Viehe, Ph.D., Associate Professor
United States urban

Anne-Marie York, Ph.D., Assistant Professor
Early modern and revolutionary France; revolutionary France

Admission Requirements

Students must have an unrecalculated grade-point average in undergraduate study of at least 2.75 (on a 4.0 scale) and a minimum of 24 quarter hours of study in the field of history as an undergraduate (This may be waived upon petition to the Department of History).

Degree Requirements

The Department of History offers three options to candidates for a Master of Arts degree in history. Option I is designed primarily for students who wish to continue studies toward a doctorate. Option II is designed primarily to meet the needs and improve the effectiveness of secondary teachers. The Certificate in Historic Preservation is designed to prepare students for career opportunities in that field.

Each candidate for the M.A. in History must pass a written and an oral examination in three fields of concentration. The Examination will require factual and interpretative material as well as bibliography and historiography.

Option I

- 1) A total of 45 quarter hours at the 900 level, including thesis (nine quarter hours).
- 2) Completion of a course in Historiography (949 American or 950 European) and 948 Historical Research.
- 3) Sixteen quarter hours of coursework in American, European, or non-Western history, exclusive of thesis credit.
- 4) A required thesis.
- 5) Successful completion of general written and oral examinations.

Students working in American or British history will, in most instances, not be required to pass a foreign language examination. In areas where a foreign language is essential for research, the student will have to meet the requirement set by the department.

Before any student under Option I is allowed to take the written and oral examinations, the advisor will designate to the Chair of the Graduate Committee of the Department of History which foreign language, if any, the student is required to know and how this requirement has to be met.

Students under Option I are reminded that the Department of History expects that the thesis shall display a capacity for research in a variety of historical sources and the ability to interpret factual information and shall constitute a properly documented report of the completed research.

Option II

- 1) A total of 48 quarter hours of graduate credit.

50 YOUNGSTOWN STATE UNIVERSITY

- 2) Completion of a course in Historiography (949 American or 950 European) and 948 Historical Research.
- 3) Sixteen quarter hours of coursework in American, European, or non-Western history.
- 4) Two satisfactory (B or better) graduate seminar papers submitted to two different instructors. The two research papers are to be deposited with the graduate program director to remain permanently on file.
- 5) Successful completion of general written and oral examinations.

Foreign language examination is not required.

Certificate in Historic Preservation

The M.A. in History with Certificate in Historic Preservation is designed both to give students a grounding in American history and historical research at the graduate level, and to introduce them to ideas and techniques useful in applied history of the built environment. Students earning the Certificate may find work with state or local preservation groups, museums or government agencies. Coursework has two components:

- 1) The History sequence begins with the study of historiography and strategies for historical research, and continues with four American history graduate courses in topics of the student's interest (for example: Colonial America, 19th century U.S., urban history, oral history, material culture.)
- 2) The Historic Preservation sequence begins with American Architectural History and Introduction to Preservation and continues with specialized courses in research techniques and materials conservation, and concludes with a practicum class and an internship for "hands-on" experience. The sequence of courses (24 hrs.) listed under "Historic Preservation Sequence" below is required to complete the certification requirements.

History sequence:

Historiography	History 949 (American)
Intro to Historical Research	History 948
Four 900-level courses in the American field	
6 courses = 24 hours	

Historic Preservation sequence:

American Architectural History	History 808
Introduction to Preservation	History 933
Documentation and Interpretation of Historic Sites	History 809
Conservation of Historic Built Environment	History 810
Practicum in Historic Preservation	History 934
Historic Preservation Internship	History 935
6 courses = 24 hours	

Total 12 courses = 48 hours

Paper requirement:

Students must submit two satisfactory (B or better) graduate papers from two different instructors. One shall be from a history seminar, and must be a research paper using primary sources. The other shall be based upon a paper begun in a preservation course, expanded through additional research and reading as directed by the instructor.

Master of Business Administration

M.B.A. Coordinator: Linda J. Mohn
506 Williamson Hall
(330) 742-3069

Program Description

The M.B.A. program is designed to provide individuals with current knowledge and experience in the functional areas of business and to provide the updated tools necessary to operate effectively in the constantly changing business environment. Prior academic work in business subjects is not required for admission into the program, but students with subject-matter deficiencies will be required to take the necessary background courses as part of their program.

The Department of Accounting and Finance houses offers two concentrations--accounting and finance. The accounting concentration prepares students for careers as certified public accountants, corporate accountants, and as accountants for governmental and nonprofit organizations. The finance concentration prepares students for careers in corporate finance, banking, investment banking, insurance, financial services, and as financial analysts for public and nonprofit organizations.

The Department of Management offers a management concentration that prepares students for leadership and decision-making roles in business, government, and nonprofit organizations. Dimensions of managerial functions covered in coursework include international, human resources, strategic planning, operations, and information systems.

The Department of Marketing offers a marketing concentration that prepares students for career opportunities in public, private, and nonprofit enterprises as product managers, market research analysts, account executives, and sales representatives. The field of marketing deals with products and services, involving interrelated functions such as research, sales, advertising, and promotion.

Faculty Research Interests

Joseph Antenucci, Ph.D., Associate Professor of Accounting and Finance
Taxation and compliance

Peter Arlow, Ph.D., Professor of Management
Ethical social issues in business

David Burns, Ph.D., Associate Professor of Marketing
Ethics in business; retail location; shopping centers

Haiyang Chen, Ph.D., Professor of Accounting and Finance
Capital markets; international finance

Gregory Claypool, Ph.D., Associate Professor of Accounting and Finance
Auditing and ethics

David R. Decker, Ph.D., Professor of Marketing
Industrial marketing; international marketing

James Granito, J.D., M.A., Associate Professor of Management
Legal issues in business; ethical social issues in business

52 YOUNGSTOWN STATE UNIVERSITY

Stanley Guzell, Ph.D., Professor of Management
Comparative management; international business

Birsen Karpak, D.B.A., Professor of Management and Chair
Management science; operations management

Ram Kasuganti, D.B.A., Professor of Management
Quality management; strategy and policy; management science; materials management

David Law, D.B.A., Associate Professor of Accounting and Finance
Accounting theory

Anne McMahon, Ph.D., Professor of Management
Organizational behavior; women in management

Kent McMath, Ph.D., Associate Professor of Accounting and Finance
Advanced management; cost accounting; management accounting systems

Clement Psenicka, D.B.A., Professor of Management
Management science; operations management

Thomas Rakestraw, Ph.D., Associate Professor of Management
Organizational behavior; research design

Jane Simmons Reid, Ph.D., Professor of Marketing
Gender differences of presenters in television commercials; hierarchy-of-effects model for different product types; marketing efforts of nonprofit organizations; concept of values as it relates to product choice

Dean S. Roussos, Ph.D., Professor of Marketing
Advanced marketing simulations

John Russo, Ed.D., Professor of Management
Labor studies

Helen Savage, Ph.D., Professor of Accounting and Finance
Accounting information systems; behavioral accounting

Louise Sellaro, D.B.A., Professor of Management
Strategy/policy communication; health care management

Raymond J. Shaffer, Ph.D., Professor of Accounting and Finance
Tax and governmental accounting

William Vendemia, Ph.D., Assistant Professor of Management
Operations management

Ronald P. Volpe, Ph.D., Professor of Accounting and Finance
Financial planning; financial literacy; investing

Judith B. Wilkinson, Ph.D., Professor of Marketing
Retailing; sales response modeling; advocacy advertising

Fran Wolf, Ph.D., Associate Professor of Accounting and Finance
 Financial management; advanced financial analysis

Bo Wong, Ph.D., Professor of Management
 Management information systems

Peter Woodlock, Ph.D., Associate Professor of Accounting and Finance
 Executive compensation; corporate governance

Admission Requirements

Regular Admission. Requirements for regular admission to the program are: 1) a baccalaureate degree from an accredited institution with an unrecalculated grade-point average of 2.7 or above and 2) satisfactory completion of the GMAT with a score of 450 or more.

Provisional Admission. Individuals who do not meet the grade-point average or GMAT requirements for regular admission will be considered for provisional admission on an individual basis. Applicants who do not have a satisfactory undergraduate grade point average or a satisfactory GMAT score but feel they are otherwise qualified may, upon completion of a formal application, petition the MBA Admissions and Standards Committee.

Degree Requirements

There are three levels of coursework in the M.B.A. program (Level I foundations; Level II core; and Level III concentration and electives). A student entering with undergraduate business administration and economics coursework may receive waivers of Level I course hours. The total number of hours required to complete the M.B.A. program consists of 54 to 99 quarter hours of credit, depending upon Level I coursework required. Students must take Level I courses before proceeding to Levels II and III. Level II courses must be completed before completing Level III courses. Exceptions to this sequence must be approved by the M.B.A. Coordinator and department Chair.

Students who do not maintain a 3.0 grade-point average may, upon the recommendation of the M.B.A. Admissions and Standards Committee, be dropped from the program. This policy applies to courses taken in Levels I, II, or III after acceptance into the M.B.A. program.

Level I: M.B.A. Foundations Courses

Level I courses are required of students who do not have the necessary undergraduate background in business and economics. Each student's transcript will be evaluated to determine the coursework equivalencies.

The Level I foundations course requirements (or equivalent courses) are:

Acct. 900 Financial Accounting for Management (or Acct. 602, 603, or equivalent, 8 q.h.)	4 q.h.
Bis. 514 Microcomputer Applications in Business (or equivalent)	4 q.h.
Fin. 900, Foundations of Finance (or Fin. 720, 4 q.h.)	3 q.h.
Econ. 900 Statistical Problems (or Econ. 530, 630 or equivalent, 8 q.h.)	4 q.h.
Econ. 901 Basic Economic Analysis (or Econ. 520, 621 or equivalent, 7 q.h.)	5 q.h.
Mgmt. 604 Legal Environment of Business I	4 q.h.

54 YOUNGSTOWN STATE UNIVERSITY

Mgmt. 900 Foundations of Management (or Mgmt. 725, 4 q.h.)	3 q.h.
Mktg. 900 Foundations of Marketing (or Mktg. 703, 5 q.h.)	3 q.h.
Total Foundations:	30-45 q.h.

Level II: M.B.A. Core Courses

Acct. 902 Management Accounting Systems	or	4 q.h.
Acct. 930 Accounting Theory*		4 q.h.
Fin. 921 Financial Management		4 q.h.
Econ. 926 Aggregate Economics for Business Decision Making		4 q.h.
Mktg. 942 Marketing Administration		4 q.h.
Mgmt. 915 Research Methodology		4 q.h.
Mgmt. 916 Quantitative Analysis for Business Decisions		4 q.h.
Mgmt. 921 Operations Management I (prereq.: Mgmt. 916)		4 q.h.
Mgmt. 961 Organizational Behavior (prereq.: Mgmt. 915)		4 q.h.
Mgmt. 965 Business Policies (prereq.: all other core courses)		4 q.h.
Mgmt. 971 Business and Society		4 q.h.
Total Core:		40 q.h.

*Undergraduate accounting majors who earned their degree within the last five years must take Accounting 930.

Level III: Concentration and Elective Courses--14 q.h.

Accounting, Finance, Management, Marketing, General

The additional concentration/elective course requirements enable students to pursue in-depth learning in a discipline of special interest. Students may choose a concentration in accounting, finance, management, or marketing. If a more diverse selection of courses is desired, students should indicate general. If a specific concentration (acct., fin., mgmt., mktg.) is stated on the application, 14 q.h. of courses are chosen within that discipline. Students indicating "general" may select courses from several business disciplines. Graduate courses taken outside of the College of Business need prior approval. *The thesis option is available in each area of concentration. Any student considering the thesis option must consult the MBA Coordinator. Optimally, the student desiring the thesis option should be working with an advisor on topic selection before the core courses are completed. Students wishing to change their concentration after acceptance must follow the curriculum in force at the time the change is made.

Total concentration and elective hours required: 14 q.h.

Total M.B.A. hours required: 54 q.h.

Executive M.B.A.

The mission of the Executive M.B.A. program is to provide fully employed middle- and upper- level managers with the skills, knowledge, and competence necessary to function more effectively as executives. Weekend classes allow participants to attain an M.B.A. degree without interrupting their professional careers. The two-year, lock-step program offers courses structured in a prescribed sequence. Focusing on general management functions and responsibilities, the curriculum is structured to achieve overall integration. An overseas trip during the second year of study allows participants to obtain firsthand exposure and insight into foreign cultures, economies, and business.

Master of Music

Program Director: Darla J. Funk
3144 Bliss Hall
(330) 742-1829

Program Description

Master's degrees are offered in music education, performance, music history, and music theory/composition through the Dana School of Music, which was founded in Warren, Ohio, in 1869 as Dana's Musical Institute. A member of the National Association of Schools of Music, Dana currently enrolls 300 undergraduate and graduate students. Facilities include the \$6 million Bliss Hall for the College of Fine and Performing Arts, featuring 100 pianos, six mechanical action organs, two harpsichords, an electronic music laboratory, and 80 acoustically treated practice rooms. In addition, the University library contains a large music section, especially notable for its collected and scholarly editions, while the Multi-Media Center holds several thousand records, tapes, CDs, and practical edition scores.

Faculty Research Interests

- Stephen W. Ausmann**, Ph.D., Assistant Professor
Music teacher preparation/retention; urban teacher (music) education
- Michael Crist**, M.M., Assistant Professor
Music performance (trombone); music aesthetics; music teacher training; computers in music
- Joseph Edwards**, M.M., Professor and Chair
Pedagogy and new music (clarinet)
- Darla Funk**, Ph.D., Professor
Music in early childhood; teacher education
- Stephen L. Gage**, Ed.D., Assistant Professor
Instrumental music education; conducting
- Ronald L. Gould**, S.M.D., Professor
Bach; 18th- and 19th-century opera; church music; organ
- Edward Largent**, Ph.D., Professor
Composition (original works); perception of musical phenomena; teaching strategies; use of computers
- Wade Raridon**, D.M.A., Professor
Vocal duets of Agostino Steffani; choral styles as evidenced in settings of the Gloria; choral music of Dana composer Robert Witt
- Robert Rollin**, D.M.A., Professor
Music composition; music theory and analysis; 20th-century music; crosscultural connections between Western and non-Western music; new music performance (piano and conducting)
- William B. Slocum**, M.M., Professor
Horn in solo, orchestral, and chamber music contexts

John Turk, M.M., Professor

Performance (tuba); rock and roll; history of Dana's Musical Institute/Dana School of Music at Youngstown College/Dana School of Music at YSU

James Umble, M.M., Associate Professor

Technology in education; music technology; music performance and pedagogy (saxophone); curriculum development in the arts; integrated arts

John C. Wilcox, M.M., Assistant Professor

Violin teaching and performance

Admission Requirements

Applicants for admission to graduate study in the M.M. degree must present a baccalaureate degree in music from an accredited college or university. Admission requires an unrecalculated undergraduate grade-point average of at least 2.7 (on a 4.0 scale). Students with less than a 2.7 average must provide satisfactory scores on the aptitude portion of the Graduate Record Examination. Upon admission and before the end of the first quarter of graduate study, each student must take a placement examination in music history and music theory. Failure to do so will result in an addition of six quarter hours (three quarter hours in music theory, three quarter hours in music history) to the 48 quarter-hour degree program. Theory/composition applicants must submit evidence of compositional or analytic activity. All performance degree applicants must audition on their principal instrument for acceptance to the appropriate applied music level. Students with a major in conducting performance must show evidence of conducting skill through an audition and interview. Students with a major in voice performance are expected to have completed eight quarter hours each in French, German, and Italian, or the equivalent.

Degree Requirements

- 1) Completion of all requirements outlined in respective courses of study. (See chart below.)
- 2) Candidates must meet whatever undergraduate foreign language requirements are appropriate to their major. Music history and literature majors must pass a written examination in at least one foreign language, preferably French or German, before initiating thesis research.
- 3) Students who fail to meet the standards set by the School of Music may, upon recommendation of the Dana Graduate Committee, be required to withdraw at the end of the quarter. Any student with an overall grade-point average below 3.0 (i.e., not in good standing) for two consecutive quarters shall be dismissed from the master's program in music.
- 4) A final qualifying examination is required of all M.M. candidates. For thesis students, the examination will be included in the thesis defense, which shall be conducted by a committee composed of three graduate faculty members, one of whom will be from outside the student's major area. The thesis committee shall be appointed by the student's advisor when the thesis proposal is accepted by the Graduate Committee. Performance majors will submit a document supporting the recital. Music education majors electing the nonthesis option will take the music education exit examination. Procedural regulations governing the final qualifying examination are available from the office of the faculty member in charge of graduate studies in music.
- 5) Thesis students who have completed 990 and 991, Thesis I and II (3+3 q.h.), and have completed all course requirements but have not defended the thesis, are required to maintain current student status if they expect to receive advisor or committee assistance or utilize University services (e.g., library, computer, parking, etc.). This can be accomplished by registering for one hour of Music 991.

Performance

900-level Applied*	18 q.h.
942 or 973	3 q.h.
Music History (B)	6 q.h.
Music Theory (A)	6 q.h.
Music Literature (E)	3-4 q.h.
Pedagogy (D)	2-4 q.h.
Music Electives (A-F)	7-9 q.h.
Total:	48 q.h.

*Conducting majors must take 6 q.h. of vocal or instrumental applied and 12 q.h. of applied conducting.

Music Theory and Composition

Music Theory (A)*	21 q.h.
942 or 973	3 q.h.
Music History (B)	6 q.h.
800- or 900-level Applied	6 q.h.
Thesis 990, 991	6 q.h.
Music Electives (A-F)	6 q.h.
Total:	48 q.h.

*students in the theory emphasis should take Music 913, Pedagogy of Theory

Music History and Literature

Music History (B)	21 q.h.
942 or 973	3 q.h.
Music Theory (A)	6 q.h.
800- or 900-level Applied	6 q.h.
Thesis 990, 991	6 q.h.
Music Electives (A-F)	6 q.h.
Total:	48 q.h.

Music Education

Music Education (C)*	12 q.h.
970, 978	6 q.h.
942 or 973	3 q.h.
Music History (B)	6 q.h.
Music Theory (A)	6 q.h.
800- or 900-level Applied	6 q.h.
Music Electives (A-F)	9 q.h.
Total:	48 q.h.

*music education majors may count up to 6 credit hours of S/U graded workshops toward degree requirements

(A) Courses to be selected from List A

(B) Courses to be selected from List B

(C) Courses to be selected from List C

(D) Courses to be selected from List D

(E) Courses to be selected from List E

(F) May include up to three quarter hours of ensemble courses and up to six additional quarter hours of applied music courses. Selection is subject to results of entrance placement examination in music theory and music history. All music electives must be approved by the advisor.

Music Theory and Composition (A)

830 Materials of 20th-century Music	3 q.h.
831 Modal Counterpoint	3 q.h.
832 Tonal Counterpoint	3 q.h.
833 Theory Seminar	3 q.h.
840 Instrumentation	4 q.h.
904, 905, 906 Advanced Composition	4+4+4 q.h.
913 Pedagogy of Theory	3 q.h.
916 Fugue	3 q.h.
920, 921, 922 Seminar in Materials of Music	3+3+3 q.h.
930, 931, 932, 933 Baroque, Classic, Romantic, 20th Century	3+3+3+3 q.h.

58 YOUNGSTOWN STATE UNIVERSITY

Music History (B)

830 Materials of 20th-century Music	3 q.h.
871 Baroque	3 q.h.
872 18th Century and the Viennese Classical School	3 q.h.
873 Opera History	3 q.h.
874 19th Century: The Romantic Period	3 q.h.
878 Selected Topics in Music History	3 q.h.
940 Music in the Middle Ages	3 q.h.
941 Music in the Renaissance	3 q.h.
943 Seminar in Musicology	3 q.h.

Music Education (C)

814 Selected Topics in Music Education	2 q.h.
841 Music Workshop	1-4 q.h.
970 Foundations of Music Education	3 q.h.
971 Admin. and Supervision in Music Education	3 q.h.
972 Seminar in Music Education	3 q.h.
974 Psychology of Music	3 q.h.
975 Music and the Humanities	3 q.h.
976 Directed Study in Conducting	3 q.h.
978 Contemporary Trends in Music Education	3 q.h.
981 Elementary School Music Practicum	3 q.h.
982 Secondary School Music Practicum	3 q.h.

Pedagogy (D)

851 Woodwind Pedagogy	2 q.h.
858, 859 Piano Pedagogy	2+2 q.h.
880 Vocal Pedagogy	2 q.h.
882 String Pedagogy	2 q.h.
885 Brass Pedagogy	2 q.h.
950 Conducting Pedagogy	2 q.h.

Music Literature (E)

852 Woodwind Literature	3 q.h.
860 Piano Literature	4 q.h.
869 Organ Literature	3 q.h.
879 Vocal Literature	3 q.h.
884 History and Literature of Brass Instruments	3 q.h.

Music Electives (F)

820, 821, 822 Composition Minor	2+2+2 q.h.
834, 835 Electronic Music	3+2 q.h.
887, 888, 889 Piano Duet and Duo Playing	1+1+1 q.h.
890, 891, 892 Chamber Music with Piano	1+1+1 q.h.
942 Introduction to Music Bibliography	3 q.h.
973 Research Methods & Materials in Music Educ.	3 q.h.
990 Thesis 1	3 q.h.
991 Thesis 2	3 q.h.
992 Independent Projects	1-6 q.h.

Master of Science

Biology

Program Director: Robert E. Leipheimer
4039 Ward Beecher Hall
(330) 742-7122

Program Description

The Department of Biological Sciences offers a graduate program leading to the M.S. degree. This program aids students in developing their capabilities for independent thinking, problem solving, and research. Students prepare to pursue research and academic careers through formal coursework, participation in formal and informal seminars, and faculty-guided original research.

Students interested in ecology, microbiology, molecular biology, immunology, parasitology, entomology, genetics, vertebrate physiology, neuroendocrinology, or neurobiology may choose these areas of specialization.

The department is housed in Ward Beecher Hall, which has undergone a \$12.7 million renovation program that has modernized both the interior and exterior. Specialized facilities include a 6,000 square-foot greenhouse, a departmental analytical lab (housing HPLC and GC instruments), a scanning electron microscope, a tissue culture laboratory, and an animal facility. The department also has exclusive use of two unique outdoor laboratories. The Youngstown State University Arboretum is a 115-acre reserve of beech-maple forest, old field succession, and other plots of non-native species. Meander Reservoir, a 6,000-acre wildlife refuge and water impoundment, also provides a valuable resource for environmental studies.

Faculty Research Interests

David K. Asch, Ph.D., Assistant Professor
Gene regulation in eukaryotic organisms; carbon catabolite repression in *Neurospora crassa*

Diana L. Fagan, Ph.D., Assistant Professor
Immunology and molecular biology; effects of vitamin D on immune cells

Dale W. Fishbeck, Ph.D., Professor
Distribution of stoneflies (Order Plecoptera) in Ohio; amphibian ecology

Johanna K. Krontiris-Litowitz, Ph.D., Associate Professor
Neurobiology; synaptic plasticity in vertebrates and invertebrates; central regulation of cardiovascular function of *Aplysia californica*

Robert E. Leipheimer, Ph.D., Associate Professor
Reproductive neuroendocrinology; hormone-behavior interactions, regulation of gonadotropin secretion

David B. MacLean, Ph.D., Professor
Ecology and biogeography of caddisflies (Trichoptera); application of multivariate analysis to the study of behavior and quantitative ecology

Paul C. Peterson, Ph.D., Professor and Chair
Taxonomy and systematics of avian ectoparasites with emphasis on feather mites; enzyme variability among tick species; morphological and biochemical diversity among insect hemocytes

60 YOUNGSTOWN STATE UNIVERSITY

Anthony E. Sobota, Ph.D., Professor
Genetic engineering; clinical microbiology

Gary Walker, Ph.D., Assistant Professor
Cell biology

Mark Womble, Ph.D., Assistant Professor
Neurophysiology

John D. Usis, Ph.D., Associate Professor
Effects of environmental degradation on macroinvertebrate community structure and biodiversity; sociobiology and evolutionary biology

John J. Yemma, Ph.D., Dean of the College of Health and Human Services and Professor
Cell cycle kinetics; cell membrane structure and function; membrane-bound enzyme systems

Admission Requirements

In addition to the minimum School of Graduate Studies admission requirements, applicants must have completed at least 25 quarter hours of undergraduate biology (or equivalent) courses with at least a 2.5 grade-point average, plus organic chemistry, introductory physics, and statistics. The Graduate Record Examination (general test) is also required. A minimum composite score of 1300 on the verbal, quantitative, and analytical sections is expected.

Degree Requirements

A minimum of 45 quarter hours of credit is required for the M.S. degree. Students must earn a passing grade on a comprehensive written examination, pass an oral review of the candidate by the departmental Graduate Committee, and submit an acceptable thesis reporting the results of a research project. Students may repeat Biology 990 (Thesis) to a maximum of 15 quarter hours. An additional 15 quarter hours is required at the 900-1000 level. All students must take at least one quarter hour of Biology 988 and two quarter hours of Topics (Biology 991-1003) and achieve a minimum grade-point average of 3.0 for graduation.

The student's course of study will be devised during a consultation with a departmental counselor and will be approved by the departmental Graduate Faculty. The course of study will be based on the student's area of specialization, background, and career interests.

Advisement

All students in the Biological Sciences graduate program must have their course schedules approved by the graduate advisor every quarter.

Master of Science Chemistry

Program Director: James H. Mike
6014 Ward Beecher Hall
(330) 742-3750

Program Description

The Department of Chemistry offers a program of study leading to the M.S. degree with concentrations available in the five traditional areas of chemistry: analytical, biochemical, inorganic, organic, and physical. The program prepares the student for practice as a professional chemist by teaching academic fundamentals, creative and independent thinking through independent study and research, and leadership skills through interaction with undergraduate students as graduate teaching assistants. The program is also excellent preparation for further advanced study at other institutions, leading to the Ph.D. degree in chemistry or professional degrees in chemistry-related fields. The department has state-of-the-art instrumentation facilities and has readily available a wide range of major instruments for student and faculty research, including FT-NMR, FT-IR, ICP-AES, Graphite Furnace AA, Flame AA, GC/MS, many HPLCs, single crystal X-ray diffractometer, diode array spectrophotometers, fluorescence photometers, and a wide range of electrochemical instrumentation. There are many small instruments (spectrophotometers, pH meters, etc.) readily available for research use as well.

Faculty Research Interests

Janet E. Del Bene, Ph.D., Professor

Ab Initio studies of the structures, binding energies, and spectroscopic properties of acid-base complexes, with particular emphasis on hydrogen-bonded complexes; calculation and interpretation of vibrational and electronic spectra

Renee L. Falconer, Ph.D., Assistant Professor

Environmental and analytical chemistry of organic contaminants; atmospheric transport and deposition; relationship between physical properties and environmental behavior; distribution and degradation in the environment

Allen D. Hunter, Ph.D., Associate Professor

Synthesis of novel organometallics, supramolecular host/guest complexes, and high performance polymers; structural methods including NMR spectroscopy and X-ray crystallography; the application of NMR spectroscopy to the detection and classification of cancers

John A. Jackson, Ph.D., Assistant Professor

Synthetic organic chemistry; organophosphorus chemistry; synthetic methodology; biologically active compounds; asymmetric synthesis

Thomas D. Kim, Ph.D., Assistant Professor

Active site and regulatory site studies of the nitric oxide generating enzyme, nitric oxide synthase

Friedrich W. Koknat, Ph.D., Professor

Transition metal cluster compounds

Sherri Lovelace, Ph.D., Assistant Professor

Preparation and electrochemical studies of Group 6 and Manganese; π -coordinated phosphacyclic complexes, π -coordinated thiophene complexes and novel metallocenohane complexes

Howard D. Mettee, Ph.D., Professor

Thermodynamic and kinetic properties of gas-phase complex formation; chemical treatment of hazardous wastes and corrosion prevention; artificial photosynthesis

James H. Mike, Ph.D., Associate Professor

Chromatography and environmentally and biologically important molecules; development and characterization of novel chromatographic stationary phases

62 YOUNGSTOWN STATE UNIVERSITY

Daryl W. Mincey, Ph.D., Professor and Chair
Analysis of environmental materials

Steven M. Schilderout, Ph.D., Professor
Mass spectrometry; gaseous ion chemistry

Michael A. Serra, Ph.D., Assistant Professor
Effects of free radicals on proteins; analysis of antioxidants, vitamin E, and beta-carotene

Timothy R. Wagner, Ph.D., Assistant Professor
Studies of defects and disorder in crystalline oxides using TEM and X-ray analysis

Admission Requirements

In addition to the minimum School of Graduate Studies admission requirements, an applicant for admission to the M.S. degree program in the Department of Chemistry must present an undergraduate major in chemistry or the equivalent. Ordinarily, this entails the completion of at least a year's study in both organic and physical chemistry. In those cases where the undergraduate preparation is slightly deficient, the applicant may be admitted with provisional status with the approval of the Chair of the department and the Graduate Dean.

Degree Requirements

A minimum of 54 quarter hours of credit is required, including at least 36 quarter hours of courses other than Chemistry 975, 980, 981, and 990. Each student must take at least nine quarter hours of Chemistry 990, one quarter hour of Chemistry 998, each of the following core courses: Chemistry 911, 931, 941, and 951, and during the first year of study Chemistry 975, 980, and 981. Graduate teaching assistants must also register for Chemistry 976, 977, or 978 as assigned by the Department Chairperson. The total coursework in chemistry must be at least 45 quarter hours, exclusive of the core courses, outside that concentration area. Chemistry concentration areas are analytical, biochemical, inorganic, organic, and physical chemistry. A list of courses in each concentration area is available from the department. Each student must achieve a grade-point average of 3.0 or higher in chemistry courses and must complete an acceptable thesis for graduation.

Advisement

Each entering student will be assigned a temporary advisor. The student should select a thesis advisor, who will assist the candidate in planning the remainder of the program, by the time 18 quarter hours of graduate studies have been completed.

Master of Science Criminal Justice

Program Director: C. Allen Pierce
2087 Cushwa Hall
(330) 742-1790

Program Description

The Master of Science in Criminal Justice at YSU provides professional education of criminal justice personnel in correctional treatment and administration, police management, and program planning and evaluation. The curriculum allows each student to choose one of these tracks along with a core of coursework in order to complete the degree.

Criminal Justice faculty members are currently involved in research in police management theory, applied police management, correctional organization and treatment, and criminological theory. Students are encouraged to participate in this ongoing research.

Faculty Research Interests

James A. Conser, Ph.D., Associate Professor and Chair

Police administration; personnel management; security; loss prevention; law enforcement; training and futuristics

Elaine Greaves, Assistant Professor

Criminal law; criminal procedure; the law of evidence; legal research; constitutional issues; juvenile justice issues; criminal courts structure

C. Allen Pierce, Ph.D., Professor

Police organizational behavior; police human resource allocation; issues in criminal procedure; criminal justice (system analysis); criminal justice education; crime and crime statistics

Joseph A. Waldron, Ph.D., Professor

Computerized test development; research methods; program planning; treatment approaches

Admission Requirements

While an undergraduate degree in this discipline is not required for admission, a substantial background in the social sciences is preferred. Students lacking such preparation will, at the discretion of the department, be required to make up deficiencies. Each student must complete the equivalent of the YSU criminal justice undergraduate core and an introductory course in both research methodology and statistics. A student admitted with deficiencies in any of these requirements must remove them before completing the second quarter of graduate coursework.

The requirement for admission on regular status is an unrecalculated cumulative grade-point average in undergraduate work of at least 2.7, or at least 3.0 in the last 60 quarter hours, based on a 4.0 scale; or an unrecalculated cumulative grade-point average in undergraduate work of at least 2.5 on a 4.0 scale and a combined Graduate Record Examination score of 1200 on the general aptitude test or 40 on the Miller Analogies Test.

Requirements for admission on other than a regular basis are covered in this catalog under "Provisional Admission."

Upon admission to the criminal justice graduate program and selection of emphasis area, each student is guided by a committee of three faculty members. The student selects a graduate advisor in the area of concentration from the faculty of the Department of Criminal Justice. This advisor serves as the chair of the student's graduate committee. The student and advisor select the other two members of the committee, both of whom must be members of the graduate faculty and one of whom may come from a department other than Criminal Justice. This committee will assist the student as appropriate with

64 YOUNGSTOWN STATE UNIVERSITY

the planning of the program, preparation and oral defense of the thesis, or administration of the comprehensive examination in the case of the nonthesis option.

Degree Requirements

The graduate program in Criminal Justice adheres to the position that the administration of criminal justice is a continuous integrated process from prevention of crime through completion of all legal intervention. The program is designed to provide society with individuals who have both a substantial awareness of the overall system and the essential competencies required to perform professional roles within it. To achieve this objective, the program broadens the student's knowledge of the total criminal justice process and provides professional education so that its graduates may assume positions of leadership within the criminal justice system.

Students seeking the M.S. degree in criminal justice may elect either a thesis or nonthesis option, with the exception of emphasis area A, which is thesis only.

Thesis Option

A minimum of 45 quarter hours credit is required in this option, of which nine are thesis. No more than 12 quarter hours may be below the 900 level.

Nonthesis Option

A minimum of 52 quarter hours credit is required, of which no more than one-third may be below the 900 level. A written comprehensive examination is also required and may not be taken until the student has completed 75 percent of the coursework.

The graduate curriculum consists of two major components:

- 1) Study in the major substantive areas of criminal justice, normally met by completing the graduate core of 910, 915, 920, and 925. Any departure from this requires prior approval of the graduate coordinator.
- 2) Concentrated study in one of three emphasis areas, which prepares students for professional positions within the American system of criminal justice. Each student is required to choose emphasis area A, B, or C during the first quarter of enrollment in the graduate program. All electives are selected by the student in consultation with the advisor, subject to the approval of the graduate coordinator.

Emphasis Area A: Criminal Justice Program Planning and Evaluation

This area is designed to provide skills in action program planning and evaluation in the criminal justice setting. The requirements are 940, 945, 960, and a thesis.

Emphasis Area B: Police Management

This area is designed to provide individuals with the necessary academic and professional competencies for middle management and executive positions in police organizations. The required courses are 970, 971, and 972.

Emphasis Area C: Correctional Administration and Treatment

This area is designed to develop academic and professional competency in the area of corrections. The required courses are 980, 981, and 982.

Master of Science Mathematics

Program Director: Frank Arlinghaus
1088 Cushwa Hall
(330) 742-1971

Program Description

The Department of Mathematics offers the M.S. degree. A computer science option to this degree is also available. Faculty members have a broad range of research interests, representing both pure and applied areas. The curriculum stresses theoretical as well as computational mathematics and is flexible enough that a student's program can be keyed to individual interests and abilities. The student receives a well-rounded education in mathematics. Graduates are prepared to pursue a Ph.D. in mathematics as well as to secure a position in government or industry. The department has extensive computing facilities that include microcomputers, workstations, the University mainframe, and access to supercomputers.

Faculty Research Interests

Francis A. Arlinghaus, Ph.D., Assistant Professor
Structure of classical groups and related structures; geometric algebra; quadratic and hermitian forms

Samuel F. Barger, Ph.D., Professor
Discrete mathematics

John J. Buoni, Ph.D., Professor and Chair
Numerical linear algebra; operator theory

Richard L. Burden, Ph.D., Professor
Numerical analysis and scientific computing

Anita C. Burris, Ph.D., Assistant Professor
Graph theory; combinatorics

Guang-Hwa Chang, Ph.D., Assistant Professor
Statistics; nonparametric statistics; statistical computing; image processing

Douglas Faires, Ph.D., Professor
Analysis; numerical analysis; mathematics history

John P. Holcomb, Ph.D., Assistant Professor
Statistics; measurement error modeling

Steven L. Kent, Ph.D., Professor
Mathematical physics; Yang-Mills theory

R. Bruce Mattingly, Ph.D., Associate Professor
Numerical linear algebra; Markov Chains; high-performance computing

66 YOUNGSTOWN STATE UNIVERSITY

Bernadette Mullins, Ph.D., Assistant Professor
Commutative ring theory

Zbigniew Piotrowski, Ph.D., Professor
General topology; real analysis; descriptive set theory; topological algebra

Nathan P. Ritchey, Ph.D., Associate Professor
Operations research; applied mathematics; medical decision making; stochastic modeling

Stephen Rodabaugh, Ph.D., Professor
Foundations of topology and fuzzy sets with emphasis on point-set, lattice-theoretic, and categorical methods

Thomas D. Smotzer, Ph.D., Assistant Professor
Real analysis; complex analysis; operator theory

Eric J. Wingle, Ph.D., Professor
Real analysis; complex analysis; operator theory

Admission Requirements

In addition to the minimum School of Graduate Studies admission requirements, students must also have:

- 1) An unrecalculated undergraduate cumulative grade-point average of at least 2.7 (on a 4.0 scale) in all undergraduate mathematics and computer science courses.
- 2) Preparation judged satisfactory by the Department of Mathematics. Study in theoretical analysis and algebraic structures is required as part of the preparation. Students with slight deficiencies may be admitted with provisional status with the approval of the graduate program director in the Department of Mathematics and the Graduate Dean.

Degree Requirements

- 1) A minimum of 46 quarter hours of credit not including Math 901 or Math 902 or their equivalents.
- 2) A cumulative grade-point average of at least 3.0.
- 3) The student's graduate program must include Math 825, 872, 905, and 920, or the equivalent, and an applied Mathematics course chosen from a list of approved courses on file in the Department of Mathematics & Statistics office, as well as 996 or 999.
- 4) Satisfactory performance on written and oral examinations is required. The subject matter for these examinations should in part reflect both the core courses specified in (3) and the option selected (see 5), and must be approved by the Graduate Executive Committee. A student who selects a thesis (see 3) will be expected to make a successful oral defense of the thesis as the oral component of their exam.
- 5) Before completing 16 quarter hours, the student must submit, through an advisor, the entire degree program for approval by the Graduate Executive Committee in the Department of Mathematics & Statistics. Subsequent revisions to this program must be approved by the Graduate Executive Committee. An abstract of the proposed thesis for 6 quarter hours, or project for 2 quarter hours, must be submitted for approval prior to registering for these hours.

Description of Options

There are several options, beyond the core, that a graduate student may choose. In the description of these options, depth means at least two courses in a sequence at the 800/900-level, and the applied mathematics group refers to a list of approved courses on file in the Department of Mathematics & Statistics office. In each option Math 995 may be used where appropriate.

Option I, Predoctoral Studies in Mathematics

Additional course work beyond the core should include Math 880, 875, and 965. The student should select at least one area of depth in consultation with an advisor so as to best prepare for future education. For a student interested in pure mathematics, examples of depth might include at least the second course from one of the following sequences: Math 880/980/981, 875/975/976, 920/921, or 965/966/967. For a student interested in applied mathematics, depth could be chosen from the applied mathematics group.

Option II, Predoctoral Studies in Statistics

Additional course work beyond the core should include Math 841 and 843. Depth should include at least the first course from at least one of the following sequences: Math 948/949 or 945/946. The sequence Math 845/942 is also appropriate to this option. Following this option satisfies the core requirement in applied mathematics.

Option III, Preparing to Obtain a Position in Industry (including actuarial science)

If the student is interested in a traditional applied option, then additional course work beyond the core should include at least the first course in each of the following sequences: Math 845/942, 855/952, and 861/925/926, as well as at least the second course, for depth, from at least one of these sequences. If the student is interested in statistical training for industry (including actuarial science,) then at least the first course in each of the following sequences should be included: Math 841/948/949, 843/945/946, 845/942, and 861/925/926, as well as at least the second course, for depth, from at least one of these sequences. A student choosing this option may select graduate courses outside the Department of Mathematics & Statistics, to complement a specific interest, subject to approval by the Graduate Executive Committee, and should also have course work in computer science either as part of the graduate program or prior to beginning the graduate program. Following this option satisfies the core requirement in applied mathematics.

Option IV, Preparing for a Teaching Position in K-12 or in community/junior colleges

Additional course work beyond the core should include Math 828 or 838, 841 or 843, 845, and 903, as well as one additional course for depth to be chosen from Math 928, 930, 933, 938, or 921, or some other course approved by the Graduate Executive Committee. Those students seeking teaching certification should consult an advisor in the School of Education. Following this option satisfies the core requirement in applied mathematics.

Option V, Computer Science Option

Students in this option should plan the graduate program in consultation with advisors in both the Department of Mathematics & Statistics and the Department of Computer and Information Sciences. Additional course work beyond the core should include Math 838 and 861. Selections from Math 842, 925/926, and 938 are also advised. Also, at least 16 quarter hours must be in computer science and should include CSCI 905, 910, and 915, unless the student had this material previously, in which case

the depth requirement can be satisfied by including other 900-level computer science courses. Students in this option may elect to do their project or thesis (see 3) in Computer Science. Following this option satisfies the core requirement in applied mathematics.

Option VI, Individualized Program of Study

Students with a career goal not addressed by the options above will select additional course work beyond the core appropriate to this goal, including depth, in consultation with an advisor.

Master of Science in Education Counseling

Program Director: James R. Rogers
2063 Fedor Hall
(330) 742-3257

Program Description

The Counseling program prepares individuals to serve as professional counselors for schools, colleges, and community mental health settings. The required core courses are those considered to represent basic knowledge and skills essential for professional counselors in all three environments. The common core includes courses in professional orientation, counseling theory, counseling skills, career counseling, group counseling, measurement, and consultation. In addition to the core courses, coursework in theoretical foundations and specialty studies must be completed before completion of a six- to nine-month internship in the student's area of specialization. The Community Counseling and School Counseling options are accredited by the Council for the Accreditation of Counseling and Related Educational Programs (CACREP). School Counseling is also accredited by the National Council for Accreditation of Teacher Education (NCATE) and approved by the Ohio Department of Education. The programs meet the basic coursework requirements for Ohio Counselor licensure.

Option A: School Counseling

The school counseling program meets the education requirements for school counselor certification in the state of Ohio. Students seeking Ohio school counselor certification, however, must also hold a valid teaching certificate, have three years of classroom teaching experience, and pass the standardized school counseling specialty portion of the National Teacher Exam administered by Educational Testing Service.

Students seeking school counselor certification in other states, such as Pennsylvania, have the responsibility to ensure that they meet the requirements of that particular state.

Internships of nine months' duration must be completed in an approved education setting.

Option B: Community Counseling

Community counselors are employed in a variety of settings, such as mental health facilities, community human services centers, crisis intervention agencies, courts, chemical dependency treatment programs, and hospitals. A six- to nine-month internship in an appropriate community setting is required.

Option C: Higher Education Student Services

Many colleges and universities employ professional counselors for student personnel programs. This field of employment is diverse and embraces a wide range of professional counseling skills. Internships of six to nine months' duration must be completed in approved higher education settings.

Faculty Research Interests

Sherry Gallagher Warden, Ph.D., Associate Professor
 Marriage and family; groups; school counseling; ethical issues in counseling

Jan Gill-Wigal, Ph.D., Professor
 Consultation; behavioral medicine; ethical issues in counseling

Robert A. Rando, Ph.D., Assistant Professor
 Counselor training and supervision; sexual and physical aggression; counseling process and outcome; student retention

James R. Rogers, Ph.D., Assistant Professor and Chair
 Suicide; euthanasia; psychometrics; violence; statistics

Admission Requirements

All applicants to the counseling degree program must have appropriate undergraduate preparation. Normally, this would include sufficient coursework in psychology and sociology. Every applicant will be interviewed by the Counseling Admissions Committee and must meet the standards prescribed in the Department of Counseling's admission policies. Since the counseling admissions standards exceed the minimum standards set by the School of Graduate Studies, all applicants must obtain a copy of the admissions policies from the Department of Counseling before formally applying for admission.

Non-degree students must apply to the Department of Counseling through the same procedure as degree-seeking students. The exception to this procedure is for individuals who have a master's degree in counseling and are interested in entering the Post-Master's sequence of study. Departmental admission to the Post-Master's program requires an interview with the program coordinator. Non-degree students may not take those counseling courses specified under the Foundations, Core and Cognate areas of the various curricula, except for Counseling 900 (Counseling Methods and Practice) and Counseling 980 (Introduction to Clinical Counseling.) Any counseling course taken by a non-degree student must be approved by the Counseling Department Chairperson or his/her designee. A non-degree student who wishes to work toward Ohio State LPC, LPCC or school counseling certification must meet all the requirements of the regular admission process.

Degree Requirements

Students are required to take the Counseling Comprehensive Exam before enrolling in Counseling 1002. Acceptable performance on the exam is necessary to continue in the program.

In the curriculum listed later, 12 to 15 quarter hours of internship are required in each program. Since this requirement entails 20 to 40 hours per week at the internship site, students who are employed full time may need to arrange for leaves of absence with their employers to fulfill this requirement. The M.S. in Ed. degree with a Counseling major requires a minimum of 72 quarter hours. Completion of this program normally requires two years of full-time study (9 to 12 q.h.) over a period of six to eight quarters.

70 YOUNGSTOWN STATE UNIVERSITY

Option A: School Counseling

1) Foundations (12 quarter hours)

Found. 901 Philosophical Foundations of Educ. Theory and Practice	3 q.h.
Couns. 976 Social and Cultural Issues in Counseling	3 q.h.
Found. 904 Educational Research or	
Couns. 968 Applied Research and Development in Counseling	3 q.h.
Psych. 906 Human Growth and Development	3 q.h.

2) Core Counseling Courses (29 quarter hours)

Couns. 898 Introduction to Professional Counseling in School and Community Contexts	3 q.h.
Couns. 900 Counseling Methods and Practice	3 q.h.
Couns. 962 Counseling: Principles, Theory, Practice	3 q.h.
Couns. 964 Measurement and Assessment Techniques	3 q.h.
Couns. 972 Career Counseling	4 q.h.
Couns. 973 Group Counseling Theory and Practice	4 q.h.
Couns. 975 Counselor Consultation	3 q.h.
Couns. 1001 Counseling Practicum I	3 q.h.
Couns. 1002 Counseling Practicum II	3 q.h.

3) Cognate Area (9-12 quarter hours)

Couns. 961 Intro. to Pupil Personnel Services*	3 q.h.
Couns. 970 Counseling and Social Services in the Schools*	3 q.h.
Couns. 822W Drug Education and Prevention*	3 q.h.
Couns. 1030 Human Relations Training for School Personnel	3 q.h.

*required cognate course. Additional or substitute cognate coursework will be developed by the student and his/her advisor with the approval of the department Chair. The cognate area should be developed in accordance with certification requirements, the student's interests and needs, and the availability of relevant coursework.

4) Internship (12-15 quarter hours)

Couns. 1009 School Counseling Internship	3-12 q.h.
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5) Electives (4 quarter hours). To be approved by the student's advisor. Required coursework for the M.S. in Ed. degree with a major in school counseling is a minimum of 72 quarter hours.

Option B: Community Counseling

1) Foundations (9-12 quarter hours) The behavioral foundations area stresses a theoretical base considered essential to the counselor's effectiveness in community counseling. Even though credit earned in appropriate upper-division courses (junior- and senior-level) will be considered adequate coursework in the respective foundations areas, all students will be required to earn a minimum of nine graduate credits in applied research, human growth and development, and social and cultural issues related to counseling. However, students who have not completed relevant undergraduate coursework in the behavioral sciences may be required to complete more than nine hours of graduate credit in foundations areas. Specific coursework for each student should be developed in cooperation with his/her advisor.

Couns. 976 Social and Cultural Issues in Counseling*	3 q.h.
Couns. 968 Applied Research and Development in Counseling*	3 q.h.
Psych. 802 Personality	4 q.h.
Psych. 828 Physiological Psychology	4 q.h.
Psych. 903 Psychology of Learning	3 q.h.

Psych. 906 Human Growth and Development*	3 q.h.
Psych. 907 Psychology of Adjustment	3 q.h.
Psych. 950 Survey of Personality Assessment	3 q.h.
Soc. 902 Child and Society	4 q.h.

*required foundations course

2) Core Counseling Courses (29 quarter hours)

Couns. 898 Introduction to Professional Counseling in School and Community Contexts	3 q.h.
Couns. 900 Counseling Methods and Practice	3 q.h.
Couns. 962 Counseling: Principles, Theory, Practice	3 q.h.
Couns. 964 Measurement and Assessment Techniques	3 q.h.
Couns. 972 Career Counseling	4 q.h.
Couns. 973 Group Counseling Theory and Practice	4 q.h.
Couns. 975 Counselor Consultation	3 q.h.
Couns. 1001 Counseling Practicum I	3 q.h.
Couns. 1002 Counseling Practicum II	3 q.h.

3) Cognate Areas (6-12 quarter hours)

Each student must complete a cognate area consisting of a minimum of six credit hours of study. Cognate areas will be developed by each student with his/her advisor in accordance with student need, interest, and the availability of relevant coursework.

The required cognate course for all community counseling majors is:

Couns. 980 Introduction to Clinical Counseling	3 q.h.
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Examples of cognate areas follow:

SUBSTANCE ABUSE COUNSELING

Couns. 822W Drug Education and Prevention	3 q.h.
Couns. 902 Introduction to Chemical Dependency	3 q.h.
Couns. 903 Chemical Dependency Counseling	3 q.h.

MARRIAGE AND FAMILY COUNSELING

Couns. 991 Introduction to Marriage and Family Counseling	3 q.h.
Couns. 992 Counseling with Couples	3 q.h.
Couns. 1038 Advanced Marriage and Family Counseling	3 q.h.
Couns. 902 Introduction to Chemical Dependency	3 q.h.

CHILD AND ADOLESCENT COUNSELING

Couns. 822W Drug Education and Prevention	3 q.h.
Couns. 991 Introduction to Marriage and Family Counseling	3 q.h.
Couns. 1003 Counseling with Children and Adolescents	3 q.h.

ADMINISTRATION AND SUPERVISION OF COUNSELING SERVICES

Couns. 969 Administration of Personnel and Guidance Services	3 q.h.
Couns. 1008 Assessment for Educational Decision Making	3 q.h.
Couns. 1040 Supervision of Counseling Services	3 q.h.

MEASUREMENT AND ASSESSMENT IN COUNSELING

Psych. 920 Individual Intelligence Testing: Theory and Application I	3 q.h.
Psych. 921 Individual Intelligence Testing: Theory and Application II	3 q.h.
Psych. 923 Individual Intelligence Testing: Practicum	3 q.h.
Couns. 965 Applied Testing in Career Counseling	3 q.h.
Couns. 1008 Assessment for Educational Decision Making	3 q.h.

72 YOUNGSTOWN STATE UNIVERSITY

CAREER COUNSELING

Psych. 806 Vocational Guidance	4 q.h.
Couns. 822F Seminar in Career Counseling	3 q.h.
Couns. 963 Occupational Information in Guidance	3 q.h.
Couns. 965 Applied Testing in Career Counseling	3 q.h.

EXCEPTIONAL CHILDREN

Couns. 862 or	
Sp.Ed. 862 Principles of Interaction with Special Needs Students	3 q.h.
Sp.Ed. 863 Learning Disabilities and Behavior Disorders	4 q.h.
Sp.Ed. 982 Educational Assessment in Gifted and Special Education	4 q.h.
Couns. 879 Counseling with Gifted/Talented Students and Their Families	4 q.h.
Psych. 981 or	
Sp.Ed. 981 Seminar in Special Education	3 q.h.

4) Internship (12-15 quarter hours)

Couns. 1010 or Psych. 1010 Counseling Internship	6-12 q.h.
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Admittance to the field studies component as listed below is dependent upon:

a) successful completion of at least 36 quarter hours of graduate coursework that has been appropriately distributed among the behavioral foundations, counseling theory and practice, and cognate areas of study, and

b) successful completion of a comprehensive examination which covers basic counseling theory and practice.

5) Electives (3-9 quarter hours). To be approved by the student's advisor. Required coursework for the M.S. in Ed. degree with a major in community counseling is a minimum of 72 quarter hours.

Option C: Higher Education Student Services

1) Foundations (9-12 quarter hours) Foundations requirements are determined in accordance with the student's interests and program needs. The courses will normally be distributed among these courses listed or others approved by the department Chair.

Found. 901 Philosophical Foundations of Educ. Theory and Practice	3 q.h.
Phil. 815 Existentialism	4 q.h.
Found. 900 Seminar in History of the Education of Children and Youth	3 q.h.
Found. 905 A History of American Education	3 q.h.
Found. 902 Socio-Cultural Aspects of Education	3 q.h.
Found. 904 Educational Research	3 q.h.
Couns. 968 Applied Research and Development in Counseling*	3 q.h.
Psych. 906 Human Growth and Development*	3 q.h.
Psych. 907 Psychology of Adjustment	3 q.h.
Soc. 902 Child and Society	4 q.h.
Couns. 976 Social and Cultural Issues in Counseling*	3 q.h.

*required foundations course

2) Core Counseling Courses (29 quarter hours)

Couns. 898 Introduction to Professional Counseling in School and Community Contexts	3 q.h.
Couns. 900 Counseling Methods and Practice	3 q.h.
Couns. 962 Counseling: Principles, Theory, Practice	3 q.h.
Couns. 964 Measurement and Assessment Techniques	3 q.h.

Couns. 972 Career Counseling	4 q.h.
Couns. 973 Group Counseling Theory and Practice	4 q.h.
Couns. 975 Counselor Consultation	3 q.h.
Couns. 1001 Counseling Practicum I	3 q.h.
Couns. 1002 Counseling Practicum II	3 q.h.

3) Cognate Area (6-12 quarter hours)

Couns. 963 Occupational and Educational Information in Guidance	3 q.h.
Couns. 974 Case Studies in School Guidance	3-6 q.h.
Couns. 1017 Group Procedures in Counseling	3 q.h.
Couns. 1026 Student Personnel Programs in Higher Education*	4 q.h.
Couns. 1027 Issues in College Student Personnel Work*	4 q.h.

*required cognate course. Additional or substitute cognate coursework may be developed by the student and his/her advisor with the approval of the department Chair. The cognate area should be developed in accordance with student interest, needs, and the availability of relevant coursework.

4) Internship (12-15 quarter hours)

Couns. 1005 Internship in Higher Education Student Services	6-12 q.h.
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5) Electives (3-9 quarter hours) Required coursework for the M.S. in Ed. degree with a major in higher education student services is a minimum of 72 quarter hours.

Post-Master's Course of Study in Clinical Counseling

Program Description

This post-master's sequence of study meets coursework requirements for licensure in Ohio as a Licensed Professional Clinical Counselor.

Admission Requirements

The minimum requirement for admission into this course of study is completion of a master's degree in counseling that meets the education requirements of the State of Ohio Counselor and Social Worker Board for licensure as a professional counselor (LPC).

Preference will be given to applicants who meet or exceed the following: 3.5 grade-point average (in master's coursework) and 60 MAT or 1100 GRE. In addition, preference will be given to applicants who are:

- 1) practitioners in the field;
- 2) National Certified Counselors or who meet eligibility requirements for the NCC;
- 3) active in counseling professional organizations;
- 4) licensed in Ohio at the Licensed Professional Counselor (LPC) level.

Curriculum

In addition to meeting the educational requirements for Licensed Professional Counselor set forth in section 4757.07 of the Ohio Revised Code and in Rule 4757-7-02 of the Administrative Code, a student in the YSU Clinical Counseling course of study must earn a minimum of 30 quarter hours of instruction comprising at least one graduate course in each of the following areas:

- 1) clinical psychopathology, personality, and abnormal behavior;
- 2) evaluation of mental and emotional status;

74 YOUNGSTOWN STATE UNIVERSITY

- 3) diagnosis of mental and emotional disorders;
- 4) methods of intervention and prevention of mental and emotional disorders; and
- 5) treatment of mental and emotional disorders.

The following represents coursework for the post-master's clinical counseling endorsement curriculum.

- 1) Clinical Counseling Core (15 quarter hours)
 - Couns. 1031 Clinical Counseling Theory (1,3) 3 q.h.
 - Couns. 1032 Clinical Evaluation I (2,3) 3 q.h.
 - Couns. 1036 Consultation and Educational Approaches to Prevention (4)
(prereq.: Couns. 975) 3 q.h.
 - Couns. 1037 Counseling Methods of Intervention and Prevention (4) 3 q.h.
 - Couns. 1041 Clinical Counseling Practice III (5) 3 q.h.
- 2) Cognate Areas (9-12 quarter hours; such areas as developed by student with advisor)

PSYCHOLOGY

- Psych. 920 Intelligence Testing, Theory and Application I (2) 3 q.h.
- Psych. 921 Intelligence Testing, Theory and Application II (2) 3 q.h.
- Psych. 940 Personality Theory (1) 3 q.h.
- Psych. 950 Survey of Personality Assessment (2,3) (prereq. 840) 3 q.h.
- Psych. 955 Psychopathology (1,3) 3 q.h.
- Psych. 1000 Psychopharmacology (5) 3 q.h.
- Couns. 1034 Practicum in Clinical Evaluation (2,3) 3 q.h.

MARRIAGE AND FAMILY COUNSELING

- Couns. 821F Introduction to Marriage and Family Counseling (4) 3 q.h.
- Couns. 1038 Marriage and Family Counseling (5) (prereq.: 821F) 3 q.h.

MENTAL HEALTH ADMINISTRATION AND SERVICES

- Couns. 1039 Admin. and Super. of Mental Health Services (4) 4 q.h.

- 3) Internship (6-12 quarter hours)
 - Couns. 1050 Clinical Counseling Internship (5) 6-12 q.h.

Master of Science in Education Educational Administration

Program Director: Robert J. Beebe
2008 Fedor Hall
(330) 742-1436

Program Description

The Department of Educational Administration prepares reflective administrative practitioners who are capable of providing effective management and instructional leadership in public and nonpublic school settings (also see the Ed.D. in Educational Leadership section of this catalog). Post-Master's

programs are also provided, which lead to Ohio administrative certification as elementary principal, high school principal, seven types of educational administrative specialists, assistant superintendent, and superintendent. In addition, the department offers programs for Pennsylvania administrative certification as elementary principal, high school principal, and the letter of eligibility for superintendent. A variety of professional training and service activities are also available.

Faculty Research Interests

Reene A. Alley, Ed.D., Associate Professor
Principalship; school and community relations

Robert Beebe, Ed.D., Professor and Chair
Administrative theory; personnel administration

Howard Pullman, Ph.D., Professor
Computer applications; school business management

David P. Ruggles, Ph.D., Professor
Finance; institutional evaluations

Charles Vergon, J.D., Professor
Education law; policy development; educational change

Linda H. Wesson, Ph.D., Associate Professor,
Principalship; leadership

Admission Requirements

In addition to the minimum School of Graduate Studies admission requirements, the Educational Administration program requires that applicants have:

- 1) Qualification for a teaching certificate (Ohio provisional or equivalent) if enrolled in a program leading to additional certification, validation, or endorsement. Students without a teaching certificate may be admitted on an individual basis to graduate programs leading to certification in certain areas which are graduate level only.
- 2) A satisfactory score on the aptitude portion of the Graduate Record Examination or on the Miller Analogies Test if the student's unrecalculated undergraduate grade-point average is below 2.5.
- 3) Three professional recommendations.

Degree Requirements

A minimum of 48 quarter hours is required for the degree. In general, the Educational Administration program requires a core of foundation courses, a core of administrative courses, curriculum and supervision courses, and successful completion of a comprehensive examination covering the administrative core.

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|---|--------|
| 1) Foundations & Learning Theory (12 quarter hours) | |
| Psych. 903 Psychology of Learning | 3 q.h. |
| Psych. 906 Human Growth & Development | 3 q.h. |
| Found. 904 Educational Research | 3 q.h. |

76 YOUNGSTOWN STATE UNIVERSITY

Found. 901 Philosophical Found. of Educ. Theory and Practice or	
Found. 902 Social-Cultural Aspects of Education or	
Found. 905 A History of American Education	3 q.h.

2) Administrative Core (21 quarter hours)

Ed.Adm. 949 School Law	3 q.h.
Ed.Adm. 952 School Finance	3 q.h.
Ed.Adm. 954 School Community Relations	3 q.h.
Ed.Adm. 955 Staff Personnel Administration	3 q.h.
Sp.Ed. 977 Supervision, Administration, and Program Development in Gifted and Special Education	3 q.h.
Ed.Adm. 1021 Field Experience I*	3 q.h.
Ed.Adm. 1031 Theories of Educational Administration	3 q.h.

*Admission to Field Experience I may be granted only by the Chair of the Educational Administration Department and after completion of a minimum of 18 quarter hours and a maximum of 30 quarter hours. Check prerequisites in the "Courses" section of this catalog.

3) Curriculum and Supervision (15 quarter hours)

Found. 889 Small Computer Applications in the Classroom	3 q.h.
Sec.Ed. 946 The Supervision of Instruction	3 q.h.
Sec.Ed. 951 Interpersonal Communication for Administrators	3 q.h.
Couns. 961 Introduction to Pupil Personnel Services	3 q.h.
Sec.Ed. 1036 Fundamentals of Curriculum Development	3 q.h.

4) Special Notes

Candidates must successfully complete a comprehensive examination covering the Administrative Core after completing these 21 quarter hours and before granting of the degree.

This program provides no certification in administrative areas. Upon completion of the basic M.S. in Education, Educational Administration degree, or the equivalent thereof as evaluated by the Department of Educational Administration, enrollment in the following specific certification fields* may be permitted: Elementary Principalship; Secondary Principalship; Educational Administrative Specialist; Assistant Superintendent; Superintendent or Local Superintendent.

*Completion of the minimum number of quarter hours indicated for each program and of any other Ohio State Department of Education requirements must be achieved before recommendation for any certificate. Those seeking initial administrative certification in the State of Ohio must score at least 500 on the National Teachers Examination Specialty Area Test in Educational Leadership: Administration and Supervision.

All transfer students, including those seeking a master's degree and those who hold a master's degree, will be evaluated using the criteria listed previously. Students who have been evaluated through direct contact with the Ohio State Department of Education should be aware that they must meet the criteria established by the Department of Educational Administration at YSU before the M.S. in Ed. in Educational Administration will be granted.

Post-Master's Certification Requirements

Candidates for any administrative certificate must have completed the 48-quarter-hour M.S. in Ed. in Educational Administration as required by YSU, or its equivalent, as evaluated by the Department of Educational Administration.

Elementary Principal

Completion of Educational Administration degree and 25 quarter hours as listed below and any other Ohio State Department of Education requirements.

EMCE 916 The Elementary School Curriculum	3 q.h.
Ed.Adm. 947 Basic Prin. of Elementary School Administration	3 q.h.
Ed.Adm. 950 School Business Management	3 q.h.
EMCE 816 Diagnosis & Remediation of Elem. School Mathematics	3 q.h.
EMCE 917 Survey of Reading & Language Arts Program	3 q.h.
Ed.Adm. 988 Evaluation of Educational Institutions	3 q.h.
Ed.Adm. 908 Computer Applications for Administrators	3 q.h.
Ed.Adm. 1022 Field Experience II (in an elementary school)	3 q.h.

Secondary Principal

Completion of Educational Administration degree and 21 quarter hours listed below and any other Ohio State Department of Education requirements.

Sec.Ed. 931 The Secondary School Curriculum	3 q.h.
Ed.Adm. 948 Basic Principles of Secondary School Administration	3 q.h.
Ed.Adm. 950 School Business Management	3 q.h.
Ed.Adm. 988 Evaluation of Educational Institutions	3 q.h.
Sec.Ed. 934 Diagnostic-Prescriptive Education	3 q.h.
Ed.Adm. 908 Computer Applications for Administrators	3 q.h.
Ed.Adm. 1022 Field Experience II* (in a secondary school)	3 q.h.

*Field Experience II requires completion of the above sequence of courses and the permission of the Chair of the Department of Educational Administration. Check prerequisites in the "Courses" section of this catalog.

Educational Administrative Specialist

Provisional certificate for an educational administrative specialist will be issued to the holder of a master's degree in Educational Administration, or the equivalent thereof, with 68 quarter hours of graduate work including the following courses:

Business Management

Ed.Adm. 1031 Theories of Educational Administration	3 q.h.
Ed.Adm. 950 School Business Management	3 q.h.
Ed.Adm. 956 Educational Facilities	3 q.h.
Ed.Adm. 1041 Field Experiences in School Plant Planning	3 q.h.
Acct. 900 Financial Accounting for Management	5 q.h.
Acct. 902 Management Accounting Systems	3 q.h.
Ed.Adm. 952 School Finance	3 q.h.
Sec.Ed. 1036 Fundamentals of Curriculum Development	3 q.h.
Ed.Adm. 1024 Seminar: Collective Bargaining	3 q.h.
Econ. 946 Theory of State and Local Finance	or
Ed.Adm. 952 School Finance	3 q.h.
Ed.Adm. 1022 Field Experience II*	3 q.h.

*Concentration in School Business Management; check prerequisites in the "Courses" section of this catalog.

78 YOUNGSTOWN STATE UNIVERSITY

Educational Research

Found. 872 Statistical Methods in Education	3 q.h.
Found. 904 Educational Research	3 q.h.
Couns. 964 Measurement and Assessment Techniques	3 q.h.
Couns. 965 Applied Testing in Career Counseling	3 q.h.
EMCE 923 Review of Reading Research	4 q.h.
Ed.Adm. 954 School Community Relations	3 q.h.
Found. 932 Theory and Practice in Evaluation Research	3 q.h.
Found. 933 Proposal Writing in Education	4 q.h.
Found. 953 Philosophy of and Knowledge in Educational Research	3 q.h.
Found. 980 Advanced Statistical Methods in Education	3 q.h.
Found. 998 Field Experience in Educational Research	3 q.h.

Educational Staff Personnel Administration

Couns. 1030 Human Relations Training for School Personnel	3 q.h.
Ed.Adm. 1031 Theories of Educational Administration	3 q.h.
Sec.Ed. 946 Supervision of Instruction	3 q.h.
Sec.Ed. 1036 Fundamentals of Curriculum Development	3 q.h.
Sec.Ed. 951 Interpersonal Communication for Administrators	3 q.h.
Ed.Adm. 955 Staff Personnel Administration	3 q.h.
Sec.Ed. 959 Law for Classroom Teachers	3 q.h.
EMCE 921 Issues, Problems and Developments in Elementary Education	3 q.h.
EMCE 909 Supervision of Student Teachers-Elementary	3 q.h.
Sec.Ed. 910 Supervision of Secondary Schools	3 q.h.
Sec.Ed. 1032 Theories of Supervision	3 q.h.
Ed.Adm. 1024 Seminar: Collective Bargaining	3 q.h.
Ed.Adm. 1038 Planned Field Experience for Staff Personnel Administration	3 q.h.

Instructional Services

Ed.Adm. 1031 Theories of Educational Administration	3 q.h.
Sec.Ed. 946 The Supervision of Instruction	3 q.h.
Sec.Ed. 1036 Fundamentals of Curriculum Development	3 q.h.
EMCE 916 The Elementary School Curriculum	3 q.h.
Sec.Ed. 931 The Secondary School Curriculum	3 q.h.
Sec.Ed. 959 Law for the Classroom Teacher	3 q.h.
Ed.Adm. 988 Evaluation of Educational Institutions	3 q.h.
Sec.Ed. 934 Diagnostic-Prescriptive Education	3 q.h.
Found. 933 Proposal Writing in Education	4 q.h.
Ed.Adm. 1037 Planned Field Experience in Instructional Services	3 q.h.

Pupil Personnel Administration

Couns. 969 Administration of Personnel and Guidance Services	3 q.h.
Ed.Adm. 955 Staff Personnel Administration	3 q.h.
EMCE 1030 Human Relations Training for School Personnel	3 q.h.
Couns. 1009 School Counseling Internship	6-12 q.h.
Ed.Adm. 949 School Law	3 q.h.
Sec.Ed. 959 Law for the Classroom Teacher	3 q.h.

School and Community Relations

Ed.Adm. 1031 Theories of Educational Administration	3 q.h.
Sec.Ed. 946 The Supervision of Instruction	3 q.h.
Sec.Ed. 1036 Fundamentals of Curriculum Development	3 q.h.
Ed.Adm. 954 School Community Relations	3 q.h.
EMCE 921 Issues, Problems & Developments in Elementary Education	3 q.h.
Sec.Ed. 951 Interpersonal Communications for Administrators	3 q.h.
Couns. 1030 Human Relations Training for School Personnel	3 q.h.
Found. 915 Critiques on Contemporary Education	3 q.h.
EMCE 911 Early Childhood Programs	3 q.h.
Found. 905 A History of American Education	3 q.h.
Sp.Ed. 984 Educational Programs for Handicapped Children	3 q.h.
Ed.Adm. 1039 Planned Field Experience, School & Community Relations	3 q.h.

Education of Exceptional Pupils*

Sp.Ed. 977 Supervision, Administration, and Program Development in Gifted & Special Education	3 q.h.
Sp.Ed. 981 Seminar in Special Education	3 q.h.
Sp.Ed. 982 Educational Assessment in Gifted and Special Education	4 q.h.
Sp.Ed. 983 Major Concepts in Special Education	3 q.h.
Sp.Ed. 984 Educational Programs for Handicapped Children	3 q.h.
Sp.Ed. 985 Resource Rooms & Supplemental Services for Special Sp.Ed.	3 q.h.
Sp.Ed. 986 Severe Behavior Handicaps: Assessment & Classroom Mgmt.	3 q.h.
Ed.Adm. 1022 Field Experience II (check prerequisites)	3 q.h.

*Candidate must be certified in an area of Special Education with 20 quarter hours selected from the Special Education courses listed above. Check prerequisites in the "Courses" section of this catalog.

Assistant Superintendent

Completion of Educational Administration degree, principal's certification, 33-40 quarter hours listed below, and any other Ohio State Department of Education requirements.

Ed.Adm. 947 Basic Principles of Elementary School Administration	or	
Ed.Adm. 948 Basic Principles of Secondary School Administration		3 q.h.
Ed.Adm. 908 Computer Applications for Administrators		3 q.h.
Ed.Adm. 988 Evaluation of Educational Institutions		3 q.h.
Econ. 946 Theory of State and Local Finance	or	
Ed.Adm. 952 School Finance		3 q.h.
Ed.Adm. 950 School Business Management		3 q.h.
Ed.Adm. 956 Educational Facilities		3 q.h.
EMCE 916 The Elementary School Curriculum	or	
Sec.Ed. 931 The Secondary School Curriculum		3 q.h.
Sec.Ed. 934 Diagnostic-Prescriptive Education	or	
EMCE 816 Diagnosis & Remediation of Elementary School Math	and	3 q.h.
EMCE 881 Corrective Techniques in Reading		4 q.h.
Ed.Adm. 1022 Field Experience II*		3 q.h.

Any two of the following:

Found. 905 A History of American Education	3 q.h.
Found. 901 Philosophical Foundations of Educational Theory & Practice	3 q.h.
Found. 902 Socio-Cultural Aspects of Education	3 q.h.

*This field experience requires the completion of this sequence of courses and the permission of the Chair of the Department of Educational Administration. Check prerequisites in the Courses section of this catalog.

Superintendent

Must hold an administrative certificate issued upon the recommendation of YSU or the equivalent thereof as evaluated by the Department of Educational Administration at YSU. Completion of a minimum total of 90 quarter hours (including all appropriate prerequisite courses as determined by the Department of Educational Administration), the following course sequence, and any other Ohio State Department of Education requirements.

Econ. 946 Theory of State and Local Finance	or	
Ed.Adm. 952 School Finance		3 q.h.
Ed.Adm. 956 Educational Facilities		3 q.h.
Ed.Adm. 1023 Field Experience III*		3 q.h.
Ed.Adm. 1024 Seminar: Collective Bargaining		3 q.h.
Ed.Adm. 1035 The Superintendency		3 q.h.
Ed.Adm. 1041 Field Experiences in School Plant Planning		3 q.h.

*This field experience requires the completion of this sequence of courses and the permission of the Chair of the Department of Educational Administration. Check prerequisites in the "Courses" section of this catalog.

Any two of the following three Foundations courses:

Found. 905 A History of American Education	3 q.h.
Found. 901 Philosophical Foundations of Educational Theory and Practice	3 q.h.
Found. 902 Socio-Cultural Aspects of Education	3 q.h.

Master of Science in Education**Master Teacher Elementary**

Program Director: Philip Ginnetti
1060 Fedor Hall
(330) 742-3251

Program Description

The Master Teacher Elementary program provides advanced professional preparation for teachers, administrators, and school guidance counselors in the northeastern Ohio and western Pennsylvania areas served by the University. The Department of Early and Middle Childhood Education houses four program options for post-baccalaureate study toward the M.S. in Ed.: curriculum, reading specialist, early childhood specialist, and middle grades.

The program focuses on the development of professionally committed practitioners so that they can reflect on and apply the current state of knowledge and best practice in their area of specialization. The program options provide the skills, knowledge, and competencies necessary for these individuals to function effectively. Central to the development of such professionals are the refinement and conveyance of competencies in the areas of scholarship, instruction, leadership, management, and interpersonal relations.

The Master Teacher Elementary program is administered by the Department of Early and Middle Childhood Education in the College of Education.

Faculty Research Interests

Dora L. Bailey, Ph.D., Associate Professor

Learning to read and reading to learn; mentorship; nontraditional students

Janet L. Beary, Ph.D., Professor

National Science Teachers Association guidelines; process-inquiry skills in learning; verbal communication; environmental/outdoor education; integrated curriculum; alternative assessment; middle childhood education

Denise A. Da Ros, Ph.D., Assistant Professor

Social and emotional development; emergent curriculum; child care issues

Mary Lou T. DiPillo, Ph.D., Assistant Professor

Children's literature; writings in mathematics; incorporating nonfiction trade books in content areas; emergent literacy

Joyce A. Feist-Willis, Ph.D., Associate Professor

Integrating instruction in teacher education programs; integrating the writing process and literature-based reading instruction into early and middle childhood classrooms; integrating content area reading strategies into instruction in all levels of schools (early, middle, and high)

Philip E. Ginnetti, Ph.D., Associate Professor and Chair

Reading comprehension; literature-based reading instruction; whole language strategies; reading-writing connections; the writing process; writing across the curriculum (elementary and middle school); integrated instruction

Hong Yong (Hy) Kim, Ed.D., Professor

NCTM standards; cooperative learning; hands-on math teaching

Nancie M. Shillington, Ph.D., Associate Professor

Middle-grade education; instructional team organization; integrated curriculum; advisory programs; classroom management; supervision and professional development; personality type and learning style

Gloria D. Tribble, Ph.D., Professor

Assessment in reading and writing; multicultural literacy

Admission Requirements

To be admitted to the M.S. in Education degree program in the Department of Early and Middle Childhood Education, the applicant must have earned a bachelor's degree from an accredited college or university and be qualified for a teaching certificate (Ohio, provisional or equivalent) if enrolled in a program leading to additional certification, validation, or endorsement.

In addition, the applicant must also have:

For Regular Admission:

1. An unrecalculated undergraduate cumulative grade-point average of at least 2.5 on a 4.0 scale or an unrecalculated graduate cumulative grade-point average of 3.0.
2. Adequate preparation for the graduate program in which the student wishes to enroll, as evidenced by three letters of professional reference.

82 YOUNGSTOWN STATE UNIVERSITY

For Provisional or Nondegree Admission:

1. An unrecalculated undergraduate cumulative grade-point average of at least 2.5 on a 4.0 scale or an unrecalculated graduate cumulative grade-point average of 3.0.

If the applicant has an undergraduate grade-point average of less than 2.5 or a graduate grade-point average of less than 3.0, then an MAT score of 39 or a GRE score of 900 is required. If the applicant's grade-point average is below the listed requirement and the MAT or GRE score is below the cutoff score, admission is refused.

2. Adequate preparation for the graduate program in which the student wishes to enroll, as evidenced by three letters of professional reference.

Degree Requirements

A minimum of 48 quarter hours is required for the degree. In general, the Master Teacher Elementary program requires a core of foundation courses, required courses in the major discipline, elective courses in the program being undertaken, and additional coursework outside the College of Education. Additionally, students must pass a comprehensive examination.

Option A: Curriculum

1) Required courses for specialization (21 quarter hours)

EMCE 909 Supervision of Student Teachers, Elementary 3 q.h.

EMCE 916 The Elementary School Curriculum 3 q.h.

Will serve as prerequisites to the following sequence of courses:

EMCE 917 Survey of Reading and Language Arts Program 3 q.h.

EMCE 918 Elementary School Mathematics Programs 3 q.h.

EMCE 919 Social Studies Programs in Elementary School 3 q.h.

EMCE 920 Elementary School Science Programs 3 q.h.

EMCE 921 Issues, Problems, and Developments in Elementary Education 3 q.h.

2) Foundations of Education (12 quarter hours) (Take at any point in the program.)

Found. 872 Statistical Methods in Education 3 q.h.

Found. 901 Philosophical Foundations of Educational Theory & Practice 3 q.h.

Found. 902 Socio-Cultural Aspects of Education 3 q.h.

Found. 904 Education Research (prereq.: Found. 872) 3 q.h.

Found. 905 History of American Education 3 q.h.

3) Electives in elementary education may be chosen from any of the graduate elementary education course offerings.

4) 6-18 quarter hours of courses from humanities, sciences, and other disciplines, including Psych. 903.

5) All master teacher curriculum students must take a comprehensive examination in their major area of study.

Option B: Reading Specialist

1) Required courses for specialization (23-24 quarter hours)

The following courses should be taken in sequence:

EMCE 917 Survey of Reading and Language Arts Programs 3 q.h.

EMCE 924 Reading and Language Learning: Middle Years or

EMCE 925 Reading and Language Learning: Adolescent Years 4 q.h.

EMCE 926 Reading and Language Arts Assessment I 4 q.h.

EMCE 927 Reading and Language Arts Assessment II	4 q.h.
EMCE 928 Case Study in Reading and Language Arts	4 q.h.
EMCE 929 The Reading and Language Arts Professional	4 q.h.

2) Cognate area (10-11 quarter hours)

Psych. 903 Psychology of Learning	3 q.h.
Psych. 907 Psychology of Adjustment (3)	or
Psych. 802 Personality (4)	3-4 q.h.
Engl. 918 Studies in Children's Literature	4 q.h.

3) Foundations of Education (12 quarter hours) (Take at any point in the program.)

Found. 872 Statistical Methods in Education	3 q.h.
Found. 901 Philosophical Foundations of Educational Theory & Practice	3 q.h.
Found. 902 Socio-Cultural Aspects of Education	3 q.h.
Found. 904 Education Research (prereq.: Found. 872)	3 q.h.
Found. 905 History of American Education	3 q.h.

4) Electives: 1-3 quarter hours.

5) All master teacher reading students will be required to take a comprehensive examination in reading after the completion of EMCE 929.

Option C: Early Childhood Specialist

1) Required courses for specialization (23 quarter hours)

EMCE 911 Early Childhood Programs and Theorists	3 q.h.
EMCE 912 Play and Creative Expression in Early Childhood Education	3 q.h.
EMCE 913 Curriculum, Theories, and Methods in Preschool Education	or
EMCE 914 Curriculum, Theories, and Methods in Early Childhood Education, Kindergarten-Grade 3	3 q.h.
EMCE 915 Application of Selected Theoretical Principles for the Developing Teacher	3 q.h.
EMCE 923 Reading and Language Learning: Early Years	4 q.h.
EMCE 1010 Seminar in Early Childhood Education	3 q.h.
EMCE 1011 Special Project in Early Childhood Education	4 q.h.

2) Cognate area (6 quarter hours)

Psych. 906 Human Growth and Development	3 q.h.
Sp.Ed. 862 Principles of Interaction with Special Needs Children	3 q.h.

3) Foundations of Education (12 quarter hours) (Take at any point in the program.)

Found. 872 Statistical Methods in Education	3 q.h.
Found. 901 Philosophical Foundations of Educational Theory & Practice	3 q.h.
Found. 902 Socio-Cultural Aspects of Education	3 q.h.
Found. 904 Education Research (prereq.: Found. 872)	3 q.h.
Found. 905 History of American Education	3 q.h.

4) Electives (7 quarter hours)

Suggested only; others outside College of Education acceptable.	
Engl. 918 Studies in Children's Literature	4 q.h.
Socio. 902 The Child and Society	3 q.h.
EMCE 916 The Elementary School Curriculum	3 q.h.

5) All master teacher early childhood students must take a comprehensive examination over required courses for specialization.

Option D: Middle Grades

1) Required courses for specialization (16 quarter hours)

EMCE 938 Early Adolescence Characteristics and Educational Program Needs		4 q.h.
EMCE 939 Organizational Components of Middle Level Schools either 940 and 941		3 q.h.
EMCE 940 Introduction to Middle Grades Math and Science Curriculum and Instruction	and	2 q.h.
EMCE 941 Methods of Teaching Math and Science in Middle Grades or 942 and 943		4 q.h.
EMCE 942 Pedagogy Appropriate for Early Adolescent Learners	and	3 q.h.
EMCE 943 Action Research: Pedagogy Appropriate for Early Adolescent Learners		3 q.h.
EMCE 1043 Field Experience: Service Learning and School-Community Collaboration		3 q.h.

2) Suggested cognate area (9 quarter hours)

Psych. 906 Human Growth and Development		3 q.h.
Couns. 825 Group Processes in the School		3 q.h.
Sec.Ed. 922 Principles of Instruction	or	
Sec.Ed. 1036 Fundamentals of Curriculum Development		3 q.h.

3) Foundations of Education (9 quarter hours)

Found. 935 Philosophical Foundations of Middle Grades Education		3 q.h.
Found. 937 Sociological Foundations of Middle Grades Education		3 q.h.
Found. 904 Educational Research (prereq.: Found. 872)		3 q.h.

4) Electives (14 q.h.)

5) All master teacher middle grades students must take a comprehensive examination over required courses for specialization.

Master of Science in Education**Master Teacher Secondary**

Program Director: Randy Hoover
1018 Fedor Hall
(330) 742-3261

Program Description

The Department of Secondary Education houses two Master of Science in Education degree options: Option A with a concentration in subject area study and Option B, which focuses on curriculum and instruction. The subject-area concentration offers teachers an opportunity to engage in 24 quarter hours of elective study within their teaching field with additional hours of study in curriculum, instruction, and foundations of education. The curriculum and instruction concentration is built around 18 quarter hours of core courses ranging from foundations and research, through curriculum development and instruction, to school law for classroom teachers and interpersonal communication for educators. This latter program is a flexible vehicle for professional development as well as sound preparation for doctoral work and work outside schooling. The department also offers planned coursework for acquisition of the State of Ohio's Supervisor's Certificate and promotes a variety of professional development courses, workshops, and inservice programs.

The Department of Secondary Education's mission is to empower teachers for professional practice. The mission commits the faculty to a theme of critical reflectivity where students are engaged in the pedagogies of radical critique in comparison and contrast to traditional practices of teaching and schooling. Faculty members are committed to educating students in values and ideas that motivate educators for the transformation of students and educational institutions.

Faculty Research Interests

Marianne Dove, Ph.D., Assistant Professor and Chair

Literacy methodology, Jungian and Gestalt theory as it relates to the fields of teacher development and organizational development

Patricia M. Hauschildt, Ph.D., Assistant Professor

Collaborative research and analysis; culturally relevant pedagogical practices; narrative methodologies in teacher preparation

Randy L. Hoover, Ph.D., Professor

Critical reflectivity; postmodern/poststructural analysis of teaching and schooling; democratic schooling

Donna J. McNierney, Ed.D., Associate Professor

Gender issues in classroom instruction; instructional technology; attitudes/perceptions of female engineers as related to experiences in math and science classes

Admission Requirements

In addition to the minimum School of Graduate Studies admission requirements, this program requires students to have :

- 1) A valid teaching certificate. However, those individuals who have earned baccalaureate degrees but do not possess certificates will be admitted on a case-by-case basis after review of their credentials and needs relative to specific career paths requiring expertise in curriculum and instruction in nonschool settings.
- 2) A satisfactory score on the aptitude portion of the Graduate Record Examination, or on the Miller Analogies Test if applicant's unrecalculated grade-point average is below 2.5.
- 3) Three professional recommendations.

Degree Requirements

A minimum of 48 quarter hours is required for the degree. In general, the Master Teacher Secondary program requires a core of foundation courses, a curriculum and instruction sequence, and elective courses in the program being undertaken. Additionally, students must pass a comprehensive examination.

Option A: Subject Area Concentration

- | | |
|--|--------|
| 1) Foundations of Education (12 quarter hours) | |
| Found. 901 Philosophical Foundations of Educ. Theory and Practice* | 3 q.h. |
| Found. 904 Educational Research* | 3 q.h. |
| Found. 889 Small Computer Applications in the Classroom | 3 q.h. |
| Found. 900 Seminar in History of Children and Youth | 3 q.h. |
| Found. 902 Socio-Cultural Aspects of Education | 3 q.h. |
| Found. 905 A History of American Education | 3 q.h. |

2) Curriculum and Instruction (9 quarter hours)	
Psych. 903 Psychology of Learning*	3 q.h.
Sec.Ed. 922 Principles of Instruction*	3 q.h.
Sec.Ed. 1036 Fundamentals of Curriculum Development*	3 q.h.

3) Twenty-four quarter hours in appropriate teaching areas (art, biology, business education, chemistry, economics, English, French, German, health and physical education, history, home economics, Italian, mathematics, music, physics, political science, Spanish, speech and dramatics, and social studies). In addition to consulting with an education advisor, the student will consult with a faculty member in the teaching area to determine the sequence of teaching area courses, which the student will place on file in the Department of Secondary Education.

4) Electives in Education or Teaching Area (3 quarter hours)	
Sec.Ed. 931 The Secondary School Curriculum	3 q.h.
Sec.Ed. 934 Diagnostic-Prescriptive Education	3 q.h.
Sec.Ed. 946 The Supervision of Instruction	3 q.h.
Sec.Ed. 959 Law for the Classroom Teacher	3 q.h.

5) Sec.Ed. 999 Thesis (6-12 quarter hours) or Comprehensive Examination covering Found. 901, 904, Sec.Ed. 922 and 1036. Students who choose to take the comprehensive examination are encouraged to complete it early in the program.

All seminars and workshops must be approved in advance by the program advisor.

Option B: Curriculum and Improvement of Instruction

1) Foundations of Education (12 quarter hours)	
Found. 889 Small Computer Applications in the Classroom	3 q.h.
Found. 901 Philosophical Foundations of Educ. Theory and Practice*	3 q.h.
Found. 904 Educational Research*	3 q.h.
Found. 900 Seminar in History of the Education of Children and Youth	3 q.h.
Found. 902 Socio-Cultural Aspects of Education	3 q.h.
Found. 905 History of American Education	3 q.h.
Found. 1000, 1002, 1003, 1004	
Seminar in Foundations of Education	3 q.h.

2) Curriculum and Instruction (9 quarter hours)	
Sec.Ed. 922 Principles of Instruction*	3 q.h.
Sec.Ed. 1036 Fundamentals of Curriculum Development*	3 q.h.
EMCE 883 Secondary School Reading	3 q.h.
Sec.Ed. 931 The Secondary School Curriculum	3 q.h.
Sec.Ed. 934 Diagnostic-Prescriptive Education	3 q.h.

3) Related Areas (12 quarter hours)	
Psych. 903 Psychology of Learning*	3 q.h.
Sec.Ed. 959 Law for the Classroom Teacher*	3 q.h.
Sec.Ed. 946 Supervision of Instruction	3 q.h.
Sec.Ed. 951 Interpersonal Communications for Administrators	3 q.h.
Ed.Adm. 954 School Community Relations	3 q.h.

4) Special Education (3 quarter hours)	
Sp.Ed. 802 Education of Exceptional Children	4 q.h.
Sp.Ed. 983 Major Concepts in Special Education	3 q.h.

5) School Guidance (3 quarter hours)		
Couns. 825 Group Processes in the School		3 q.h.
Couns. 961 Introduction to Pupil Personnel Services		3 q.h.
Couns. 1006 Guidance in the Classroom		3 q.h.
Couns. 1017 Group Procedures in Counseling		3 q.h.
6) Electives in Teaching Area or Process (9 quarter hours)		
Sec.Ed. 999 Thesis	or	6-12 q.h.
7) Sec.Ed. 999 Thesis		
Comprehensive examination covering Found. 901, 904, Sec.Ed. 922 and 1036.	or	6-12 q.h.
Students who choose to take the comprehensive examination are encouraged to complete it early in their program.		

All seminars and workshops must be approved in advance by the program advisor.

* required course

Certification Requirements for Supervisor

Applicants for a supervision certificate must have a master's degree, three years of teaching experience under a standard certificate, and the courses listed below.

Psych. 903 Psychology of Learning		3 q.h.
Psych. 906 Human Growth and Development		3 q.h.
Found. 904 Educational Research		3 q.h.
Found. 901 Philosophical Found. of Educ. Theory and Practice	or	
Found. 902 Socio-Cultural Aspects of Education		3 q.h.
Found. 889 Small Computer Applications in the Classroom		3 q.h.
Sec.Ed. 922 Principles of Instruction		3 q.h.
Sec.Ed. 1036 Fundamentals of Curriculum Development		3 q.h.
Sec.Ed. 934 Diagnostic-Prescriptive Education		3 q.h.
Sec.Ed. 946 The Supervision of Instruction		3 q.h.
Sp.Ed. 978 Supervision, Administration & Program Development in Gifted and Special Education (3)	or	
Sp.Ed. 802 Education of Exceptional Children (4)	or	
Sp.Ed. 983 Major Concepts in Special Education (3)		3-4 q.h.
EMCE 916 The Elementary School Curriculum	or	
Sec.Ed. 931 The Secondary School Curriculum		3 q.h.
Sec.Ed. 1020 Field Experience in Supervision		3 q.h.
Sec.Ed. 951 Interpersonal Communications for Administrators		3 q.h.
Ed.Adm. 954 School Community Relations		3 q.h.
Sec.Ed. 959 Law for the Classroom Teacher	or	
Ed.Adm. 949 School Law		3 q.h.

Master of Science in Education Special Education

Program Director: Bernadette J. Angle
2025 Fedor Hall
(330) 742-3265

Program Description

The master's degree program in Special Education provides advanced cognitive and educational skills for those who are presently working, or expect to work, as clinical/developmental personnel serving individuals with exceptionalities, or as supervisors of special education programs.

Faculty Research Interests

Bernadette J. Angle, Ph.D., Professor

Inclusion of students with disabilities in the general education classroom; Ohio's service delivery models for serving disabled children; reading education with students with learning disabilities; strategies for assisting children with specific learning disabilities in the general education classrooms

Leonard L. Schaiper, Ed.D., Associate Professor

Developing self-esteem and social skills of severe behaviorally handicapped students; learning styles; SBH programming

Nancy Sweeney, Ph.D., Assistant Professor

Pediatric and early childhood school psychology issues; gifted education; assessment issues in special education

Admission Requirements

In addition to the minimum School of Graduate Studies admission requirements, the Special Education master's degree requires applicants to have:

- 1) Qualification for a teaching certificate in the area of special education or completion of all certification requirements except for student teaching. Applicants without a teaching certificate may be admitted on an individual basis provided that the certificate is received before the thirteenth quarter hour of graduate study.
- 2) A satisfactory score on the aptitude portion of the Graduate Record Examination, or on the Miller Analogies Test if unrecalculated undergraduate grade-point average is below 2.5.
- 3) Three professional recommendations.
- 4) An interview with the department chair.

Degree Requirements

General Option

A total of 48 quarter hours of coursework, as indicated next, is required for the Master of Science in Education degree in Special Education.

Candidates will be expected to pass a comprehensive examination on the special education core curriculum. Consult faculty advisor for details.

- 1) Foundations of Education: A minimum of 6 quarter hours, including:

Found. 904 Educational Research

3 q.h.

One additional graduate course in foundations of education, as approved by advisor.

3 q.h.

2) Core courses in Special Education (24 quarter hours)

Designed to provide students with advanced diagnostic/prescriptive skills applicable to a wide range of children's learning problems.

Sp.Ed. 982 Educational Assessment in Gifted and Special Education	4 q.h.
Sp.Ed. 977 Supervision, Administration and Program Development in Gifted and Special Education	3 q.h.
Sp.Ed. 980 Topical Seminar in Special Education	2 q.h.
Sp.Ed. 981 Seminar in Special Education	3 q.h.
Sp.Ed. 983 Major Concepts in Special Education	3 q.h.
Sp.Ed. 984 Educational Programs for Handicapped Children	3 q.h.
Sp.Ed. 985 Alternative Delivery Services for Children in Special Education	3 q.h.
Sp.Ed. 986 Severe Behavior Handicaps: Assess. and Classroom Mgmt.	3 q.h.

3) Cognate Areas: A minimum of six quarter hours must be selected within a cognate area by the student and advisor. These areas include:

Foundations of Education	Counseling Techniques
Elementary Curriculum	Human Relations
Secondary Curriculum	Remedial Reading
Physical Education	Early Childhood Education
Supervision and Administration	Vocation Guidance
Assessment/Prescriptive Skills	Gifted Education
Early Childhood Special Education	

4) Electives: A maximum of 12 quarter hours approved by the student's advisor; may constitute an extension of the first, or the selection of a second, cognate area.

Gifted and Talented Education Specialist Option

The Gifted/Talented option prepares students to teach gifted and talented children as well as to develop advanced cognitive and leadership skills appropriate to the specialization area. Candidates must meet the general education requirements for graduate programs in the College of Education. Those completing the program will be eligible for Ohio validation in Gifted Education.

Successful completion of a comprehensive examination in the area of specialization is required before graduation.

Only certain upper-division undergraduate courses may be taken for graduate credit. Those that are in this category are listed in the Courses section of this catalog. To earn graduate credit in an upper-division course, the student must have been admitted to the School of Graduate Studies at the time the course is taken. Courses taken for undergraduate credit cannot count toward fulfillment of a graduate degree. Consult your assigned advisor or the Chair of Special Education for acceptable substitutions.

1) Core Curriculum (28 quarter hours)

Sp.Ed. 802 Education of Exceptional Children	4 q.h.
Sp.Ed. 871 Characteristics and Needs of Gifted Children	4 q.h.
Sp.Ed. 878 Teaching Gifted and Talented Students	4 q.h.
Couns. 879 Consultation with Gifted/Talented Students and Their Families	4 q.h.
Sp.Ed. 977 Supervision, Administration & Program Development in Gifted & Special Education	3 q.h.
Sp.Ed. 980 Topical Seminar in Special Education	2 q.h.
Sp.Ed. 982 Educational Assessment in Gifted and Special Education	4 q.h.
Sp.Ed. 1040 Field Experience in Gifted & Talented Education	3 q.h.

90 YOUNGSTOWN STATE UNIVERSITY

2) Foundations (9 quarter hours)

Found. 872 Statistical Methods in Education	3 q.h.
Found. 901 Philosophical Foundations of Education	3 q.h.
Found. 902 Sociological Aspects of Contemporary Education	3 q.h.
Found. 904 Educational Research (prereq.: Found. 872)	3 q.h.
Found. 905 History of American Education	3 q.h.

3) Cognate Area (minimum of 9 quarter hours).

Intended to expose the student to an area of need or interest and thus strengthen that student's proficiency as a professional in gifted education. Please note that a cognate area is not intended to qualify a person for certification. In some instances, however, students may be able to expand the work in a cognate area so as to meet the requirements for certification (or validation of an existing certificate) in that area. Some examples of appropriate cognate areas follow. Others may be selected with advisor's approval.

4) Electives (2 quarter hours) with advisor's approval.

Total hours required: 48 quarter hours

Suggested Cognate Areas

CURRICULUM

EMCE 916 The Elementary School Curriculum	3 q.h.
Sec.Ed. 931 The Secondary School Curriculum	3 q.h.
EMCE 939 Designing Middle Grade Environment, Curric. and Instruction	3 q.h.
Sec.Ed. 1036 Fundamentals of Curriculum Development	3 q.h.
Sec.Ed. 922 Principles of Instruction	3 q.h.
Found. 889 Small Computer Applications in the Classroom	3 q.h.
Engl. 918 Children's Literature	4 q.h.

EARLY CHILDHOOD SPECIAL EDUCATION

Sp.Ed. 858 Intervention Concepts and Strategies in Early Childhood	3 q.h.
Sp.Ed. 991 Referral and Assessment in Early Childhood Special Educ.	4 q.h.
Sp.Ed. 992 Teaching Methods in Early Childhood Special Education	4 q.h.
EMCE 859 Pre-Kindergarten Teaching Methods and Materials	4 q.h.
Engl. 918 Children's Literature	4 q.h.

SUPERVISION

Sec.Ed. 922 Principles of Instruction	3 q.h.
Sec.Ed. 946 The Supervision of Instruction	3 q.h.
Sec.Ed. 1036 Fundamentals of Curriculum Development	3 q.h.
Sp.Ed. 977 Supervision, Administration & Program Development in Gifted and Special Education	3 q.h.
Ed.Adm. 949 School Law	3 q.h.
Ed.Adm. 954 School and Community Relations	3 q.h.

Validation in Gifted Education

Certified teachers completing the master teacher program option in gifted and talented education will have satisfied the course requirements for Ohio validation in the area. Those wishing to acquire the validation before completion of the master's program must enroll as graduate students and complete the following coursework. It is recommended that such students enroll in the Gifted/Talented master's program option so that hours earned may be credited toward the degree.

Sp.Ed. 802 Education of Exceptional Children	4 q.h.
Sp.Ed. 1030 Program Development in Gifted/Talented Education	4 q.h.
Sp.Ed. 878 Teaching Gifted and Talented Students	4 q.h.
Couns. 879 Consultation with Gifted/Talented Students and Their Families	4 q.h.
Found. 904 Educational Research	3 q.h.
Sp.Ed. 871 Nature and Needs of the Academically Gifted Child	4 q.h.
Sp.Ed. 982 Educational Assessment in Gifted and Special Education	4 q.h.
Sp.Ed. 1040 Field Experience in Gifted and Talented Education	3 q.h.
Total	30 q.h.

Early Childhood Special Education (ECSE) Option

The ECSE option prepares students to teach young handicapped children as well as to develop cognitive and leadership skills appropriate to the specialization area. In addition to the general admission requirements for graduate programs in the School of Education, candidates must complete special admission requirements as follows:

- 1) A standard Pre-Kindergarten teaching certificate, an Elementary Education certificate with pre-K validation, or a Home Economics certificate with pre-K validation, plus Psychology 755 and Special Education 802 (or Special Education 731); or
- 2) A Special Teaching Certificate for Education of the Handicapped plus Psychology 755 and Elementary Education 859.

Students with minor deficiencies may be admitted to provisional graduate status and should request a transfer to regular status as soon as the deficiencies are met.

The ECSE option requires 48 quarter hours of specified graduate study. At the time of entry into the program, students are required to demonstrate/supply evidence of experience with typically developing preschool children. When the student does not have such experience, an additional six quarter hours of field experience will be required. All field hours are in addition to the required coursework, including core, foundations, cognate, and elective hours.

Those completing the program will be eligible for an Ohio validation for Early Education of Handicapped Children.

Successful completion of a comprehensive examination in the area of specialization is required before graduation.

1) Core Curriculum (23 quarter hours)

Sp.Ed. 858 Intervention Concepts and Strategies in ECSE	3 q.h.
Sp.Ed. 862 Principles of Interaction with Special Needs Students	3 q.h.
Sp.Ed. 991 Referral and Assessment in ECSE	4 q.h.
Sp.Ed. 992 Teaching Methods in ECSE	4 q.h.
Sp.Ed. 993 Health and Related Issues in Early Childhood	3 q.h.
Sp.Ed. 994 Field Experiences in ECSE (only six quarter hours will apply to the master's degree)	6-12 q.h.

2) Foundations (9 quarter hours)

Found. 872 Statistical Methods in Education	3 q.h.
Found. 901 Philosophical Foundations of Education	3 q.h.
Found. 902 Sociological Aspects of Contemporary Education	3 q.h.
Found. 904 Educational Research	3 q.h.

92 YOUNGSTOWN STATE UNIVERSITY

Found. 905 History of American Education	3 q.h.
Psych. 903 Psychology of Learning	3 q.h.
Psych. 906 Human Growth and Development	3 q.h.

3) Cognate Areas (minimum of 9 quarter hours) Intended to expose the student to one or two areas of need or interest and thus strengthen that student's proficiency as a professional in Early Childhood Special Education. Please note that a cognate area is not intended to qualify a person for certification. In some instances, however, students may be able to expand the work in a cognate area to meet the requirements for certification (or validation of an existing certificate) in that area. Some examples of appropriate cognate areas are listed below. Others may be selected with advisor's approval.

4) Electives (7 quarter hours) selected with advisor's approval.

Total hours required: 48 q.h.

Suggested Cognate Areas

SUPERVISION

Sec.Ed. 946 The Supervision of Instruction	3 q.h.
Sec.Ed. 922 Principles of Instruction	3 q.h.
Sp.Ed. 977 Supervision, Administration & Program Development in Gifted and Special Education	3 q.h.
Ed.Adm. 954 School and Community Relations	3 q.h.
Ed.Adm. 949 School Law	3 q.h.

EARLY CHILDHOOD

EMCE 911 Early Childhood Programs	3 q.h.
EMCE 912 Curriculum and Methods in Early Childhood Education	4 q.h.
EMCE 913 Preschool Education	3 q.h.
EMCE 914 Practicum in Early Childhood Education	3 q.h.

GIFTED EDUCATION

Sp.Ed. 871 Characteristics and Needs of Gifted Children	4 q.h.
Sp.Ed. 878 Teaching Gifted and Talented Students	4 q.h.
Sp.Ed. 982 Educational Assessment in Gifted and Special Education	4 q.h.
Couns. 879 Counseling Gifted/Talented Student and Their Families	4 q.h.
Sp.Ed. 977 Supervision, Administration & Program Development in Gifted and Special Education	3 q.h.
Sp.Ed. 1040 Field Experience in Gifted/Talented Education	3 q.h.

Validation in Early Childhood Special Education

Validation in Early Childhood Special Education (ECSE) may be added:

- 1) to an Ohio standard Pre-Kindergarten certificate, an Elementary Education certificate with pre-K validation, or a Home Economics Child Study certificate with pre-K validation, or
- 2) to an Ohio Special Teaching Certificate for Education of the Handicapped.

Those completing the master teacher program option in ECSE will have satisfied the course requirements for Ohio validation in the area. Qualified candidates wishing to acquire the validation before completion of the master's program must enroll as graduate students and complete the following coursework. It is recommended that such students enroll in the ECSE master's program option so that hours earned may be credited toward the degree.

Psych. 755 Developmental Psychology I (Child)		4 q.h.
EMCE 859	or	
H.Ec. 859 Kindergarten Teaching Methods and Materials		4 q.h.
Sp.Ed. 802 Education of Exceptional Children	or	
Sp.Ed. 731 Education of Young Handicapped Children		4 q.h.
Sp.Ed. 858 Intervention Concepts and Strategies in ECSE		3 q.h.
Sp.Ed. 862 Principles of Interaction with Special Needs Students		3 q.h.
Sp.Ed. 991 Referral and Assessment in ECSE		4 q.h.
Sp.Ed. 992 Teaching Methods in ECSE		4 q.h.
Sp.Ed. 993 Health and Related Issues in ECSE		3 q.h.
Sp.Ed. 994 Field Experience in ECSE		6-12 q.h.
(Minimum) Total:		31 q.h.

Master of Science in Engineering

Programs in civil, electrical, and mechanical engineering and materials science lead to the degree Master of Science in Engineering. An early placement program for the Ph.D. in engineering with the University of Akron is available. Check with the appropriate department for details. Students interested in the early placement program for the Ph.D. should follow the traditional option.

Admission Requirements

In addition to the requirements for admission to the School of Graduate Studies, applicants must show an unrecalculated grade-point average in undergraduate study of at least 2.75 (on a 4.0 scale) in the courses in the field of specialized study and must meet essentially all of the undergraduate prerequisites for the proposed field of graduate study. Applicants with lesser qualifications may be admitted on the basis of evaluation of their undergraduate record by the engineering department in which they wish to enroll. Applicants may be required to take certain courses, which are to be determined by their advisors, to make up deficiencies. The students will not be given credit toward the graduate degree for such courses.

Degree Requirements

The departments listed earlier offer two graduate program options: traditional and administrative.

Traditional Option

At least 45 quarter hours are required, divided in the following manner:

1) Mathematics (8 quarter hours), usually		
Math 910, 911 Advanced Engineering Mathematics I and II		4,4 q.h.
2) Interdepartmental Courses (12 quarter hours)		
Ci.Eng. 941 Structural Mechanics		4 q.h.
Ci.Eng. 947 Finite Element Analysis		4 q.h.
Ci.Eng. 966 Air Pollution Control		4 q.h.
El.Eng. 901 Control Systems I		4 q.h.
El.Eng. 931 Digital Systems Engineering I		4 q.h.
El.Eng. 951 Network Analysis		4 q.h.
In.Eng. 825 Advanced Engineering Economy		4 q.h.
In.Eng. 901 Optimization Techniques		4 q.h.
In.Eng. 902 Digital Simulation		4 q.h.

94 YOUNGSTOWN STATE UNIVERSITY

Mat.Eng. 901 Fundamentals of Materials Science	4 q.h.
Mat.Eng. 903 Structural Properties/Characteristics of Materials	4 q.h.
Mat.Eng. 904 Mechanical Properties/Characteristics of Materials	4 q.h.
Mech.Eng. 963 Experimental Stress Analysis	4 q.h.
Mech.Eng. 982 Advanced Engineering Analysis	4 q.h.
Mech.Eng. 986 Theory of Continuous Medium	4 q.h.

Each student is required to complete at least one out-of-department engineering course. Other out-of-department engineering courses may be substituted with the approval of the student's advisor or committee.

3) Departmental Courses (25 quarter hours)

Administrative Option

At least 48 quarter hours are required, divided in the following manner:

1) Out-of-Department Courses, (at least 20 quarter hours) from:

Acct. 900 Financial Accounting for Management	4 q.h.
Acct. 902* Management Accounting Systems	4 q.h.
Econ. 901 Basic Economic Analysis	5 q.h.
Econ. 926 Aggregative Economics for Business Decision Making	4 q.h.
In.Eng. 801 Linear Programming	4 q.h.
In.Eng. 825 Advanced Engineering Economy	4 q.h.
In.Eng. 850 Introduction to Operations Research	4 q.h.
In.Eng. 901 Optimization Techniques	4 q.h.
In.Eng. 902 Digital Simulation	4 q.h.
In.Eng. 903 Engineering Statistics	4 q.h.
Fin. 900 Foundations of Finance	3 q.h.
Fin. 921 Financial Management	4 q.h.
Mgmt. 900 The Foundation of Management	3 q.h.
Mgmt. 915* Research Methodology	4 q.h.
Mgmt. 916* Quantitative Analysis for Business Decisions	4 q.h.
Mgmt. 917* Management Information Systems	4 q.h.

*The 900 course in the appropriate department—Accounting, Management, Marketing or an equivalent course—is prerequisite.

Mgmt. 951* Theory of Organization	4 q.h.
Mgmt. 952* Management Theory and Thought	3 q.h.
Mgmt. 961* Organizational Behavior	4 q.h.
Mgmt. 966* Operations Management II	4 q.h.
Mktg. 900 Foundations of Marketing	3 q.h.
Mktg. 942* Marketing Administration	4 q.h.
Math 841 Mathematical Statistics II (prereq.: Math 743)	4 q.h.
Math 910 Advanced Engineering Mathematics I	4 q.h.
Math 911 Advanced Engineering Mathematics II	4 q.h.
Pub.Rel. 950 Theory and Practice of Public Relations	3 q.h.

*The 900 course in the appropriate department—Accounting, Management, Marketing or an equivalent course—is prerequisite.

2) Departmental Courses (at least 28 quarter hours). This is a nonthesis option.

One out-of-department engineering graduate course may be substituted with the approval of the student's advisor or committee.

Master of Science in Engineering

Civil and Environmental Engineering

Program Director: Scott C. Martin
267 Engineering Science Building
(330) 742-1741

Program Description

Civil engineers apply scientific and engineering knowledge to protect and improve the public health and welfare by the intelligent shaping of our physical environment. Future civil engineers face exciting worldwide opportunities to participate in the development and management of an essential, safe, and cost-effective infrastructure and the management of environmental resources. Graduate study in Civil and Environmental Engineering provides students with the scientific and professional knowledge necessary for their field of interest and develops student abilities to formulate solutions to new and complex problems in the context of current environmental, social, and economic considerations. These objectives are accomplished by flexible courses of study designed to meet the needs of the program's graduate students. Graduates find fulfilling careers in private industry, private consulting practices, and governmental service and are prepared for doctoral-level work leading to research/teaching careers in colleges and universities throughout the world. The program includes traditional and administrative options and offers opportunities for advanced studies in two general areas: structural/soil mechanics and environmental/water resources engineering.

Facilities for advanced study and research are located in the Engineering Science Building, which houses a variety of well-equipped laboratories. A well-equipped machine shop and an electronic maintenance shop complement the laboratory facilities. Also included are the Structures and Materials Laboratory, Hydraulic/Fluid Mechanics Laboratory, Environmental Engineering Laboratory, Geotechnical Engineering Laboratory, and a college Computational Lab, which provides numerous IBM-compatible 486 PCs. Additional computer resources are made available to the department through the services of the University Computer Center. A cooperative Ph.D. program with the University of Akron is available, thereby allowing faculty and students to participate in doctoral research activities.

Faculty Research Interests

Javed Alam, Ph.D., Professor

Structural mechanics: finite element analysis, fracture mechanics, numerical methods in structural mechanics; computer applications in civil engineering: neural networks, expert systems, GIS and computer visualization

Jack D. Bakos, Jr., Ph.D., Professor and Chair

Structural mechanics; reinforced concrete design; steel design

John N. Cernica, Ph.D., Professor

Deep foundations: design techniques for drilled piers/cast-in-place

Laurie S. Garton, Ph.D., Assistant Professor

Physical and chemical processes in aquatic systems

Shakir Husain, Ph.D., Associate Professor

Pavement evaluation design; construction and management; highway material; traffic flow analysis and management

Irfan A. Khan, Ph.D., Professor

Surface and ground water hydrology; contaminant transport in porous media; irrigation management

Scott C. Martin, Ph.D., Professor

Water quality modeling; wetlands; aquatic chemistry; limnology; hazardous waste treatment

Degree Requirements

At the time of initial enrollment, the student will be required to select an option (thesis, nonthesis, or administrative) and specialization (structural, environmental, or water resources), and, in cooperation with an assigned department faculty member, will establish a coursework plan, including alternate course selections.

A minimum of 16 quarter hours of departmental courses plus a thesis (nine quarter hours) is required of all students participating in the 45-quarter-hour traditional option. Upon completing the thesis, the student must orally present and successfully defend the thesis. The thesis requirement may be waived by the department Chair, in which event the student will be required to take a total of 52 quarter hours of coursework with a minimum of 32 quarter hours of civil engineering courses. When 40 quarter hours of coursework have been completed, the nonthesis student must pass an oral and/or written examination. The administrative option is geared for those candidates who have entered or who are about to enter the engineering administration field and, as such, is usually open only to those who have accumulated at least four years of professional experience or obtained P.E. status.

For purposes of fulfilling the 12-quarter-hour interdepartmental course requirement in the traditional thesis option, the environmental/water resources emphasis may include Civil Engineering 978 Water Resources Planning.

Thesis students who have registered for all required thesis hours and have completed all course requirements but have not finished the thesis are required to maintain current student status if they expect to receive or utilize any University service (e.g., parking, computer, library, advisor assistance, thesis defense, committee action, etc.). This can normally be accomplished by registering for at least one hour of Civil Engineering 992.

Master of Science in Engineering Electrical Engineering

Program Director: Salvatore R. Pansino
276 Engineering Science Building
(330) 742-3012

Program Description

The Department of Electrical Engineering provides opportunities for post-baccalaureate study toward the M.S. in Engineering degree. These opportunities serve the practicing engineer as well as the student who wants to pursue advanced graduate study and research. Thesis, nonthesis, and administrative options are available. Each option requires a minimum of 48 quarter hours.

Areas of study include control systems, digital systems, microprocessor applications, communications, computer-aided design, power systems, and sensors. Study in these or other areas will depend upon faculty availability. The student is encouraged to interact with the faculty and explore these opportunities.

Faculty Research Interests

Robert H. Foulkes, Jr., Ph.D., Professor
Control systems; signal analysis; system design

Jalal Jalali, Ph.D., Associate Professor
Power systems; electromagnetic fields; reliability

Philip C. Munro, Ph.D., Professor
Computer-aided design; device and circuit modeling; solid state devices

Salvatore R. Pansino, Ph.D., Professor
Sensors; data acquisition; communications

Duane F. Rost, Ph.D., Professor
Electromagnetic energy conversion; fiber optics; space experiments (NASA)

Degree Requirements

The student's program committee is normally assigned during the student's first quarter of enrollment. In conjunction with the student, this committee will outline a course of study and determine the actual degree requirements. More details may be obtained from the department and elsewhere in this catalog.

Master of Science in Engineering Materials Science

Program Director: Robert A. McCoy
216 Engineering Science Building
(330) 742-1735

Program Description

The Materials Science program offers a broad spectrum treatment of basic concepts, properties, and processing of metals, ceramics, polymer, and composite materials. Emphasis in the curriculum is placed on mechanical properties, failure analysis, and processing of these materials. While the primary goal of the program is to provide graduate-level studies for students interested in industrial careers, the curriculum also prepares students for advanced study at the doctoral level.

Faculty Research Interests

Robert A. McCoy, D.E., Professor
Failure analysis of materials

Admission Requirements: Admissions to this option have been temporarily suspended.

For admission to the Materials Science program, the candidate must have a bachelor's degree in engineering or in a natural science (physics, chemistry, or mathematics). Any candidate not holding an undergraduate degree in materials/metallurgy/ceramics may be required to take Materials Engineering 606 and will be required to take Materials Science 901 and 901L. None of these courses will apply to credit toward the graduate degree.

Degree Requirements

A thesis, a nonthesis, and an administrative option are available in the program. Requirements for the administrative option are described elsewhere in this catalog.

For the thesis and nonthesis options, the student must complete a minimum of 48 quarter hours, 12 quarter hours of which must be in mathematics and other engineering disciplines. Both of these options require Materials Science 903, 904, 915, 924, 925, and 980. In addition to these requirements, the nonthesis option also requires Materials Science 976.

For details of the graduation requirements (including substitution for required courses), course scheduling, thesis requirements, and other program regulations, contact the Director of Materials Engineering.

Master of Science in Engineering Mechanical Engineering

Program Director: Hyun W. Kim
238 Engineering Science Building
(330) 742-1731

Program Description

The Department of Mechanical Engineering offers the M.S. in Engineering degree with two options: the traditional option, which seeks to deepen the student's theoretical knowledge and strengthen his/her ability to solve more advanced engineering problems; and the administrative option, which is structured for engineers who wish to include in their program preparation for managerial positions in engineering, industry, construction, and governmental organizations. The program seeks to strengthen the student's knowledge in a specialty area and includes suitable coursework in human relations, financial, economic, quantitative, technical, and legal subjects related to management. The department has excellent computer and laboratory facilities that provide for the following design and research capabilities: solid modeling; FEA in stress analysis, structural dynamics, and heat transfer; experimental stress analysis, vibrations and noise control; and heat transfer and fluid dynamics.

Faculty Research Interests

Hyun W. Kim, Ph.D., Professor
Computational and experimental heat transfer; alternative energy sources; analysis and design

Ganesh Kudav, Ph.D., Assistant Professor
Computational and experimental heat transfer and fluid dynamics; neural networks for engineering applications; energy and exergy conversion and analysis; dynamic systems analysis

Jeffrey Ray, Ph.D., Assistant Professor
Machine controls and mechanical design; dynamic systems analysis; vibrations

Daniel H. Suchora, Ph.D., Professor
Kinematics and dynamics of machines; finite element analysis for stress and dynamic analysis

Degree Requirements

Two general areas of specialization in coursework and research are offered: mechanics of rigid and deformable solids; and heat and fluid flow.

Students pursuing the traditional option will be assigned to a graduate committee after completing a minimum of 12 quarter hours, including Mathematics 910 and Mechanical Engineering 982. The committee, in consultation with the student, will plan the remaining coursework and determine if the program is to include a thesis. A maximum of nine quarter hours of credit toward the degree may be obtained for Thesis and Graduate Projects. If a thesis is undertaken, the student will be required to defend it in an oral examination. If a thesis is not undertaken, the student will be required to take at least three quarter hours of coursework beyond the minimum of 45 required for the degree. At the discretion of the graduate committee, a student may be required to take a qualifying examination as a degree requirement.

In the traditional option, Mathematics 910, Mathematics 911, and Mechanical Engineering 982 are required of all mechanical engineering students, along with the completion of 16 quarter hours of 900-level mechanical engineering courses (excluding Thesis and Graduate Projects).

The requirements of the administrative option were outlined previously. Mechanical engineering students selecting this option are required to complete 16 quarter hours of 900-level mechanical engineering courses including Mechanical Engineering 982, but excluding Graduate Projects.

Graduate Certificates

Bioethics

Department of Philosophy and Religious Studies

Certificate Description

This three-course sequence (12 quarter hours total) is designed to meet the needs of working professionals in health care and related fields and others who wish to pursue postgraduate study in bioethics. The sequence will be of particular value to those serving or preparing to serve on institutional ethics committees in hospitals, home health care services, nursing homes, and elsewhere, as well as others (people in local government, insurance, and the media, for example) who wish to explore major questions and recent developments in bioethics.

Certificate Requirements

To receive a certificate in bioethics, students must complete 12 quarter hours of courses typically Philosophy 925 Ethics and Medicine, 927 Ethics in the Health Care Professions, and 929 Bioethics and Public Policy with a grade-point average in those courses of 3.0 or above.

For admission to the Graduate Sequence in Bioethics, students must meet the requirements for admission to the School of Graduate Studies at YSU and have other preparation or experience judged satisfactory by the Department of Philosophy and Religious Studies. Preparation or experience that may qualify as satisfactory includes, but is not limited to, training or experience in the health care professions.

**Professional Writing and Editing
Department of English**

Certificate Description

This five-course sequence (20 quarter hours total) is designed to meet the needs of students preparing for careers as technical writers and editors; company news and information directors; or grant and proposal writers for schools, hospitals, nonprofit organizations, and fine and performing arts groups.

Certificate Requirements

The following courses are required for the Graduate Certificate in Professional Writing and Editing: 943 Technical Communication; 944 Document Design and Production; 953 Publications Issues and Management; 992 Professional Communication; and 993 Discourse Theory. One course is offered each quarter, allowing the student to finish in approximately five quarters.

(Although 898 Professional Communication Internship does not count toward the 20-hour requirement for a graduate certificate, students are strongly urged to take 898 or seek equivalent professional experience.)

Although students may take these courses without having an undergraduate degree in English, they must have completed a B.A. or B.S. degree and meet the requirements for admission to the School of Graduate Studies at YSU.

COURSES

Accounting and Finance

James A. Tackett, Chair of the Department
620 Williamson Hall
(330) 742-3084

Accounting

900. *Financial Accounting for Management.* A survey of the fundamental concept of financial accounting with an emphasis upon the interpretation and use of financial accounting information for administrative purposes. (Not applicable toward the M.B.A.) 4 q.h.

902. *Management Accounting Systems.* A study of the managerial aspects of accounting with an emphasis upon the preparation and interpretation of accounting reports of an organization for its internal users, such as its president and managers. Uses of relevant and timely accounting information in decision making, planning and control, capital budgeting, product costing and pricing, and transfer pricing are discussed in detail. Applications of quantitative techniques and behavioral aspects of accounting are also reviewed. (Not available for credit to M.B.A. students in the accounting concentration.) Prereq.: Acct. 900. 4 q.h.

903. *Fundamental Concepts of Taxation.* A study of the basic concepts of income taxation in the United States affecting individuals and businesses, including an examination of the consequences of property transactions, basis, gains and losses, nonrecognition of income provisions, depreciation recapture, and investment credit. (Not available for credit to M.B.A. students in the accounting concentration.) Prereq.: Acct. 900 or equivalent. 4 q.h.

905. *Business Tax Planning and Research I.* A study of the tax planning process and how it relates to employee and employer matters including, but not limited to, the alternative minimum tax, personal holding companies, unreasonable accumulations of earnings, depreciation recapture, retirement structuring, tax credits, taxation of international persons, and estate tax issues including both lifetime and testamentary transfers. Paper and electronic research media will be utilized along with various formats for presentation of results. Prereq.: Acct. 814 or 903. 4 q.h.

906. *Estate Planning.* A study of the tax implications involving estates. Emphasis on the importance of estate planning, the devices available for use in such planning, effective uses of lifetime gifts, trusts, life insurance, pension plans, profit sharing, and other fringe benefit plans. The effects of state inheritance tax and property laws upon estate planning will be emphasized. Prereq.: C or better in Acct. 707 or 813. 3 q.h.

908. *Auditing Theory and Practice.* A study of auditing standards and procedures, use of statistical and other quantitative techniques, and auditing electronic data processing installations. Other topics include practice before the Securities and Exchange Commission, special reporting problems, current developments in auditing, professional ethics and responsibilities, and extensions of the attest function. Prereq.: Acct. 808. 4 q.h.

909. *Management Information and Control Systems.* A study of the formalized set of interrelated methods, procedures, and equipment utilized in developing, processing, storing, and reporting business financial and statistical information. The major emphasis is on computerized systems, although some attention is also given to manual operations and/or subsystems. Prereq.: Acct. 601, 900, and 902. 4 q.h.

102 COURSES

912. *Advanced Management and Cost Accounting.* An examination of the managerial uses of accounting information for planning and control and an investigation of cost accounting theory and practice. Prereq.: Acct. 711. 4 q.h.

915. *Research Techniques.* Nature, methods, and techniques of research and the use of research by management; the scientific method in business, sampling theory, variable analysis, and research cases. 3 q.h.

930. *Accounting Theory.* A survey of the history and development of accounting conventions, concepts, and principles leading to an intensive study of contemporary thought relative to income determination and asset valuation. Prereq.: Acct. 703, 704, 705, or equivalent. 4 q.h.

940. *International Accounting.* A study of the international dimensions of accounting, including such topics as the pattern of accounting development found in other nations, differences in accounting between the United States and other countries, the promulgation of worldwide accounting standards, and the accounting problems associated with multinational corporation operations, including translation of foreign currency financial statements. Prereq.: Acct. 930 or 902. 3 q.h.

960. *Seminar in Accounting.* Specific topics selected by the staff from timely and controversial work published in the field. Prereq.: All core courses, plus at least nine hours (900-level) in the accounting concentration, or permission of instructor. 3 q.h.

975. *Business Tax Planning II.* This course continues the study of income tax laws concerning corporations generally, including Subchapter S corporations, corporate reorganizations, partnership taxation, and tax administration and practice. Prereq.: Acct. 905. 3 q.h.

980. *Governmental and Nonprofit Accounting.* A study of accounting systems for federal, state, and local governmental agencies and other not-for-profit organizations. (Not available for credit to students who have had Acct. 820.) Prereq.: Acct. 900 or equivalent. 3 q.h.

996. *Research Problems.* Special projects undertaken by M.B.A. students under the direction of faculty members of professorial rank. The exact number to be used will be determined by the nature of the project. Credit will be determined in each case in light of the nature and extent of the project. 1-6 q.h.

998. *Thesis.* 6 q.h.

Finance

839. *International Accounting and Finance.* (4 q.h.)

900. *Foundations of Finance.* A survey of the fundamental concepts of the business finance discipline. Emphasis is given to the role of finance in the firm; the capital budgeting decision tools, including present value analysis; and the mechanics of efficient short-term funds use. (Not applicable toward the M.B.A.) Prereq.: Acct. 900, Econ. 624, and Econ. 901. 3 q.h.

901. *Foundations of Finance and Financial Accounting.* A review of basic accounting systems and financial statements for service, merchandising, and manufacturing businesses, followed by a review of basic business finance focusing on the need for timely, useful information for decision making. Emphasis is placed on how financial information is generated, processed, and used in a business environment. (Available to E.M.B.A. students only; a pre-E.M.B.A. course.) 4 q.h.

921. *Financial Management.* A study of business finance through the use of case study analysis, including relevant articles and text material. Major topics deal with working capital management, net

present value — Internal Rate of Return, lease vs. buy, and the cost of capital. Case analysis is used to integrate financial theory into an applied managerial decision-making context. Prereq.: Acct. 900, Econ. 900, Econ. 901, and Fin. 900.
4 q.h.

922. *Capital Management*. Managerial economics of capital budgeting, sourcing, rationing, and control for large enterprises; forecasting demand and internal generation of capital; intangible capital investments; administration of capital appropriations; public policy implications. Prereq.: Fin. 921, Mgmt. 916, or permission of instructor.
4 q.h.

923. *Portfolio Analysis*. The major emphasis will be on selection in both theory and practice by applying the appropriate analytical principles and techniques to fixed income, securities, common stocks, and senior securities with speculative features. A research paper involving the application of analytical techniques is a requirement. Prereq.: Fin. 921.
4 q.h.

924. *Securities Analysis*. The major emphasis will be an in-depth fundamental analysis of the investment merits of the common stock of a firm. This study will be accomplished by applying the appropriate analytical principles and valuation techniques to the firm's financial statements. A research paper will be required. Prereq.: Fin. 921.
4 q.h.

936. *Financial Markets and Institutions*. An in-depth study of functions of financial markets, role of financial institutions, and the impact of government regulation with emphasis on nature and functions of global aspects of financial markets; management of financial intermediaries; innovative financial services and products, and impact of public policies and regulations. Prereq.: Fin. 921.
4 q.h.

939. *Readings and Cases in International Accounting and Finance*. A cross-functional examination of selected topics in international accounting and finance with emphasis on developing research and problem-solving skills. Cases will be presented that teach the strategy and tactics of multinational corporate reporting and financial management. Prereq.: Fin. 838.
4 q.h.

940. *Corporate Financial Strategy*. A capstone course in corporate finance designed to provide the advanced graduate student with an understanding of the strengths and weaknesses of standard models and theories presented earlier in the finance curriculum. The course will utilize readings and cases to investigate topics such as capital budgeting, capital structure, sources of financing, risk management, the dividend decision, mergers and acquisitions, and corporate restructuring. Prereq.: Fin. 921.
4 q.h.

953. *Advanced Financial Analysis*. Applications of financial analysis to business consulting. Includes case studies and practical implementation strategies. Prereq.: Fin. 853.
4 q.h.

968. *Special Topics in Finance*. Topics may vary from quarter to quarter and will be announced with prerequisites and hours. May be repeated.
1-3 q.h.

970. *Seminar in Finance*. Specific topics selected by the staff from timely and controversial work published in the field. Prereq.: All core courses, plus at least nine hours (900-level) in the finance concentration, or permission of instructor.
4 q.h.

996. *Research Problems*. Research under the supervision of a graduate faculty member with the approval of the department chair. Credit will be determined in each case in light of the nature and extent of the project.
1-6 q.h.

998. *Thesis*.
6 q.h.

104 COURSES

Allied Health

Madeleine Haggerty, Chair of the Department
1074 Cushwa Hall
(330) 742-3327

803. *Current Issues in Health Care* (4 q.h.)

807. *Epidemiology for the Health Care Practitioner* (4 q.h.)

814. *International Health Care Systems* (3 q.h.)

816. *Environmental Regulations for Health Care* (4 q.h.)

918. *Program Planning and Evaluation in Health and Human Services.* Principles of planning, developing, implementing and evaluating for non-profits. 3 q.h.

922. *Strategic Analysis for Health and Human Services.* Analyzing programs and developing strategic plans to improve the outcomes. 3 q.h.

924. *Fiscal Management for Health and Human Services.* Principles and skills to develop budgets and become familiar with fiscal matters related to funding sources and program execution. 3 q.h.

999. *Thesis.* 1-8 q.h.

Art

Susan C. Russo, Chair of the Department
4001 Bliss Hall
(330) 742-3627

806. *Indian Art* (3 q.h.)

808. *Twentieth-Century Art to 1945* (4 q.h.)

809. *Twentieth-Century Art from 1945* (4 q.h.)

810.* *Ceramics 3* (4 q.h.)

811.* *Ceramics 4* (4 q.h.)

816. *Introduction to Museum Practices* (5 q.h.)

822.* *Puppetry and Stage Construction* (3 q.h.)

870.* *Advanced Printmaking* (1-8 q.h.)

880.* *Photography 6* (5-10 q.h.)

890. *Problems in Art History* (1-9 q.h.)

920. *Seminar in Art Education.* Problems and projects that pertain to the teaching of art at various levels of learning within schools. The graduate program includes both studio work and pedagogical studies. May be repeated for a maximum of 10 quarter hours credit. Prereq.: Permission of instructor. 2-5 q.h.

925. *Research in Art Education.* An individual and inventive approach to solving existing problems in art education based upon the philosophy, psychology, principles, practices, and perceptions of past and contemporary trends in art education. May be repeated for a maximum of 10 quarter hours credit. Prereq.: Art 920 and permission of instructor. 5 q.h.

* additional fee required

- 950.* *Studio Problems in Painting*. Individual research of two-dimensional form through various media including oil, acrylic, water color, collage, etc. May be repeated for a maximum of 10 quarter hours credit. Prereq.: Permission of instructor. 5 q.h.
- 951.* *Studio Problems in Painting*. Continuation of 950. May be repeated for a maximum of 10 quarter hours credit. Prereq.: Art 950. 5 q.h.
- 952.* *Studio Problems in Painting*. Continuation of 951. May be repeated for a maximum of 10 quarter hours credit. Prereq.: Art 951. 2-5 q.h.
- 960.* *Studio Problems in Sculpture*. Individual research of plastic form through various media including plastics, wood, stone, metals, and related materials. May be repeated for a maximum of 10 quarter hours credit. Prereq.: Permission of instructor. 5 q.h.
- 961.* *Studio Problems in Sculpture*. Continuation of 960. May be repeated for a maximum of 10 quarter hours credit. Prereq.: Art 960. 5 q.h.
- 962.* *Studio Problems in Sculpture*. Continuation of 961. May be repeated for a maximum of 10 quarter hours credit. Prereq.: Art 961. 2-5 q.h.

Biological Sciences

Paul C. Peterson, Chair of the Department
 4037 Ward Beecher Hall
 (330) 742-3601

- 803.* *Population and Community Ecology* (5 q.h.)
 804. *Aquatic Ecology* (4 q.h.)
 804L.* *Aquatic Ecology Laboratory* (2 q.h.)
 805.* *Ichthyology* (4 q.h.)
 806. *Field Ecology* (5 q.h.)
 809.* *Concepts of Developmental Biology* (4 q.h.)
 812.* *Mycology* (4 q.h.)
 819.* *Taxonomy of Flowering Plants* (5 q.h.)
 821.* *Plant Anatomy* (5 q.h.)
 822.* *Plant Physiology* (5 q.h.)
 823. *Molecular and Population Genetics* (4 q.h.)
 824.* *Bacterial and Viral Physiology* (4 q.h.)
 825.* *Radioisotopes in Biology* (4 q.h.)
 827.* *Gene Manipulation* (4 q.h.)
 830.* *Immunology* (5 q.h.)
 832. *Principles of Neurobiology* (4 q.h.)
 833. *Mammalian Endocrinology* (4 q.h.)
 834,* 835*. *Vertebrate Physiology I and II* (5+5 q.h.)
 836. *Molecular Biology of the Cell* (3 q.h.)
 836L.* *Molecular Biology of the Cell Laboratory* (2 q.h.)
 837.* *Cytology and Techniques* (4 q.h.)
 838.* *Biology of Enzymes* (4 q.h.)

* additional fee required

106 COURSES

840.* *Microbial Pathogenic Mechanisms* (3 q.h.)

841.* *Animal Parasitology* (4 q.h.)

842. *Advanced Parasitology* (4 q.h.)

844. *Physiology of Reproduction* (4 q.h.)

853. *Biometry* (4 q.h.)

860. *Evolution* (4 q.h.)

861. *Sociobiology* (3 q.h.)

872.* *Protozoology* (4 q.h.)

873.* *Mammalogy* (4 q.h.)

950.* *Comparative Animal Physiology I*. Evolutionary development of respiratory, circulatory, nervous, and muscle systems in animal kingdom. Three hours lecture and four hours laboratory per week. Prereq.: Biol. 835. 5 q.h.

951. *Developmental and Comparative Neurobiology*. Developmental and evolutionary principles as applied to neurobiology. This course is offered at the Northeastern Ohio Universities College of Medicine by their faculty. Prereq.: Biol. 792 or equivalent. 4 q.h.

952. *Experimental Design*. Controlling variables, experimental design, and treatment of data from biological experiments. Prereq.: Biol. 853. 4 q.h.

953.* *Quantitative Ecology*. Quantitative aspects of populations and communities with emphasis on the development of mathematical models used to simulate complex ecological interactions. Two hours lecture and four hours laboratory per week. Prereq.: Biol. 803 or 952, 853 or 954, and one year of college calculus. 4 q.h.

954. *Advanced Ecology*. Interrelationships of species within the community and their influence upon the ecosystem. Prereq.: Biol. 803. 4 q.h.

956. *Physiological Ecology*. The study of physiological and behavioral adaptations of vertebrates faced with selected environmental stresses of their habitats. Includes metabolism, thermo- and osmoregulation. Prereq.: Biol. 834 and 803. 4 q.h.

957. *Cellular Immunology*. Transplantation rejection, autoimmune diseases, genetics associated with allergy and autoimmunity. Three hours of lecture a week. Prereq.: Biol. 830 or consent of instructor. 3 q.h.

959.* *Analytical Cytochemistry*. An analysis of cell and tissue structure by use of histochemical and cytochemical techniques, including microspectrophotometry, high resolution electrophoresis, autoradiography, and high pressure liquid and gas chromatography. Two hours lecture and four hours laboratory per week. Prereq.: Graduate standing or permission of instructor. 4 q.h.

960. *Plant Growth and Development*. Motivating forces of plant development. Prereq.: Biol. 790. 4 q.h.

962.* *Medical Mycology*. Morphology, physiology, and epidemiology of medically important fungi. Two hours lecture and four hours laboratory per week. Prereq.: Biol. 702. 4 q.h.

963.* *Virology*. Study of plant and animal viruses. Two hours lecture and four hours laboratory per week. Prereq.: Biol. 702. 4 q.h.

* additional fee required

964. *Microbial Genetics*. An examination of bacterial properties and functions in terms of their underlying genetic and biochemical mechanisms. Prereq.: Biol. 790 or permission of instructor. 4 q.h.
- 965.* *Principles of Electron Microscopy*. Students must demonstrate a proficiency in the careful and efficient use of the scanning electron microscope and the application of supplemental equipment for specimen preparation such as the vacuum evaporator, critical point drying apparatus, and sputter-coater. Prereq.: Biol. 837 or equivalent. 3 q.h.
967. *Human Gross Anatomy*. An intensive study of human macromorphology. This course is offered at the Northeastern Ohio Universities College of Medicine by their faculty. Prereq.: Biol. 775 or 710, or equivalent. 5 q.h.
968. *Microscopic Anatomy*. Morphological basis for normal and disturbed functions. Structure and function relationships in human microscopic anatomy. This course is offered at the Northeastern Ohio Universities College of Medicine by their faculty. Prereq.: Biol. 713 and 713L or equivalent. 5 q.h.
969. *Functional Neuroanatomy*. Study of structure and function of the mammalian nervous system with emphasis on the human. This course is offered at the Northeastern Ohio Universities College of Medicine by their faculty. Prereq.: Biol. 792 or equivalent. 5 q.h.
972. *Systematic Zoology*. Principles, significance, and procedure of zoological taxonomy. Prereq.: Biol. 701. 3 q.h.
974. *Neuroendocrinology*. Current concepts of neuroendocrine processes will be discussed. Prereq.: Biol. 833 or equivalent. 4 q.h.
977. *Introduction to Undergraduate Laboratory Supervising*: May be repeated for a total of 6 q.h.
- 977a. *Supervising in the Principles of Biology Series*. (Biology 509 - Principles I.) Students will meet with the Principles I Instructors and must demonstrate proficiency in the materials to be presented in Biology 509 laboratories. Required for all Graduate Teaching Assistants supervising Principles I Laboratory sections. May not be counted as coursework for M.S. in Biology degree and will be assigned a grade of S/U. May be repeated. 2 q.h.
- 977b. *Supervising in the Principles of Biology Series*. (Biology 510 - Principles II.) Students will meet with the Principles II Instructors and must demonstrate proficiency in the materials to be presented in Biology 510 laboratories. Required for all Graduate Teaching Assistants supervising Principles II Laboratory sections. May not be counted as coursework for M.S. in Biology degree and will be assigned a grade of S/U. May be repeated twice. Variable credit. 1-2 q.h.
- 977c. *Supervising in the Principles of Biology Series*. (Biology 611 - Principles III.) Students will meet with the Principles III Instructors and must demonstrate proficiency in the materials to be presented in Biology 611 laboratories. Required for all Graduate Teaching Assistants supervising Principles III Laboratory sections. May not be counted as coursework for M.S. in Biology degree and will be assigned a grade of S/U. May be repeated twice. Variable credit. 1-2 q.h.
- 977d. *Supervising in the Principles of Biology Series*. (Biology 612 - Principles IV.) Students will meet with the Principles IV Instructors and must demonstrate proficiency in the materials to be presented in Biology 612 laboratories. Required for all Graduate Teaching Assistants supervising Principles IV Laboratory sections. May not be counted as coursework for M.S.

* additional fee required

108 COURSES

in Biology degree and will be assigned a grade of S/U. May be repeated twice. Variable credit. 1-2 q.h.

977e. *Supervising in the Physiology and Anatomy Series.* (Biology 551 - Physiology and Anatomy of Humans I.) Students will meet with the Physiology and Anatomy I Instructors and must demonstrate proficiency in the materials to be presented in Biology 551 laboratories. Required for all Graduate Teaching Assistants supervising these laboratory sections. May not be counted as coursework for M.S. in Biology degree and will be assigned a grade of S/U. May be repeated twice. Variable credit. 1-2 q.h.

977f. *Supervising in the Physiology and Anatomy Series.* (Biology 552 - Physiology and Anatomy of Humans II.) Students will meet with the Physiology and Anatomy II Instructors and must demonstrate proficiency in the materials to be presented in Biology 552 laboratories. Required for all Graduate Teaching Assistants supervising these laboratory sections. May not be counted as coursework for M.S. in Biology degree and will be assigned a grade of S/U. May be repeated twice. Variable credit. 1-2 q.h.

988. *Seminar in Biological Sciences.* May be repeated up to 2 q.h. 1 q.h.

989. *Arranged Independent Study.* Study that is supervised by a faculty member. May be repeated up to 4 q.h. Prereq.: Permission of instructor. 2 q.h.

990. *Master's Thesis Research.* Research selected and supervised by departmental advisor and approved by graduate faculty of Biology Department and Graduate Dean. Prereq.: Acceptance by departmental committee. 1-15 q.h.

A maximum of four quarter hours of Topics may be taken:

991. *Botany Topics.* Arranged course in botany. Prereq.: Permission of instructor. 2-4 q.h.

992. *Invertebrate Zoology Topics.* Arranged courses on subjects of invertebrate zoology. Prereq.: Permission of instructor. 2-4 q.h.

993. *Vertebrate Zoology Topics.* Arranged courses on aspects of vertebrate zoology. Prereq.: Permission of instructor. 2-4 q.h.

994. *Genetics and Evolution Topics.* Arranged courses in principles of genetics and forces of evolution. Prereq.: Permission of instructor. 2-4 q.h.

995. *Parasitology Topics.* Arranged courses in field of parasitology. Prereq.: Permission of instructor. 2-4 q.h.

996. *Environmental Biological Topics.* Arranged courses in terrestrial and aquatic ecology. Prereq.: Permission of instructor. 2-4 q.h.

997. *Molecular Biology Topics.* Arranged courses in subjects at molecular level of life. Prereq.: Permission of instructor. 2-4 q.h.

998. *Vertebrate Physiology Topics.* Arranged courses for advanced topics in vertebrate physiology. Prereq.: Biol. 835 and permission of instructor. 2-4 q.h.

999. *Cell Biology Topics.* Arranged courses for advanced topics in cell biology. Prereq.: Biol. 836 and permission of instructor. 2-4 q.h.

1000. *Microbiology Topics*. Arranged courses on subjects of microbiology. Prereq.: Background appropriate to specific topic. 2-4 q.h.
1001. *Mammalian Endocrinology Topics*. Arranged courses on subjects of mammalian endocrinology. Prereq.: Background appropriate to specific topic. 2-4 q.h.
1002. *Special Topics*. Advanced topics in medical education covering areas not otherwise available. This course is offered at the Northeastern Ohio Universities College of Medicine by their faculty. Prereq.: Background appropriate to specific topic. 3 q.h.
1003. *Neurobiology Topics*. Arranged course on subjects of neurobiology. Prereq.: Background appropriate to specific topic. 2-4 q.h.
- 1010.* *Techniques in Animal Tissue Culture*. Procedures for in vitro culture of cells from tissues and organs including preparation of culture media and maintenance of primary and secondary cultures. Two hours lecture and four hours laboratory per week. Prereq.: Biol. 702 or equivalent. 4 q.h.

Business Information Systems

Violet F. Boggess, Chair of the Department
 3077 Cushwa Hall
 (330) 742-3336

820. *Techniques of Office Simulation Procedures* (4 q.h.)
826. *Teaching Intensive and Cooperative Office Education* (4 q.h.)
831. *Alternate Shorthand Systems* (3 q.h.)
860. *Principles and Problems of Business Education* (3 q.h.)
904. *The Improvement of Teaching Business Communication*. Communication theory; techniques and materials for teaching business letter writing, business report writing, oral communication in business, and business English. Prereq.: BIS 704 or equivalent. 3 q.h.
910. *The Improvement of Teaching Shorthand*. Techniques and materials for the teacher of shorthand and transcription. Research is emphasized. Prereq.: BIS 830 or permission of instructor. 3 q.h.
- 920.* *The Improvement of Teaching Typewriting*. Techniques and materials for the teacher of typewriting. Research is emphasized. Prereq.: BIS 810 or permission of instructor. 3 q.h.
930. *The Improvement of Teaching Basic Business*. Techniques and materials for the teacher of the basic business subjects, including general business, business law, and consumer economics. Research is emphasized. Prereq.: Sec.Ed. 800B or permission of instructor. 3 q.h.
940. *The Improvement of Teaching Bookkeeping and Accounting*. Techniques and materials for the teacher of bookkeeping and accounting. Research is emphasized. Prereq.: Sec.Ed. 800D or permission of instructor. 3 q.h.
950. *The Improvement of Teaching Office Practice and Office Machines*. Techniques and materials for the teacher of office practice and office machines. Research is emphasized. Prereq.: Sec.Ed. 800P or permission of instructor. 3 q.h.

* additional fee required

110 COURSES

980. *Seminar in Business Education*. Study of selected topics chosen by the business education staff. May be repeated by nondegree student. Prereq.: Permission of instructor. 1-4 q.h.

Chemical Engineering

Soon-Sik Lim, Chair of the Department
2030 Engineering Science Building
(330) 742-3020

- 805. *Principles of Biomedical Engineering* (4 q.h.)
- 817. *Management of Nuclear By-Products* (1 q.h.)
- 820. *Industrial Pollution Control* (4 q.h.)
- 830. *Introduction to Nuclear Reactors* (3 q.h.)
- 831. *Introduction to Nuclear Materials* (3 q.h.)
- 835. *Introduction to Nuclear Fusion* (3 q.h.)
- 886. *Nuclear Reactor Design* (4 q.h.)

Chemistry

Daryl W. Mincey, Chair of the Department
5053 Ward Beecher Hall
(330) 742-3663

- 801.* *Elements of Physical Chemistry* (5 q.h.)

Note: The above course may not be counted toward an M.S. in Chemistry but may be taken for graduate credit by students in other programs.

- 803.* , 804.* *Chemical Instrumentation I, II* (4+3 q.h.)
- 805. *Applied Spectroscopy* (3 q.h.)
- 807.* *Chemical-Instrumentation Interfacing* (4 q.h.)
- 813. *Thermodynamics and Kinetics* (3 q.h.)
- 821. *Intermediate Organic Chemistry* (3 q.h.)
- 822.* *Organic Analysis* (3 q.h.)
- 823.* *Organic Synthesis* (3 q.h.)
- 824. *Polymer Chemistry* (3 q.h.)
- 825.* *Polymer Chemistry Laboratory* (3 q.h.)
- 829, 830. *Inorganic Chemistry II, III* (2+2 q.h.)
- 831.* *Inorganic Chemistry Laboratory* (2 q.h.)
- 835. *Nuclear Chemistry and Its Applications* (3 q.h.)
- 836. *Chemical Bonding and Structure* (3 q.h.)
- 864. *Chemical Toxicology* (3 q.h.)

911. *Advanced Analytical Chemistry*. The theoretical foundation of analysis with emphasis on recent analytical developments and the current literature. Prereq.: Chem. 741 or 801. 3 q.h.

913.* *Clinical Chemical Instrumentation*. The principles and uses of instrumental techniques as applied to clinical laboratory separation, characterization, and analysis. Two hours lecture and three hours laboratory. Prereq.: Chem. 604. 3 q.h.

* additional fee required

- 915.* *Automation in Clinical Chemistry*. The interfacing of laboratory instrumentation with data processing equipment. Two hours lecture and three hours laboratory. Prereq.: Chem. 803 or 913.
3 q.h.
- 922, 923, 924. *Principles of Biochemistry I, II, III*. A comprehensive study of modern biochemistry. The molecular constituents of living organisms and their dynamic interrelationships will be discussed. Prereq.: Chem. 721 or 793; prereq. or concurrent: Chem. 739 or 801 for 922; 740 or 801 for 923.
3+3+3 q.h.
- 925*, 926.* *Biochemical Techniques*. A laboratory course designed to familiarize the student with biochemical methodology and illustrate experimentally some important biochemical principles. Experiments include the isolation, purification, and characterization of enzymes, nucleic acids, and other biological materials as well as a study of metabolic processes. Need not be taken in sequence. Six hours of laboratory including discussions. Prereq. or concurrent: Chem. 923.
2+2 q.h.
931. *Advanced Inorganic Chemistry*. Current theories and types of bonding. Modern structural principles with applications in inorganic and coordination chemistry. Prereq.: Chem. 829 or 830, or equivalent.
3 q.h.
- 935, 936. *Nuclear Chemistry I, II*. The principles and experimental procedures used in the study of nuclear transformations, natural and artificial disintegration. Prereq.: Chem. 835 or 741; Chem. 935 prereq. to 936.
3+2 q.h.
- 941, 942. *Advanced Organic Chemistry I, II*. Reaction mechanisms and physical organic chemistry. Prereq.: Chem. 721 and either 741 or 801. Chem. 941 prereq. to 942.
3+3 q.h.
943. *Medicinal Organic Compounds*. An introduction to the chemistry and biological activity of organic medicinal compounds. Prereq.: Chem. 721.
3 q.h.
944. *Natural Products*. The chemistry of natural products such as alkaloids, terpenes, antibiotics, and steroids. Prereq.: Chem. 941.
3 q.h.
945. *Advanced Polymer Chemistry*. A study of the polymerization process and the relationship between structure and polymer properties. Prereq.: Chem. 824.
3 q.h.
946. *Biomedical Polymers*. A survey of biomedical polymers, biopolymers, pseudo-enzymes, and other related topics. Prereq.: Chem. 824 or 922.
3 q.h.
951. *Advanced Physical Chemistry I*. Application of quantum chemistry to spectroscopy, kinetics and thermodynamics. Prereq.: Chem. 741.
3 q.h.
952. *Advanced Physical Chemistry II*. Further development of quantum theory as applied to chemical systems. Prereq.: Chem. 951.
3 q.h.
955. *Statistical Mechanics*. Principles and methods of statistical mechanics; classical and quantum statistics with applications to gases, liquids, and solids. Prereq.: Chem. 951 or permission of instructor.
3 q.h.
961. *Clinical Chemistry I*. Principles and methods of clinical chemistry including general laboratory procedures, quality control, and normal values. The chemistry of carbohydrates, proteins, lipids, and electrolytes including renal, liver, and pancreatic function tests, is discussed. Prereq.: Chem. 923.
3 q.h.

* additional fee required

112 COURSES

962. *Clinical Chemistry II*. Principles and methods of clinical enzymology, endocrinology, and toxicology including thyroid and cortical function tests will be covered. Prereq.: Chem. 961. 3 q.h.
963. *Clinical Chemistry Practicum*. Operation and management of the hospital clinical laboratory. The student will spend ten weeks full time in an affiliated hospital laboratory. Applications for this course must be received by the Chair of the Chemistry Department during the first week of the quarter prior to the quarter in which the student wishes to register for the practicum. Prereq.: Chem. 913, 961, and consent of Chair of the Chemistry Department. 3 q.h.
969. *Laboratory Problems*. A laboratory course that stresses individual effort in solving chemical problems. Recommended for high school chemistry teachers. (Not applicable to the M.S. degree in Chemistry.) Prereq.: An undergraduate minor in chemistry. May be repeated up to 9 q.h. 3 q.h.
- 971, 972, 973. *Medical Pharmacology*. The chemical, medical, and pharmacological characteristics of drugs and related materials. This course is offered at the Northeastern Ohio Universities College of Medicine by their faculty and must be taken in sequence. Prereq.: Organic chemistry and permission of instructor. 3+3+3 q.h.
974. *Medical Toxicology*. The toxicological effects of chemical agents from a medical standpoint. This course is offered at the Northeastern Ohio Universities College of Medicine by their faculty. Prereq.: Organic chemistry and permission of instructor. 3 q.h.
975. *Chemistry Laboratory Management*. An Introduction to the practical skills required for safely and effectively working and teaching in a chemistry laboratory setting. Laboratory safety from the aspect of governmental regulations and ACS guidelines, hazardous material handling and disposal procedures, and general laboratory methods will be presented. Required of all first year graduate students. 3 q.h.
976. *Introduction to Undergraduate Laboratory Supervising: General Chemistry*. Supervising in the General Chemistry laboratory. Students will meet with the General Chemistry course instructors and must demonstrate proficiency in the material to be presented in Chemistry 515, 516, and 517 laboratories. Required for all Graduate Teaching Assistants supervising General Chemistry laboratories. Prereq. or concurrent: Chemistry 975. May not be counted as coursework for the M.S. in Chemistry degree and will be assigned a grade of S/U. May be repeated up to a total of 8 q.h. for Chemistry 976, 977, and 978. 2 q.h.
977. *Introduction to Undergraduate Laboratory Supervising: Allied Health Chemistry*. Supervising in the Allied Health Chemistry laboratory. Students will meet with the Allied Health Chemistry course instructors and must demonstrate proficiency in the material to be presented in Chemistry 505 and 506 laboratories. Required for all Graduate Teaching Assistants supervising Allied Health Chemistry laboratories. Prereq. or concurrent: Chemistry 975. May not be counted as coursework for the M.S. in Chemistry degree and will be assigned a grade of S/U. May be repeated up to a total of 8 q.h. for Chemistry 976, 977 and 978. 2 q.h.
978. *Introduction to Undergraduate Laboratory Supervising: Organic Chemistry*. Supervising in the Organic Chemistry Laboratory. Students will meet with the Organic Chemistry course instructors and must demonstrate proficiency in the material to be presented in Chemistry 719, 720, and 721 laboratories. Required for all Graduate Teaching Assistants supervising Organic Chemistry laboratories. Prereq. or concurrent: Chemistry 975. May not be counted as coursework for the M.S. in Chemistry degree and will be assigned a grade of S/U. May be repeated up to a total of 8 q.h. for Chemistry 976, 977, and 978. 2 q.h.

980. *Introduction to Chemical Research I*. Principles of chemical research planning, design, execution and reporting. Includes research proposals, record keeping, written reports, oral presentations, the reviewing process, and professional standards. A survey of chemistry research opportunities. Required of all first-year students in the M.S. program in Chemistry. 3 q.h.
981. *Introduction to Chemical Research II*. The application of the principles of chemical research to the student's M.S. research project. Under the guidance of a research supervisor, the student will investigate the background literature and rationale for a project. The student will then prepare a formal written research proposal and will make an oral presentation of the proposal. Required of all first-year students in the M.S. program in Chemistry. Hours arranged. Prereq.: Chemistry 980 and permission of the Chemistry Chairperson. 3 q.h.
990. *Thesis*. Hours arranged. 1-9 q.h.
- 991, 992, 993, 994, 995, 996, 997. *Special Topics*. Topics selected by the faculty from fields of current research interest or of special emphasis. 991 Analytical; 992 Biochemistry; 993 Inorganic; 994 Organic; 995 Physical; 996 Clinical; 997 Polymer. Each may be repeated up to 6 quarter hours with different topics. 2 or 3 q.h.
998. *Seminar*. May be repeated up to 2 q.h. 1 q.h.

Civil and Environmental Engineering

Jack D. Bakos, Jr., Chair of the Department
267 Engineering Science Building
(330) 742-3027

829. *Civil Engineering Materials, Concrete* (4 q.h.)
859. *Reinforced Masonry Design* (4 q.h.)
- 877.* *Systems Engineering* (4 q.h.)
879. *Civil Engineering Analysis* (4 q.h.)
880. *Advanced Structural Analysis* (4 q.h.)
884. *Solid and Hazardous Waste Management* (4 q.h.)
910. *Advanced Strength of Materials*. The basic methods of structural mechanics, such as conditions of equilibrium and compatibility, stress-strain relations. General treatment of energy principles including virtual work, minimum potential energy; applications to statically determinate and indeterminate systems such as rings, curved beams, plates, and other elastic systems. 4 q.h.
917. *Open Channel Hydraulics*. Analysis and design of open channels for uniform and nonuniform flow; hydraulic jump analysis; boundary layer and roughness effects; flow over spillways; flow in channels of nonlinear alignment and nonprismatic section. 4 q.h.
920. *Wetlands Engineering*. Planning, theory, design and construction of created and constructed wetlands. Wetland functions and values; wetland characteristics - soils, hydrology, and vegetation; regulations; applications in wetland mitigation, wastewater treatment, and pollution control. Prereq.: CEEGR 736 or equivalent. 4 q.h.
941. *Structural Mechanics*. Study of beams under lateral load; beams with combined lateral load and thrust; buckling beams on elastic foundations; applications of Fourier series and virtual work principles

* additional fee required

114 COURSES

- to beam-type structures; stress and strain in three dimensions; applications to flexure of beams and plates and to constrained torsion; elements of engineering theory of plates. 4 q.h.
- 945.* *Civil Engineering Analysis*. Applications of mathematical and numerical methods to the systematic analysis and development of problems in the field of civil engineering. 4 q.h.
946. *Matrix Analysis of Structures*. Introduction to matrix algebra; use of matrix methods in the analysis of statically and kinematically indeterminate structures; flexibility and stiffness methods. 4 q.h.
- 947.* *Finite Element Analysis*. An introduction to finite element techniques as applied to problems in structural mechanics. Direct and variational methods of element formulation with application to beams, beam-columns, frames, arches, thin plates, and shells. 4 q.h.
950. *Pavement Management Systems*. Concepts and principles of pavement design, performance, evaluation, maintenance, rehabilitation, and their integration into a pavement management system (PMS). A PMS software package developed by several state highway agencies will be utilized, and a small PMS using Data Base Management System (DBMS) and Knowledge Based Expert System (KBES) will be developed. 4 q.h.
951. *Construction Project Control*. Advanced topics of Program Evaluation and Review Technique (PERT) and Critical Path Method (CPM) and its application in construction project scheduling. Resource allocation and leveling, construction cost control, computer simulation of construction operations, and expert systems in construction. 4 q.h.
952. *Advanced Foundation Engineering*. Principles of mechanics of materials applied to foundation problems; stresses and deformations in soils, consolidation theory; shallow and deep foundations. 4 q.h.
953. *Flow Through Porous Media*. Analysis of seepage volume and stresses due to flow of water through soils in connection with dams, slopes, excavations, subsurface drainage, and wells. 4 q.h.
954. *Theory of Plates*. Derivation of the classical equations and boundary conditions of thin plate analysis. Static and dynamic load analysis of rectangular and circular plates utilizing classical techniques, finite difference methods, and finite element methods; linear and nonlinear buckling characteristics using energy techniques. Prereq.: Ci.Eng. 941 or 910. 4 q.h.
955. *Theory of Shells*. Basic equations and boundary conditions of thin shell theory including both membrane and bending theories. Static and dynamic load analysis of shells of revolution including cylindrical, conical, and spherical shapes; linear and nonlinear buckling theory of shells. Prereq.: Ci.Eng. 954. 4 q.h.
956. *Advanced Soil Mechanics*. Development of shear strength theories, Mohr-Coulomb-Hvorslev equation, critical path concept, stability of slopes, lateral earth-pressure theories, development of bearing capacity equations. Prereq.: Ci.Eng. 881 or equivalent. 4 q.h.
957. *Structural Stability*. A study of the elastic stability of engineering structures, beam columns, static buckling of elastic beams, frames, plates, and shells, dynamic stability of beams and plates. 4 q.h.

* additional fee required

958. *Structural Dynamics*. Analysis of the response of structures to air blasts and earthquake motions; development of both the normal mode and frequency response methods in dealing with periodic and nonperiodic excitations. 4 q.h.
959. *Advanced Metal Design*. Advanced topics in the structural design of girders, frames, and trusses. Light gauge metal structures. Use of modern alloys and hybrid systems. 4 q.h.
961. *Advanced Concrete Design*. Consideration of advanced design techniques for reinforced concrete members and structures such as composite and prestressed concrete beams and box girders, lift slabs, folded plates, and shells. 4 q.h.
963. *Earthquake Engineering*. Fundamentals of earthquake engineering; response of linear and nonlinear structural systems to earthquake loadings; behavior of structural components to earthquake loadings; concepts of earthquake-resistant design applied to typical engineering structures. Prereq.: Ci.Eng. 958. 4 q.h.
965. *Special Topics*. The application, in civil engineering, of special topics selected by the faculty from fields of current research interest or special emphasis. May be repeated up to 8 q.h. 4 q.h.
966. *Air Pollution Control*. Sources of air pollution. Effects of air pollution, air pollutants, and plume dispersion. Air pollution control methods and equipment to include monitoring techniques. 4 q.h.
967. *Theory and Design of Sewage Systems and Sewage Treatment Plants*. Theory of the various procedures and techniques utilized in the treatment of sewage. Design of sewage treatment facilities. 4 q.h.
968. *Industrial Waste Treatment*. Methods of control of pollution from industrial sources. Neutralization, equalization, and proportioning of wastes. Joint treatment of industrial wastes with municipal waste. Major industrial wastes and their treatment. Prereq.: Ci.Eng. 837 or equivalent. 4 q.h.
- 969.* *Sanitary Engineering Laboratory*. Theory and methods for chemical analysis of water, sewage, and industrial wastes. 4 q.h.
970. *Solid Waste Management*. Sources of solid waste. Collection and transport of solid wastes. Processing techniques. Disposal methods. Recovery and conversion of solid wastes. Hazardous wastes and their management. Prereq.: Ci.Eng. 736 or equivalent. 4 q.h.
971. *Stream Pollution Control*. Biological and hydrological aspects of stream pollution control. Stream reaeration. Oxygen sag analysis. Efficient use of waste assimilation capacity. Prereq.: Ci.Eng. 837 or equivalent. 4 q.h.
972. *Advanced Studies in Environmental Engineering*. Current topics in physical, chemical, and biological treatment of water and wastewaters, air and land pollution control methods. Three hours lecture and three hours laboratory. Prereq.: Ci.Eng. 837 or equivalent. 4 q.h.
973. *Intermediate Fluid Mechanics*. Fluid properties. Basic laws for a control volume. Kinematics of fluid flow. Dynamics of frictionless incompressible flow. Basic hydrodynamics. Equations of motion for viscous flow, viscous flow applications, boundary layer theory. Unsteady flow. 4 q.h.

* additional fee required

116 COURSES

974. *Environmental Systems Engineering*. Principles of systems approach in formulating and analyzing environmental problems and design of pollution control facilities. (This course involves extensive use of computers.) Prereq.: Ci.Eng. 837 or equivalent and knowledge of Fortran programming. 4 q.h.

975. *Theory and Design of Water Treatment Processes*. Theory of the various procedures and techniques utilized in the treatment of water for municipal and industrial use. Review of water quality criteria. Design of water purification facilities. 4 q.h.

976. *Design of Small Dams*. Flood routing, reservoir engineering. Hydraulic design of small gravity, earth-fill and rock-fill dams, spillways, and energy dissipators. Prereq.: Ci.Eng. 717 and 775 or equivalents. 4 q.h.

977. *Advanced Hydrology*. Snow accumulation, melt and runoff; urban and small watershed hydrology; hydrologic design; digital simulation of hydraulic phenomena; critical review of current pertinent literature. Prereq.: Ci.Eng. 775 and In.Eng. 642 or equivalents. 4 q.h.

978.* *Water Resources Planning*. The need and demand for water; project formulation; technical, economic, financial, social, environmental, and political considerations; data requirements; multipurpose projects. Prereq.: In.Eng. 724 or equivalent. 4 q.h.

979. *Water Quality Modeling*. Approaches to mathematical modeling of physical, chemical, and biological processes in natural systems; development of computer models to simulate the fate and transport of pollutants in lakes, streams, and estuaries; application of models to evaluate water resource management options. Prereq.: Ci.Eng. 736 or equivalent and background in computer programming. 4 q.h.

989. *Graduate Projects*. Special projects, to include analysis, design, research, or other independent investigation, undertaken by the M.S. student under the direction of a graduate faculty member with the approval of the department Chair. Credit will be determined in each case in light of the nature and extent of the project. 1-4 q.h.

990, 991, 992. *Thesis*. 3+3+(1-3) q.h.

Communication and Theater

Alfred W. Owens II, Chair of the Department
2000 Bliss Hall
(330) 742-3631

Speech

852. *Decision Making* (4 q.h.)

858. *Practicum in Communication Research* (1-4 q.h.)

898. *Seminar in Speech Communication* (4 q.h.)

Theater

864. *Advanced Directing* (4 q.h.)

* additional fee required

Computer and Information Sciences

Kriss A. Schueller, Chair of the Department
329 Meshel Hall
(330) 742-3379

800.* *File and Communication Systems* (4 q.h.)

806.* *Operating Systems* (4 q.h.)

807.* *Compiler Design* (4 q.h.)

814.* *Computer Architecture* (4 q.h.)

817.* *Communication Networks for Computers* (4 q.h.)

820.* *Simulation* (4 q.h.)

835.* *Artificial Intelligence* (4 q.h.)

840.* *Theory of Finite Automata* (4 q.h.)

855.* *Database Systems* (4 q.h.)

860.* *Programming Language Structures* (4 q.h.)

870.* *Data Structures and Algorithms* (4 q.h.)

881.* *Microcomputer System Architecture* (4 q.h.)

895.* *Special Topics* (2-5 q.h.)

901.* *Principles of Computer Programming.* Significant features of several computer programming languages to fit the needs of graduate students with no previous computer science experience. Programming techniques and problem analysis. Students will do programming projects appropriate for their needs. 4 q.h.

905.* *Information Structures.* Basic concepts of information: modeling structures, machine level implementation, storage management, programming, language implementation, and run-time structures; sorting and searching. Prereq.: C.Sci. 620 and 710, or permission of instructor. 4 q.h.

910.* *Computer Software Systems.* Classes of software systems, system structures, systems operations. Resource management routines. Software design. Prereq.: C.Sci. 905. 4 q.h.

915.* *Computer Organization and Architecture.* Organization and architectural design of the subsystems and major functional units of modern digital computers and their interconnections. Prereq.: C.Sci. 905. 4 q.h.

930.* *Formal Languages and Syntactic Analysis.* Study of formal languages, especially context-free languages, and their applications to parsing and syntactic analysis. Prereq.: C.Sci. 905, or 705 and 710. 4 q.h.

950.* *Analysis of Data Base Systems.* Study of the organization, design, implementation, and modification of large-scale information processing systems. Prereq.: C.Sci. 910, or 800 and 805. 4 q.h.

990.* *Computer Science Project.* Report and discussion of individual topics or research projects in computer science. Prereq.: 12 q.h. of computer science courses numbered above 800. May be repeated once in a different area of computer science. 2-4 q.h.

995.* *Special Topics in Computer Science.* Special topics in computer science selected by the staff. Prereq.: Permission of instructor. May be repeated in a different topic up to 12 q.h. 1-5 q.h.

* additional fee required

118 COURSES

- 996.* *Independent Study*. Study under the supervision of a faculty member. Prereq.: Permission of department Chair. May be repeated up to a maximum of 10 q.h. 1-5 q.h.
- 999.* *Thesis*. A student may register for 6 q.h. in one quarter or for 3 q.h. in each of two quarters. 3-6 q.h.

Counseling

James R. Rogers, Chair of the Department
2064 Fedor Hall
(330) 742-3257

- 821, 822. *Seminar in Guidance and Counseling* (1-4 q.h., 1-4 q.h.)
825. *Group Processes in the School* (3 q.h.)
862. *Principles of Interaction with Special Needs Students* (Sp.Ed. 862) (3 q.h.)
879. *Consultation with Gifted/Talented Students and Their Families* (4 q.h.)
895. *Counseling Workshop* (1-4 q.h.)
898. *Introduction to Professional Counseling in School and Community Contexts* (3 q.h.)
900. *Counseling Methods and Practice*. Methods and practices of professional counseling relative to relationship, goals, process, and documentation. Relevant ethical guidelines are stressed. Includes experiential skill training. Prereq.: Couns. 898. 3 q.h.
902. *Introduction to Chemical Dependency*. Theory and research on chemical dependency and its effects upon the individual and family. 3 q.h.
903. *Chemical Dependency Counseling*. Theory and research on chemical dependency with emphasis on assessment and models for treatment and recovery. Prereq.: Couns. 902 and 962. 3 q.h.
961. *Introduction to Pupil Personnel Services*. Introduction to purposes and practices of pupil-personnel services in elementary and secondary schools. History of pupil-personnel services and current developments. An analysis of the contribution of related disciplines, in particular psychology, sociology, and economics. The relationship of the services to community mental health and social agencies. 3 q.h.
962. *Counseling: Principles, Theory, Practice*. Basic principles of counseling in an educational context. Development of procedural bases for counseling and educationally oriented counseling theory. Ethics and limitations involved in counseling practices. 3 q.h.
963. *Occupational and Educational Information in Guidance*. Principles of career development and use of educational and occupational information resources in the guidance program. Lecture and discussion are used to explore occupational structure of the United States, sources of educational and occupational information including community resources, and the collecting, classifying, filing, and organization of educational and occupational information for use in the guidance program. 3 q.h.
964. *Measurement and Assessment Techniques*. Administration, scoring, and interpretation of standardized tests and measures used in counseling. Prereq.: Three-quarter-hour course in basic statistics. 3 q.h.

* additional fee required

965. *Applied Testing in Career Counseling*. The administration, scoring, and interpretation of selected assessment tools and their application to career counseling. Prereq.: Couns. 964. 3 q.h.
967. *Guidance and Counseling Workshop*. Selected topics of interest chosen by staff. May be repeated for different topics. 1-5 q.h.
968. *Research in Counseling*. The study and application of research in counseling. Prereq.: Three-quarter-hour course in basic statistics. 3 q.h.
969. *Administration of Personnel and Guidance Services*. A comprehensive study of the dynamic qualities inherent in planning, management, functioning, and structuring of personnel and guidance services in public schools. 3 q.h.
970. *Counseling and Social Services in the Schools*. Examines the scope and comprehensive developmental programs for counseling and social services in the schools with consideration of need assessment and development of such programs. Prereq.: Couns. 961. 3 q.h.
971. *Human Relations for the Classroom*. (see Sec.Ed. 971) 3 q.h.
972. *Career Counseling*. Theories of vocational choice, vocational success and satisfaction, decision-making, and vocational testing. Career counseling as related to the economic and social context. Prereq.: Couns. 964. 4 q.h.
973. *Group Counseling Theory and Practice*. Theories pertaining to group dynamics, process, interaction, consultation, and counselor intervention. Supervised experience in the use of interventions appropriate to stages of group development. Prereq.: Couns. 900 and 962. 4 q.h.
974. *Case Studies in School Guidance and Field Experience in Community Social Agencies*. Methods of collecting data, synthesis, and interpretation of data about a person and relationship to environment. Real and assumed situations of pupils over an extended period of time are presented for study and analysis. The course includes practical field experience with various community social agencies to acquaint the student with agency services and social case-work methods. Particular emphasis is placed on the disadvantaged and exceptional child. 3-6 q.h.
975. *Counselor Consultation*. A study of theoretical models of the consultation process in counseling will be presented together with techniques for implementation in educational and agency settings. 3 q.h.
976. *Social and Cultural Issues in Counseling*. Counseling theory and technique related to social and economic change, ethnic groups, subculture, issues of sexuality and gender, urban and rural societies, cultural mores, the use of leisure time, and differing life patterns. 3 q.h.
980. *Introduction to Clinical Counseling*. Overview of Diagnostic and Statistical Manual of Mental Disorders, fourth edition (DSM-IV) format with emphasis placed on the development of diagnostic skills for the major mental and emotional disorders commonly encountered in social service, educational, and community counseling agencies. Brief reviews of treatment considerations for the major mental and emotional disorders will also be provided. Prereq.: COUNS 962, and coursework in human lifespan development. 3 q.h.
982. *Educational Leadership in Primary and Intervention Strategies*. This course will identify mental health issues that impact on individuals, families, and the educational system. Prevention and intervention strategies will be explored as well as issues and procedures of referral. 3 q.h.

120 COURSES

990. *Independent Study*. (see EMCE 990) 1-4 q.h.
991. *Introduction to Marriage and Family Counseling*. Overview of marriage and family counseling from a systems perspective. Major theories and techniques will be studied. 3 q.h.
992. *Counseling with Couples*. Theory and application of counseling and problem-solving techniques with couples in a dynamic system. Prereq.: Couns. 962. 3 q.h.
1001. *Counseling Practicum I*. Supervised individual counseling practice with volunteer clients. Focus upon process, clarification, and resolution of counselee goals and counselor self-awareness/evaluation. Prereq.: Couns. 900, 962, 972, and 980. 3 q.h.
1002. *Counseling Practicum II*. Supervised individual and group counseling practice in settings appropriate to student's programs. Requires field placement of 100 hours. Prereq.: Successful completion of department comprehensive exam and permission of instructor. 3 q.h.
1003. *Counseling with Children and Adolescents*. Various theories and respective techniques for counseling and psychotherapy with children and adolescents. Research concerning the efficacy of such approaches will also be studied. Prereq.: Couns. 962 and graduate course in human development. 3 q.h.
1005. *Internship in College Student Personnel Work*. Supervised experience in selected college or university settings with involvement in such areas as student development, counseling center, placement center, residence hall counseling, student advisement, and student activities. Prereq.: Permission of instructor. 6-12 q.h.
1006. *Guidance in the Classroom*. Studies various factors important to a facilitative climate in the classroom and activities through which elementary counselors and teachers can provide these conditions. Considered as classroom management and discipline techniques based upon learning theory, implementation of democratic group structure for elementary school classrooms, and organized activities designed to promote the development of self-understanding and understanding of others in the child's world. The course requires extensive reading and review of published materials designed for classroom guidance in addition to observation of classrooms and role-playing experiences. 3 q.h.
1007. *Psychopharmacology in Clinical Counseling*. History of psychopharmacology and theories of mental disorders. Emphasis upon current pharmacological treatments of mental and emotional disorders. Prereq.: COUNS 1002. 3 q.h.
1008. *Assessment for Educational Decision Making*. Assessment procedures used for making leadership decisions in the educational setting. Emphasis will be given to community assessment, identifying high-risk students, and the development of guidance and state testing programs. 3 q.h.
1009. *School Counseling Internship*. Supervised internship in selected school counseling and human services programs. May be repeated to a maximum of 15 quarter hours. Prereq.: Couns. 1002 and permission of instructor. 3-12 q.h.
1010. *Community Counseling Internship*. Supervised internship in selected community agencies offering counseling and other mental health services. May be repeated to a maximum of 15 quarter hours. Prereq.: Couns. 1002 and permission of instructor. 3-12 q.h.

1013, 1014, 1015. *Topical Seminar in Counseling.* The course is for practicing counselors and counselor trainees and will include a survey of literature in counseling, contemporary issues, individual and small group study of special problems chosen by staff, for example: research in counseling, counselor values and the counseling process, student values and drug abuse, team approach to counseling services, etc. May be repeated to a maximum of 16 q.h. Prereq.: Permission of instructor.

1-4 q.h.

1017. *Group Procedures in Counseling.* A laboratory course intended as an experimental introduction to dynamics of groups. Students will participate in community experiences involving the entire class as well as small group activities involving subdivisions of the class. Readings on group processes and involvement in relevant projects and reports are also included in the course. Prereq.: Permission of instructor.

3 q.h.

1024. *Introduction to Higher Education Student Services.* This introductory course will provide an orientation to the Student Services division. Emphasis is on practical applications of Urban Student Services. Prereq.: None.

3 q.h.

1026. *Student Personnel Programs in Higher Education.* Philosophy and objectives of student personnel programs. A review of services provided by the student personnel worker, relationships among the various college departments relative to student personnel services, and problems concerning student conduct and responsibilities.

3 q.h.

1027. *Issues in College Student Personnel Work.* An examination of current issues as related to student personnel services at the level of higher education and student involvement in university activities.

3 q.h.

1028. *Advanced Counseling Theory Seminar.* Research and discussion on selected counseling theories chosen by staff, e.g., Adler, Rogers, Ellis, Carkhuff, Berne. May be repeated once. Prereq.: Couns. 962.

3 q.h.

1030. *Human Relations Training for School Personnel.* (EMCE 1030, Sec.Ed. 1030). Designed to improve the interpersonal relationships of administrators, counselors, teachers, and other professional staff. Objectives include examination of personal communication styles, the effect of the individual on task groups, and increasing leadership potential.

3 q.h.

1031. *Clinical Counseling Theory.* Counseling theories of abnormal behavior and pathological conditions related to the total life cycle. Included will be specific personality theories and then application to mental health counseling. Prereq.: Master's degree in Counseling or permission of instructor.

3 q.h.

1032. *Clinical Evaluation I.* Supervised practice in the administration and interpretation of standardized ability, interest, intelligence, and aptitude tests. Prereq.: Master's degree in Counseling or permission of instructor.

3 q.h.

1033. *Clinical Evaluation II.* (Objective Personality Assessment.) Supervised practice in the administration and interpretation of standardized objective measures of personality. Prereq.: Master's degree in Counseling or permission of instructor.

3 q.h.

1034. *Clinical Evaluation III.* (Projective Personality Assessment.) Supervised practice in the administration and interpretation of projective personality tests. Prereq.: Master's degree in Counseling or permission of the instructor.

3 q.h.

122 COURSES

1036. *Consultation and Educational Approaches to Prevention.* The study of consultation theory and models. Included will be educational approaches to prevention of substance abuse, child abuse, family and marriage problems, etc. Prereq.: Master's degree in Counseling or permission of instructor.

3 q.h.

1037. *Counseling Methods for Treating Mental and Emotional Disorders.* Study of interventions and prevention strategies and techniques associated with the treatment of the major mental and emotional disorders commonly encountered in social service and community counseling agencies. Prereq.: COUNS 980 and Master's degree in Counseling or permission of instructor.

3 q.h.

1038. *Advanced Marriage and Family Counseling.* Application of intervention and prevention strategies related to marriage and family problems. Case reports and demonstration of methods are extensively used. Prereq.: Master's degree in Counseling, Couns. 991 or permission of instructor.

3 q.h.

1039. *Administration and Supervision of Mental Health Services.* A comprehensive study of management, planning, function, personnel structuring, supervision, and counseling services in a mental health setting. Prereq.: Master's degree in Counseling or permission of instructor.

4 q.h.

1040. *Supervision of Counseling Services.* Theory and practice of counselor supervision. Includes practicum assignment in counselor supervision. Prereq.: Master's degree in Counseling plus two years post-master's professional experience.

3 q.h.

1041. *Clinical Counseling Practice III.* Laboratory experience in the evaluation and treatment of mental and emotional disorders, including the development and implementation of a treatment plan, assessment and reporting of treatment program, and referral procedures. Prereq.: Master's degree in Counseling or permission of instructor.

3 q.h.

1050. *Clinical Counseling Internship.* Supervised experience in selected community agencies offering diagnosis and treatment of mental and emotional disorders. Prereq.: Master's degree in Counseling or permission of instructor. May be repeated.

6-12 q.h.

1060. *Thesis Research.* Design, proposal, completion and reporting of scholarly research deemed acceptable by the department faculty. Prereq.: COUNS 964, COUNS 968 or permission. (a maximum of 6 credits toward degree requirements.)

1-9 q.h.

Criminal Justice

James A. Conser, Chair of the Department
2087 Cushwa Hall
(330) 742-3279

825. *Constitutional Issues in Criminal Law* (4 q.h.)

826. *Forensic Science and the Criminal Justice System* (4 q.h.)

848. *Legal and Managerial Aspects of Security* (4 q.h.)

850.* *Contemporary Problems in Criminal Justice* (4 q.h.)

875. *The Juvenile Justice System* (4 q.h.)

890. *Judicial Administration* (4 q.h.)

* additional fee required

910. *Law and Social Control*. A historical analysis of the evolution of criminal law as a mechanism of social control in democratic societies. 4 q.h.
915. *The Etiology of Crime*. A comprehensive analysis of the causes of crime. Major criminological theories are considered in light of contemporary empirical research and social thought. 4 q.h.
920. *Social Administration of Criminal Justice*. A historical and comparative analysis of the administration of the criminal justice process in theory and practice in the United States and other selected nations. 4 q.h.
925. *Administrative Theory in Criminal Justice*. Administrative relationships in criminal justice organizations. The functions of the executive, the nature of authority and leadership, the systemic relationships of the subsystems, communications, and the evolution of administrative theory as applied to the criminal justice setting. 4 q.h.
940. *Statistical Techniques in Human Services*. A consideration of the courses of statistical information in health and human services and the limits and use of such data, with primary emphasis upon nonparametric statistics and their application to the field. 4 q.h.
945. *Research Methods in Human Services*. Problems in the design and execution of health and human services research; the development of research design of the kinds most useful to health and human service research problems. Prereq.: CJ 940. 4 q.h.
950. *Specific Problems in Criminal Justice*. Lectures on specific topics relating to the crime problem and the criminal justice process. The topics may vary from quarter to quarter and will be announced prior to enrollment. This course is repeatable twice provided it is on different topics. 4 q.h.
955. *Independent Study*. Study under the personal supervision of a faculty member with the approval of the graduate coordinator. May be repeated once. 4 q.h.
957. *Readings in Criminal Justice*. Extensive reading assignments in the student's interest area under the supervision of the graduate advisor. Enrollment in this course must have the written approval of the graduate coordinator. May be repeated for no more than a total of 8 q.h. 1-5 q.h.
960. *Program Planning and Evaluation*. A systematic review of procedures used to plan and evaluate criminal justice programs, with special attention to the posing of research questions in context; questions relating to the selections of designs, methods, and process of formative and summative evaluation. 4 q.h.
970. *Police Management Theory*. Systematic examination of the principles and practices related to the management of large police organizations. Examples will reflect problems of the urban environment, relationships with political entities, and internal control. 4 q.h.
971. *Police Personnel Systems*. Evaluation of police personnel systems; employment qualifications, psychiatric screening, polygraph examination, minority recruitment; police cadet systems, personnel costs, educational requirements, lateral entry, mandated state minimum training standards, and federal involvement in police staffing. 4 q.h.
972. *Special Problems in Police Administration*. Emphasis on contemporary management dilemmas in police organizations; policy formulation, team policing, community relations, consolidated law enforcement, discipline, education and training, professionalism, selective enforcement, corruption, and related problems. 4 q.h.

* additional fee required

124 COURSES

980. *Institutional Correctional Systems*. Modern theories of corrections in the institutional setting as considered in light of historical development and social change. 4 q.h.
981. *Non-Institutional Correctional Systems*. Analysis of the delivery systems used in the reduction of criminal behavior in the community setting. Emphasis will be placed on diversion programs, current literature, and innovative approaches. 4 q.h.
982. *Treatment Approaches in Corrections*. An in-depth analysis of the theories of rehabilitation as applied in the correctional setting. 4 q.h.
995. *Field Experience in Criminal Justice*. Supervised experience in an applied criminal justice setting. Prereq.: Majority of core and track courses and recommendation of student's committee per department handbook, permit required. 4-6 q.h.
999. *Research and Thesis*. 1-9 q.h.

Early and Middle Childhood Education

Philip E. Ginnetti, Chair of the Department
1060 Fedor Hall
(330) 742-3251

816. *Diagnosis and Remediation of Elementary School Mathematics* (3 q.h.)

885. *Teaching Strategies I* (Sec.Ed. 885) (3 q.h.)

886. *Teaching Strategies II* (Sec.Ed. 886) (3 q.h.)

887. *Teaching Strategies III* (Sec.Ed. 887) (3 q.h.)

888. *Topical Seminar in Reading* (1-4 q.h.)

900. *Early/Middle Childhood Education Workshop*. Intensive study of selected topics, issues, or problems of current interest in early and/or middle childhood education. May be repeated. 1-4 q.h.

909. *Supervision of Student Teachers Elementary*. Basic counseling and supervisory techniques associated with the acceptance of responsibility for inducting the teaching neophyte into his/her first real professional experience. Actual work with student teachers. 3 q.h.

911. *Early Childhood Programs and Theorists*. A study of the historical background of early childhood programs and theorists. Analysis, development, and implementation of early childhood programs according to the current research findings. 3 q.h.

912. *Play and Creative Expression in Early Childhood Education*. Examination of the importance of play in the early childhood settings as it relates to cognitive, creative, emotional, language, literacy, motor, perceptual, physical, and social development of the child. Prereq.: EMCE 911. 3 q.h.

913. *Curriculum, Theories, and Methods in Preschool Education*. Analysis of curriculum, theories and methods, early education environments, materials and programs for the preschool child (birth to age 5). Attention given to the role of parents as teachers. Prereq.: EMCE 911, 912. 3 q.h.

914. *Curriculum, Theories, and Methods in Early Childhood Education, Kindergarten-Grade 3*. Analysis of curriculum, theories, methods, and assessment and how they relate to learning, with emphasis on social, emotional, moral, cognitive, language, motor, and perceptual development of children from ages 5 to 8. Prereq.: EMCE 911, 912. 3 q.h.

915. *Application of Selected Theoretical Principles for the Developing Teacher*. Critical analysis of a broad range of teaching situations and the ability to arrive at decisions based on data presented in case studies. The case-based, discussion-oriented approach addresses the inevitable challenges and problems encountered in classroom practice. Prereq.: EMCE 913 or 914. 3 q.h.
916. *The Elementary School Curriculum*. Developing an understanding of the meaning of curriculum at the elementary level, evidence of need for curricular changes, influences of society on curriculums, exploration of current status and trends; the role of teacher and administrator in curriculum appraisal and development. 3 q.h.
917. *Survey of Reading and Language Arts Programs*. A critical appraisal of reading and language arts programs in schools and an analysis of contemporary methodological issues. 3 q.h.
918. *Elementary School Mathematics Programs*. An analysis of past and present programs of elementary school mathematics; evaluation of programs including a consideration of adequacy of content, recognition of mathematics as a system, provision of number experiences for the learner. 3 q.h.
919. *Social Studies Programs in the Elementary School*. Objectives of elementary school social studies programs in terms of current needs; adaptation of materials of instruction in terms of the social science skills; evaluation of student progress; critical analysis of methods of improving instruction in social studies. 3 q.h.
- 920.* *Elementary School Science Programs*. Focus on the objectives for science education in the elementary school; the elementary school science curriculum; process and inquiry in the elementary school science program; teacher education, educational media, and the evaluation of science teaching. 3 q.h.
921. *Issues, Problems, and Developments in Elementary Education*. A study of recent trends in elementary school organization and instruction (nongraded units, team teaching, middle schools, etc.). 3 q.h.
923. *Reading and Language Learning: Early Years*. Investigation and research of the philosophy, principles, and practices of reading and language arts development of the child, birth through age 8. Language learning need of diverse populations will be addressed. 4 q.h.
924. *Reading and Language Learning: Middle Years*. Investigation of theories and approaches for strengthening vocabulary development, teaching comprehension skills, refining word attack skills, applying study skills, utilizing cooperative learning strategies, and analyzing reading tasks and materials from ages 9 through 13. Prereq.: EMCE 917. 4 q.h.
925. *Reading and Language Learning: Adolescent Years*. An investigation of philosophies, principles, and practices of research-based reading and language arts as tools in learning and communicating; from ages 14 through 22. Prereq.: EMCE 917. 4 q.h.
926. *Reading and Language Arts Assessment I*. An examination and application of formal and informal assessment procedures in the context of reading and language arts instruction. Emphasis will be placed on the use of background information and discrete data. Strategies providing for effective appraisal procedures and developmentally appropriate activities will be included. Prereq.: EMCE 924 or 925. 4 q.h.

* additional fee required

126 COURSES

927. *Reading and Language Arts Assessment II.* The selection, administration, and interpretation of formal and informal assessment tools in the context of reading and language arts instruction. Emphasis will be placed on the assessment of factors affecting student comprehension of text and the application of study procedures and the use of assessment information for informed decision making in the language arts curriculum. Prereq.: EMCE 926. 4 q.h.

928. *Case Study in Reading and Language Arts.* Application of previous course content involves supervised formal and informal assessment of school-age pupils, developing an individualized reading plan, selecting appropriate strategies and materials for teaching, evaluating results of instruction, and writing a case study report. Prereq.: EMCE 927. 4 q.h.

929. *The Reading and Language Arts Professional.* Investigation of theories and performance-based procedures for creating, analyzing, guiding, and changing school- and system-wide reading and language arts programs. Prereq.: EMCE 927. 4 q.h.

938. *Early Adolescent Characteristics and Educational Program Needs.* Application of research and theories about the physical, cognitive, emotional, moral, and social development of 10- to 15-year olds to middle grade instructional decisions. Students will reflect upon and analyze policy and program implications based on developmental principles and investigate effective collaboration with family and others involved with the age group. Includes field inquiry. 4 q.h.

939. *Organizational Components of Middle Level Schools.* Reflection on theory and research information concerning the historic, philosophical, and organizational components of middle level schools, including program assessment and evaluation of learning environments for appropriateness to early adolescent learners. Prereq.: EMCE 938. 3 q.h.

940. *Introduction to Middle Grade Math and Science Curriculum and Instruction.* Examines major theories of math and science to identify key principles in courses of study which increase early adolescents' understanding of how the world works and foster development of skills in choosing healthy lifestyles. Prereq.: EMCE 938. 2 q.h.

941. *Methods of Teaching Math and Science in Middle Grades.* This course will provide continued opportunities for teachers to analyze and increase their knowledge and skills in teaching math and science in middle grades. Continued analysis and implementation of teaching methods in math and science which advance adolescents' operational and critical thinking skills for clarifying and answering questions, solving problems, and making decisions. Prereq.: EMCE 940. 4 q.h.

942. *Pedagogy Appropriate for Early Adolescent Learners.* A course linking the learning needs of early adolescents with a variety of curricular and instructional approaches and assessments. Students will reflect on pedagogical theories and research on ways to integrate middle-level curriculum and promote learning construction by students, participate in professional collaboration, investigate alternative assessment techniques, and design an action research project to apply their understanding. Prereq.: EMCE 938. 3 q.h.

943. *Action Research: Pedagogy Appropriate for Early Adolescent Learners.* A culminating middle-grade level classroom teacher research project implementing the design of the study organized in EMCE 942. Students will review authentic assessment literature, collect and analyze evaluation data collaboratively with students, interpret results, and propose improvements. Prereq.: EMCE 938, 942. 3 q.h.

990. *Independent Study.* (Couns. 990, Sec.Ed. 990) Individual investigation of advanced topics under guidance of selected staff. Prereq.: Found. 904. 1-4 q.h.

1010. *Seminar in Early Childhood Education*. Analysis of contemporary issues and trends, current educational policy and practices, and career options in the field of early childhood education. 3 q.h.
1011. *Special Project in Early Childhood Education*. Designed as a culminating experience. Direct participation is required for the successful completion of a field study, onsite project, or other classroom-based experience deemed suitable by the student's major faculty advisor. Prereq.: EMCE 911, 912, 913 or 914, Found. 872 and 904. 4 q.h.
1030. *Human Relations Training for School Personnel*. (see Couns. 1030) 3 q.h.
1042. *Professional Development for Classroom Teacher Educators*. A restricted professional development course for classroom teacher educators invited to supervise the instructional program of student teachers and field experience students. The course concentrates on developing analytical observation, conferencing, evaluation, and supervision skills based on scientific knowledge and theoretical constructs. Prereq.: Invitation from YSU and endorsement from home school district to serve as a classroom teacher educator. 3 q.h.
1043. *Field Experience: Service Learning and School-Community Collaboration*. Field experience study of school-community collaboration and opportunities for service learning to promote healthy development of early adolescents. Participants design, administer, and analyze an interview survey and propose a collaborative model for interaction. Prereq.: EMCE 938, 939, 940, 941 or 942, and 943. 3 q.h.

Economics

Tod Porter, Chair of the Department
321 DeBartolo Hall
(330) 742-3428

801. *Economics of Industrial Organization* (4 q.h.)
802. *Comparative Economic Systems* (4 q.h.)
803. *Business and Government* (4 q.h.)
806. *History of Economic Thought* (4 q.h.)
809. *Current Problems in Money, Banking, and Financial Markets* (4 q.h.)
810. *Managerial Economics* (4 q.h.)
811. *International Trade* (4 q.h.)
812. *International Finance and Economic Development* (4 q.h.)
820. *Regional Economic Analysis* (4 q.h.)
822. *Urban Economics* (4 q.h.)
- 824.* *Applied Time Series Analysis of Economic and Business Data* (4 q.h.)
- 825.* *Economic and Business Data Analysis* (4 q.h.)
831. *Labor Markets* (4 q.h.)
850. *Introduction to Decision Analysis* (4 q.h.)
- 853.* *Applied Econometrics* (4 q.h.)
- 900.* *Statistical Problems*. A survey of the fundamental statistical concepts and techniques used in business and economics with special emphasis on the interpretation and uses of statistical analysis in business and economic decision-making. These statistical procedures include hypothesis testing and estimation, chi-square tests, and analysis of variance, correlation, and regression analysis, index numbers,

* additional fee required

128 COURSES

economic time series, nonparametric statistics, and decision analysis. (Not applicable toward the M.B.A. or M.A. in Economics degrees.) 4 q.h.

901. *Basic Economic Analysis*. An analytical approach to the basic concepts of micro and macroeconomics with emphasis on the interpretation and application of these concepts to the firm and to the economy. This course is especially designed for professionals in business and other related areas. (Not applicable toward the M.B.A. or M.A. in Economics degrees.) 5 q.h.

902. *International Economic Analysis*. Analysis of the causes and consequences of international trade, exchange rates, and balance of international payments adjustment. Capital flow and problems of international liquidity. Exchange speculation and the forward exchange market. Study of various commercial and financial policies and their economic implications. Theory and development of international regional economic integration and their worldwide consequences. (Not applicable toward the M.A. in Economics degree.) Prereq.: Graduate standing. 4 q.h.

903.* *Statistics for Executive Decision Making*. A survey of statistical techniques and their application in management. Emphasis is placed on problem formulation through the use of real-world business cases and databases and on interpreting the statistical results obtained from microcomputer statistical software. (Available to E.M.B.A. students only; a pre-E.M.B.A. course.) 4 q.h.

905. *Introduction to Mathematical Economics*. A course designed to provide graduate students in economics with an opportunity to acquire the necessary skills in using the quantitative methods that are required to complete a graduate-level economic theory sequence successfully. 4 q.h.

906. *Foundations of State and Local Public Finance*. An introduction to the economics of state and local finance. The course will compare the theoretical ideal for government behavior according to economic theory and how well the current system of taxation and spending matches that ideal. Special attention will be paid to Ohio's system of taxation and spending. (Not applicable toward the M.A. in Economics degree.) 3 q.h.

907, 908, 909. *Economics for Teachers I, II, III*. An examination of the major economic issues and problems of our society and the use of applicable economics theory for their solution. Meetings with representatives of various institutions of society are included in order to relate the issues and theory to present-day society. (Intended for elementary education students.) Prereq.: 907 for 908; 908 for 909. 3+3+3 q.h.

910, 911. *Microeconomic Theory I, II*. Theories of consumer behavior and the firm; the determination of product and factor prices under varying market structures; capital theory and welfare economics; study of static and dynamic conditions of multi-market stability; applications of microeconomic concepts. Offered Winter and Spring quarters. 4+4 q.h.

915. *Health Economics*. A theoretical and empirical analysis of the health care sector. Topics include the demand for health care and health insurance, the perverse incentives of health insurance, moral hazard, physician and hospital behavior, and the role of competitive markets in the delivery of health care. Special emphasis is placed on the analysis of public policy, including financing and regulating the health care industry. Prereq.: Econ. 901. 4 q.h.

920, 921. *Macroeconomic Theory I, II*. Study of aggregated economic variables to determine the proper policy mix needed to obtain the economic goals of full employment, stable price levels, etc. Investigation of dynamic modern post-Keynesian macroeconomic models as influenced by classical and neo-classical developments. Offered Fall and Winter quarters. 4+4 q.h.

* additional fee required

926. *Aggregative Economics for Business Decision Making*. An analysis of macroeconomic behavior and its impact on business. Topics include determination of aggregate output and income; consumer expenditure theory; investment analysis; fiscal and monetary policy implication for business; forecasting models and application; international trade issues. Considerable stress is placed on providing students with information on the sources of macroeconomic information. (Not applicable toward the M.A. in Economics degree.) Prereq.: Econ. 901 or equivalent. 4 q.h.
940. *Monetary Theory I*. A survey of the important theoretical and empirical works in monetary theory. The first of a two-course sequence, the topics covered include the classical model, the Keynesian Monetarist debate, the demand for money, the supply of money, rational expectations, potential output. Prereq.: Econ. 705, 900 or 976; 920. 4 q.h.
941. *Monetary Theory II*. A survey of the important theoretical and empirical works in monetary theory. The second of a two-course sequence, the topics covered include monetary control, portfolio theory, and financial firms as optimizing enterprises. Prereq.: Econ. 940. 4 q.h.
945. *Theory of Federal Finance*. A theoretical analysis of the effects of various federal policies upon the allocation of resources, distribution of income, level of employment, and rate of economic growth. Investigation of theories of taxation and public expenditure criteria. 3 q.h.
946. *Theory of State and Local Finance*. A theoretical and empirical investigation of state and local taxation and expenditure criteria, tax bases and incidence, problems of finance unique to local governmental units. 3 q.h.
950. *Theory of the Labor Market*. Intensive study of topics related to the problems and general performance of the various segments of the labor market in a free industrial society within a theoretical framework. 3 q.h.
951. *Issues in Collective Bargaining and Arbitration*. Intensive study and theoretical analysis of topics related to contemporary issues in collective bargaining. 3 q.h.
955. *Industrial Structure*. Comparison of the economic characteristics of industries: growth, technology, concentration, scale economies, geographic concentration, competition, and market structure. Theoretical and empirical comparisons. 3 q.h.
- 975.* *Quantitative Methods for Economics*. A continuation of the analysis of calculus of one and several variables, difference and differential equations, vectors and matrices, and linear programming as applicable to the static and dynamic models in micro and macroeconomic theory. Prereq.: Econ. 709 or equivalent. 3 q.h.
976. *Econometrics*. Probability distributions and properties of estimators, alternative methods of estimating parameters. Analysis of linear regression model of two variables including problems of estimation, hypothesis testing, and forecasting. Extension of the linear model to three and in general to n variables. The course combines rigorous theoretical presentation with exercises in modelbuilding. Prereq.: Econ. 705, 900 or equivalent. Offered Spring quarter. 4 q.h.
981. *International Finance*. Analysis of balance of payments, adjustment mechanisms, and exchange-rate determination. The effects of the international economy on domestic levels of employment, prices, interest rates, and growth. Emphasis is placed on the study of the elasticity, absorption, monetarist-rational expectations, and exchange intervention models. Prereq.: Econ. 920. 4 q.h.

* additional fee required

130 COURSES

983. *Regional Economic Integrations*. Regional economic integrations and their theoretical, domestic, and worldwide economic implications. Analysis of the structure, purpose, and international effects of such major regional economic integrations as the European Economic Community (the Common Market), the European Free Trade Association (EFTA), the Organization for Petroleum Exporting Countries (OPEC). The role of the United States in developing several international economic organizations. Prereq.: Econ. 901 or equivalent. 4 q.h.

985. *International Trade*. A theoretical and empirical investigation into the determinants of the commodity composition of trade between nations. The effects of commodity trade on the welfare of nations. The effects of tariffs and trade restrictions on the commodity composition of trade and the welfare gains from trade. Prereq.: Econ. 910. 4 q.h.

990. *Special Topics in Economics*. Special interest topics selected by the staff in the following areas: economic education, economic theory, and applied economics analysis. May be repeated to a maximum of nine hours toward a graduate degree. 1-5 q.h.

998. *Research Seminar*. Applied quantitative research techniques will be discussed. Students are required to undertake an original quantitative research project in a field of economics and write a paper summarizing their results. Prereq.: Econ. 911 or 921; and 976. 4 q.h.

999. *Master's Thesis*. May be repeated twice. 3 q.h.

Educational Administration

Robert J. Beebe, Chair of the Department
2008 Fedor Hall
(330) 742-1436

908.* *Computer Applications for Administrators*. An introduction to the techniques and principles of microcomputer applications for administrators. Emphasis will be placed on student, personnel, financial, facilities, equipment, library, planning, and office microcomputer applications. Prereq.: Found. 889 or permission of instructor. 3 q.h.

947. *Basic Principles of Elementary School Administration*. Investigation and study of the general problems of administration in the elementary school. 3 q.h.

948. *Basic Principles of Secondary School Administration*. The role of the secondary school principal in general administrative techniques. 3 q.h.

949. *School Law*. Principles of constitutional, statutory, case, and common law affecting Ohio schools as they apply to the political subdivision of the school district and the administrative line, and staff personnel; legal provisions and principles relating to education at all levels. 3 q.h.

950. *School Business Management*. The principal's responsibility for school management problems including activity fund accounting, purchasing, budgeting, building maintenance, pupil insurance, and related areas. Prereq.: Found. 889 or permission of instructor. 3 q.h.

* additional fee required

952. *School Finance*. A study of the fiscal setting of public school finance in the United States, with particular emphasis on the State of Ohio. It will analyze systematic approaches to local, state, and federal financing of schools, including accounting, budgeting, purchasing, and funding for the operation of public schools. 3 q.h.
954. *School Community Relations*. A course designed to develop competency in the techniques of planning, administering, and evaluating effective programs of school-community relations. 3 q.h.
955. *Staff Personnel Administration*. Policies and practices of personnel administration. Recruitment, selection, assignment, and supervision of teaching and nonteaching personnel. Salary schedules and other employee rewards. Policies for career development. Handling of grievances and negotiations. 3 q.h.
956. *Educational Facilities*. A course designed to familiarize the prospective administrator with the problems of new plant development and maintenance remodeling, rehabilitation of current plants, and the selection and maintenance of equipment. Some classes will be held in various locations off campus. 3 q.h.
988. *Evaluation of Educational Institutions*. Evaluation of educational institutions using current techniques and criteria; to include field applications. For teachers and administrators. 3 q.h.
990. *Seminar in Educational Administration*. Study of selected topics chosen by the Educational Administration staff. (Not applicable for degree programs.) May be repeated by nondegree students. 1-4 q.h.
1021. *Field Experience I*. (Sp.Ed. 1021) A field experience in administrative and supervisory practices required for the Master's degree in Educational Administration. Admission by permission of Chair of Educational Administration. Prereq.: Ed.Adm. 949, 955, 1031, 1036, Found. 904, and Sec.Ed. 946. 3 q.h.
1022. *Field Experience II*. A field experience in administrative practices for elementary and secondary principalship, school business managers, and assistant superintendents. Admission by permission of Chair of Educational Administration. Prereq.: M.S. in Ed. in Educational Administration and EMCE 816 and 881 or Sec.Ed. 934; EMCE 916 or Sec.Ed. 931; Ed.Adm. 947 or 948; 908; 950 and 988. 3 q.h.
1023. *Field Experience III*. A field experience in administrative practices required for superintendent's certification. Admission by permission of Chair of Educational Administration. Prereq.: M.S. in Ed. in Educational Administration, completion of YSU requirements for principalship certification, and Econ. 946, Ed.Adm. 956, 1024, 1035, 1041 and two of the following: Found. 901, 902, 905. 3 q.h.
1024. *Seminar in Collective Bargaining*. Study of the process of collective bargaining in school systems. 3 q.h.
1025. *Advanced Law and Policy Seminar*. Explores selected legal developments in depth and examines the role and limits of the law in shaping educational policy and practice. Acquaints students with legal and social science research involving organizational responses to new legal mandates, including organizational compliance, policy implementation and impact. 3 q.h.
1031. *Theories of Educational Administration*. Theories relevant to public school administration. The role of theory in development of leadership, management skills, and decision-making. Emphasis includes research in theory-building and converting theory to practice. 3 q.h.

132 COURSES

1033. *Theories of Change in Education*. Theories and research from education, business, the social and behavioral sciences. Emphasis upon theory and its relation to organization structure, roles, leadership, and resistance to change. Case studies will be analyzed from a theoretical framework. 3 q.h.

1034. *Implementing Change in Education*. Research-based strategies to implement change in schools. Specific skills required of the change-agent are developed and practiced in simulated and field situations. Prereq.: Ed.Adm. 1033. 3 q.h.

1035. *The Superintendency*. The role of the superintendent in the administration of a public school system. Focuses on the major responsibilities of the board of education and the superintendent. Prereq.: Ed.Adm. 954 and eligibility for certification as a principal or supervisor. 3 q.h.

1037. *Planned Field Experience in Instructional Service*. An administrative practicum open to advanced graduate students seeking specialist certification in instructional service. Prereq.: M.S. in Educational Administration or equivalent, and Ed.Adm. 988, 1031, EMCE 916, Found. 933, Sec.Ed. 931, 934, 946, 959 and 1036. 3 q.h.

1038. *Planned Field Experience for Staff Personnel Administration*. An administrative practicum open to advanced graduate students seeking specialist certification in staff personnel administration. Prereq.: M.S. in Educational Administration or equivalent, and Ed.Adm. 955, 1024, 1031, EMCE 909, 921, 1030, Sec.Ed. 910, 946, 951, 959, 1032 and 1036. 3 q.h.

1039. *Planned Field Experience School and Community Relations*. An administrative practicum open to advanced graduate students seeking specialist certification in school and community relations. Prereq.: M.S. in Educational Administration or equivalent, and Ed.Adm. 954, 1031, 1031, EMCE 911, 921, Found. 905, 915, Sec.Ed. 946, 951, 1036 and Sp.Ed. 984. 3 q.h.

1041. *Field Experiences in School Plant Planning*. Field experiences in conducting a master facilities study for a school district. Analysis of school enrollments, evaluation of school plants. Financial and political aspects of plant planning. (Some classes will be held in various locations off campus). Prereq.: Ed.Adm. 956. 3 q.h.

1100.* *Advanced Computer Applications in Educational Research*. Computer applications to complex professional activities, including research design, statistical analysis, program evaluation, and dissertation research. Prereq.: Doctoral admission and Ed.Adm. 908. 3 q.h.

1105. *Advanced Educational Research/Dissertation Proposal*. This course guides the development of research problems into a doctoral dissertation proposal consisting of a purpose section, literature review, and statement of methodology. Prereq.: Doctoral admission, Found. 977 or 980, and Ed.Adm. 1100. 3 q.h.

1122. *Leadership in Education*. An examination of the philosophy, theory, research, and practice of leadership as applied to schools and school districts. Prereq.: Doctoral admission. 3 q.h.

1125. *Politics and Policy Development in Education*. A course in the political and policy context of public and nonpublic schools, with emphasis on local and state policy development. Prereq.: Doctoral admission. 3 q.h.

1130. *Organizational Dynamics*. A course in the interactions between people and subunits in school organizations, with particular emphasis on the use of these interactions to improve unit and organizational performance. Prereq.: Doctoral admission. 3 q.h.

* additional fee required

1135. *Seminar in Personnel Administration*. The use of personnel administration, the theory, research, and best practice in achieving educational goals and in solving administrative problems in schools. Emphasis on problems of practice. Prereq.: Doctoral admission and Ed.Adm. 955. 3 q.h.
1140. *Seminar in Administrative Theory*. A seminar in the development and use of administrative theory in achieving educational goals and solving administrative problems in schools. Prereq.: Doctoral admission, Found. 945 and Ed.Adm. 1031. 3 q.h.
1155. *Seminar in Current Educational Issues*. Focus on administrative, school, student, family, and community issues with emphasis on the role that school leadership can play in addressing these issues. Prereq.: Doctoral admission. 3 q.h.
1190. * *Dissertation*. The culminating requirement of the Ed.D. program; the design, proposal, conduct, reporting, and defense of scholarly research that addresses a meaningful topic derived from and contributing significantly to the literature of the field. Prereq.: Completion of doctoral comprehensive examination. May be repeated for a maximum of 24 q.h. 1-9 q.h.

Electrical Engineering

Salvatore R. Pansino, Chair of the Department
276 Engineering Science Building
(330) 742-3012

805. *Quantum Electronics* (4 q.h.)
807. *Pulse, Digital, and Switching Circuits* (4 q.h.)
808. *Electronic Circuits, Signals, and Systems* (4 q.h.)
812. *Molecular Engineering* (4 q.h.)
816. *Theory and Fabrication of Solid-State Devices* (4 q.h.)
- 817.* *Sensor Design and Application* (4 q.h.)
819. *Plasma Dynamics* (4 q.h.)
825. *Sequential Logic Circuits Analysis and Design* (3 q.h.)
- 825L.* *Combinational and Sequential Circuits Laboratory* (1 q.h.)
826. *Advanced Logic Circuits Analysis and Design* (3 q.h.)
- 826L.* *Advanced Logic Circuits Laboratory* (1 q.h.)
840. *Electric Power Systems* (3 q.h.)
- 840L.* *Electric Power Systems Laboratory* (1 q.h.)
850. *Communications Systems II* (4 q.h.)
- 860.* *Energy Radiation and Propagation* (4 q.h.)
- 879.* *Computer-Aided Design of Electrical Networks and Systems* (4 q.h.)
880. *Linear Control System Design* (4 q.h.)
881. *Modern Control System Design* (4 q.h.)
- 890.* *Power Electronics* (4 q.h.)
901. *Control Systems I*. Analysis of linear systems, characteristics of linear systems, analogous systems, development and application of Laplace and other transform methods. Systems with feedback, systems with distributed parameters. 4 q.h.
902. *Control System II*. Linear feedback systems theory. Stability criterion. Synthesis in complex and time domain. Multivariable systems (multiple input-output) and multiple loop systems with emphasis on state variable and matrix techniques. Analysis and design of carrier systems. 4 q.h.

* additional fee required

134 COURSES

903. *Nonlinear Control Systems Analysis*. Introduction to basic nonlinear phenomena and methods. Stability concepts for feedback loops. Study of time-varying nonlinear feedback systems including free and forced responses. Circle criterion, Papov's criterion, O'Shea criterion, and other frequency domain stability criteria. Lyapunov stability theory. O'Shea's response bound theorems. 4 q.h.
- 911, 912. *Electromagnetic Fields I and II*. Solution of boundary value problems in general form. Laplace, Poisson, and diffusion and wave equations in orthogonal coordinate systems. 4+4 q.h.
921. *Quantum Electronic Devices*. Electronic energy levels in quantum electron devices; application of energy transitions to semi-conductors, masers, and lasers. Analysis of energy of atomic gases as applied to gas lasers. Crystal structure of solid-state maser and laser materials. 4 q.h.
925. *Physical Properties of Crystals*. The symmetry of crystals and its effect on physical properties, tensor analysis, dielectric and magnetic susceptibilities, elastic and piezoelectric properties, thermodynamics of crystals, transport properties, crystal optics, electromagnetic wave propagation in anisotropic media. 4 q.h.
- 931.* *Digital Systems Engineering I*. Boolean algebra, logical mapping; combinational synthesis; analog and digital conversion: coding structures; hybrid numerical circuitry. Structures of combinational circuit synthesis; logical circuit methods of Quine, Huffman, Mealy, Moore: Boolean matrices, bilateral and cascade networks. 4 q.h.
- 932.* *Digital Systems Engineering II*. Continuation of E1.Eng. 931 with emphasis on sequential synthesis. Prereq.: E1.Eng. 931 or permission of department Chair. 4 q.h.
941. *Linear Electronic Circuits*. Design of linear active circuits; amplifier analysis and synthesis; feedback amplifiers; stability; integrated circuits; transfer functions; synthesis methods; noise determination and reduction. 4 q.h.
951. *Network Analysis*. The analysis of time and frequency domain response of networks using transform and state variable techniques. Matrix methods, modeling, topological properties, and signal-flow analysis techniques. 4 q.h.
954. *Network Synthesis*. A study of realization procedures for driving point and transfer function synthesis of networks. Concepts of positive real functions, methods such as Foster, Cauer, Brune, and Darlington. Approximation methods of Butterworth Tchebyscheff. 4 q.h.
960. *Seminar*. May be repeated once. 4 q.h.
981. *Electric Power System Engineering*. The formulation of equations to study electric power network problems, including feeders, power flow, short circuits, protection systems, and stability. The study of power system over-voltages and transients caused by short circuits, switching, and lightning. The application of numerical techniques to study and design special projects using digital computations. 4 q.h.
990. *Thesis*. 1-9 q.h.

* additional fee required

English

Sandra W. Stephan, Chair of the Department
202 DeBartolo Hall
(330) 742-3415

820. *Advising Student Publications* (May not be counted toward an M.A. in English.) (4 q.h.)
- 849.* *Professional and Technical Editing* (4 q.h.)
850. *Sociolinguistics* (4 q.h.)
851. *Language Acquisition* (4 q.h.)
855. *Advanced Linguistics* (4 q.h.)
856. *TESOL Methods* (4 q.h.)
857. *TESOL Practicum* (1-4 q.h.)
858. *English Grammar* (4 q.h.)
- 865.* *Selected Topics in Film* (4 q.h.)
883. *Milton* (4 q.h.)
898. *Professional Writing Internship* (2-4 q.h.)
900. *Methods of Literary Research*. Basic concepts and methods of literary research and analysis. 4 q.h.
901. *Methods of Composition Research*. Theories and methods of composition research; emphasis on strategies for conducting, analyzing, and writing about classroom and workplace studies. 4 q.h.
902. *Literary Theory*. May focus on particular theoretical approaches or provide an overview of literary criticism. May be repeated once. 4 q.h.
906. *Teaching of Literature*. (Sec.Ed. 906) Problems, issues, practices, and research which affect the teaching of literature at various grade levels and in college courses. 4 q.h.
907. *Teaching of Writing*. (Sec.Ed. 907) Problems, issues, practices, and research which affect the teaching of writing at various grade levels and in college courses. 4 q.h.
911. *Chaucer and the Medieval World*. Study of selected literary works reflecting medieval thought and culture. May be repeated once with a different topic. 4 q.h.
912. *Sixteenth- and Seventeenth-Century Studies*. Nondramatic literature of the British Renaissance, excluding Milton, with varying emphases, such as the lyric from Wyatt to Marvell; the interrelationship of satirical, utopian, and pastoral literature; the development of prose style and narrative. May be repeated once with a different topic. 4 q.h.
913. *Shakespeare and Renaissance Drama*. Varying emphases on the dramatic works of Shakespeare and/or his contemporaries. May be repeated once with a different topic. 4 q.h.
914. *Restoration and Eighteenth-Century British Studies*. Prose, poetry, and/or drama of the period studied in historical and cultural context and from various critical perspectives. May be repeated once with a different topic. 4 q.h.
915. *Early American Studies*. Prose, poetry, and/or drama from the colonial period up to the early nineteenth century examined in their historical and cultural contexts. May be repeated once with a different topic. 4 q.h.

* additional fee required

136 COURSES

916. *Nineteenth-Century British Studies*. Prose, poetry, and/or drama of the period studied in historical and cultural context and from various critical perspectives. May be repeated once with a different topic. 4 q.h.
917. *Nineteenth-Century American Studies*. Examines nineteenth-century American literature and culture through particular themes, genres, styles, periods, and/or figures. May be repeated once with a different topic. 4 q.h.
918. *Studies in Children's Literature*. Classic and/or contemporary children's literature. Emphasis may be on development, trends, critical standards, cultural context, classroom selection and use. May be repeated once with a different topic. 4 q.h.
919. *Studies in Adolescent Literature*. Classic and/or contemporary adolescent literature. Emphasis may be on development, trends, critical standards, cultural context, classroom selection and use. May be repeated once with a different topic. 4 q.h.
920. *Twentieth-Century British Studies*. Prose, poetry, and/or drama of the period studied in historical and cultural context and from various critical perspectives. May be repeated once with a different topic. 4 q.h.
922. *Twentieth-Century American Studies*. Examines works in relation to the history and social and cultural developments of the period. Nonliterary texts may be included, such as film, visual arts, and music. May be repeated once with a different topic. 4 q.h.
935. *Studies in the British Romantics*. Prose, poetry, and/or drama of the period studied in historical and cultural context and from various critical perspectives. May be repeated once with a different topic. 4 q.h.
956. *Studies in Applied Linguistics*. Examines a specific topic in applied linguistics such as TESOL, second and first language acquisition, computational linguistics, or lexicography. May be repeated once with a different topic. 4 q.h.
960. *Studies in Linguistics*. Examines a specific topic such as stylistics, semantics, sociolinguistics, or psycholinguistics. May be repeated once with a different topic. 4 q.h.
961. *Studies in Poetry/Poetics*. Examines the principles, concepts, social and cultural contexts, terminologies, themes, genres, movements, and/or figures of poetic composition. May be repeated once with a different topic. 4 q.h.
962. *Studies in Prose*. Examines forms such as the novel, short story, essay, biography, autobiography, or travel literature. Emphasis may be on definition, development, cultural context, figures, or themes. May be repeated once with a different topic. 4 q.h.
963. *Studies in a Literary Figure*. Examines an author's work within the context of the writer's life, literary precursors, circle, or other writings. May be repeated once with a different topic. 4 q.h.
964. *Studies in Post-Colonial Literature*. Examines fiction, poetry, drama, and criticism arising from post-colonial experience. May be repeated once with a different topic. 4 q.h.
- 965.* *Studies in Film*. Analysis of motion pictures and their creators; topics may include classic and

* additional fee required

contemporary styles, genres, and methods of production, as well as film theory and criticism. May be repeated once with a different topic. 4 q.h.

966. *The Writing of Poetry*. Discussion and application of approaches, techniques, and forms involved in the writing of poetry. May be repeated once with a different topic. 4 q.h.

967. *The Writing of Prose*. Discussion and application of approaches, techniques, and forms involved in the writing of fiction and/or nonfiction. May be repeated once with a different topic. 4 q.h.

975. *English Education Practicum*. Approaches to teaching English and the language arts. May be repeated to a total of 4 q.h. 1-4 q.h.

976. *Studies in English Education*. Theories, issues, and/or criticism in the teaching of English. May be repeated once with a different topic. 4 q.h.

989. *Composition Practicum*. Techniques and strategies for teaching college composition, including course design and classroom practice. Required of and limited to first-year English Department graduate assistants. To be repeated for three quarters for a total of 4 quarter hours. Grading is S/U. (May not be counted toward an M.A. in English.) 1+2+1 q.h.

990. *Special Topics*. May be repeated once. 4 q.h.

1060. *Professional and Academic Writing for Educational Administrators*. Examination and application of the rhetorical theories underlying academic and professional discourse. Focus on scholarly writing and written communication in management. (May not be counted toward an M.A. in English.) 3 q.h.

A Graduate Certificate in Professional Writing and Editing is available through the Department of English. Please see the appropriate information in the "Graduate Certificates" section of this catalog.

Professional Writing and Editing Certificate Courses

943.* *Technical Communication*. In-depth discussion of audience, format, document design, and corporate structure. Focus on refining skills and providing theoretical support for practical applications. Prereq.: Engl. 743 and 849 or permission of instructor. 4 q.h.

944.* *Document Design and Production*. Application of computer software and hardware to design and produce technical documents. (May not be counted toward an M.A. in English.) 4 q.h.

953. *Publications Issues and Management*. Exploration of the issues involved in managing and producing professional publications, including publications in students' own fields. Focus on organizational, editorial, and authorial voice; editorial policies; audience analysis; and the processes by which publications are conceived, designed and produced. 4 q.h.

992. *Professional Communication*. Focus on a selected topic in technical writing or professional communication, e.g., proposal writing, science writing, computer documentation, nonfiction prose. May be repeated once with a different topic. 4 q.h.

993. *Discourse Theory*. Examination and discussion of contemporary theories of discourse analysis, with some attention to the history and development of rhetorical theory. 4 q.h.

* additional fee required

Finance (See Accounting and Finance)**Foreign Languages and Literatures**

L. Allen Viehmeyer, Chair of the Department
501 DeBartolo Hall
(330) 742-3461

900. *Seminar*. Study of selected topics common to several or all of the following languages: French, German, Italian, Spanish, Russian, and Latin. The topic will be announced each time the course is offered. Prereq.: Open only to graduate students proficient in at least one of the languages offered in the department. May be taken three times for credit if content is not repeated. 4 q.h.

French

820. *Selected Topics in 18th-Century French Literature* (4 q.h.)
830. *Selected Topics in 19th-Century French Literature* (4 q.h.)
845. *Selected Topics in 20th-Century French Literature* (4 q.h.)
850. *Selected Topics in French Literature Outside of France* (4 q.h.)
873. *Textual Analysis* (4 q.h.)
874. *Advanced French Composition* (4 q.h.)
885. *Special Topics* (2-4 q.h.)

901. *Special Topics in French*. Arranged course for graduate students only. Prereq.: Two 800-level courses in French with grade of B or better and permit to enter. May be repeated once if topic is different. 4 q.h.

German

860. *Selected Masterpieces of German Literature* (4 q.h.)
861. *Contemporary German Literature* (4 q.h.)
874. *Advanced German Composition* (4 q.h.)
885. *Special Topics* (2-4 q.h.)

901. *Special Topics in German*. Arranged course for graduate students only. Prereq.: Two 800-level courses in German with grade of B or better and permit to enter. May be repeated once if topic is different. 4 q.h.

Italian

801. *Italian Literature of the 14th Century* (4 q.h.)
802. *Italian Literature of the 16th Century* (4 q.h.)
830. *Italian Literature of the 19th Century* (4 q.h.)
840. *Italian Literature of the 20th Century* (4 q.h.)
885. *Special Topics* (2-4 q.h.)

901. *Special Topics in Italian*. Arranged course for graduate students only. Prereq.: Two 800-level courses in Italian with grade of B or better and permit to enter. May be repeated once if topic is different. 4 q.h.

Spanish

838. *Topics in Modern Spanish-American Literature* (4 q.h.)

855. *Topics in Spanish Language and Linguistics* (4 q.h.)

870. *Topics in Spanish Literature* (4 q.h.)

885. *Special Topics* (2-4 q.h.)

890. *Topics in Latin American Literature* (4 q.h.)

901. *Special Topics in Spanish*. Arranged course for graduate students only. Prereq.: Two 800-level courses in Spanish with grade of B or better and permit to enter. May be repeated once if topic is different. 4 q.h.

Foundations of Education

James Pusch, Chair of the Department

1021 Fedor Hall

(330) 742-3223

870. *Problems of the Classroom Teacher* (3 q.h.)

871. *Pupil Problems* (3 q.h.)

872.* *Statistical Methods in Education* (3 q.h.)

873. *Comparative Education* (3 q.h.)

875, 876, 877. *Seminar in Foundations of Education* (1-4 q.h. each)

880. *Inner-City Educational Workshop* (3 q.h.)

889.* *Small Computer Applications in the Classroom* (3 q.h.)

900R. *Seminar in History of the Education of Children and Youth*. A seminar on the history of childrearing which stresses the interplay of family and schooling on the idea of childhood. Students will do seminar papers. 3 q.h.

901. *Philosophical Foundations of Educational Theory and Practice*. An examination of the basic philosophical premises upon which functional educational systems have been based. 3 q.h.

902. *Socio-Cultural Aspects of Education*. An introduction to socio-cultural interpretations of teaching and learning with emphasis on recent developments in the theory and content of social science research in education. 3 q.h.

903. *Classics in Education*. Selected readings from classical works of literature and respected social commentaries which contribute to understanding educational values and the institutionalization of education. 3 q.h.

904. *Educational Research*. An introduction to the techniques of educational research and elementary statistical concepts. Preparation of a written prospectus for a research problem will be required. Stress will be placed on the use of the library in the collection of data. Experience in interpreting research data will be provided to enable the student to interpret adequately the findings of educational research. Prereq.: Found. 872 or equivalent course, or permission of instructor. 3 q.h.

905. *A History of American Education*. The development of educational practice in the United States. An examination of progress towards educational goals. Implications of historical backgrounds for present problems. 3 q.h.

* additional fee required

140 COURSES

915. *Critiques on Contemporary Education*. Selected writings of contemporary systematic social/educational critics. Emphasis on theories of schooling and public support of educational values. 3 q.h.
926. *Standardized Testing*. Study of the use and consequences of large-scale testing programs in education. Development of a knowledge base to enable students to examine current practices in educational testing critically. Emphasis will be on the interpretation and validity of test scores currently being used for instructional, administrative, and political decision-making in education. 3 q.h.
928. *Research Methods in Health Services*. The study and application of research design in the area of health services. Each student will be required to conduct a literature search and to develop a research proposal. Prereq.: Psych. 910 or equivalent. 3 q.h.
932. *Theory and Practice in Evaluation Research*. Analyses of the major models including the Stufflebeam, Stake, Provus, and Scriven models used in educational program evaluation. 3 q.h.
933. *Proposal Writing in Education*. Techniques of drafting proposals for grants; particular emphasis on guidelines and regulations for 1) teacher mini-grants for State of Ohio, 2) Right to Read grants, and 3) Title IV-C grants and other educational funding sources as appropriate. Prereq.: Found. 872 and 904 or equivalent. 4 q.h.
935. *Philosophical Foundations of Middle Grade Education*. (EMCE 935) Philosophical interpretations of teaching/learning and educational policy with emphasis on middle grade education. 3 q.h.
937. *Sociological Foundations of Middle Grade Education*. (EMCE 937) Socio-cultural interpretations of teaching/learning with emphasis on middle grade education. Prereq.: Sec.Ed. 935. 3 q.h.
945. *Research Design*. An in-depth analysis of the major research methodologies used in the Educational Administration journals and a review of the statistical tools that support these methodologies. Prereq.: Found. 872 and 904. 3 q.h.
953. *Philosophy of and Knowledge in Educational Research*. Examination of basic philosophical questions as they relate to specific developments in educational research and curriculum development theory. 3 q.h.
977. *Qualitative Research Methods*. An in-depth analysis of the qualitative research methodologies used in the study of the institution of schooling, including participant observations, interviewing, and document analysis. Prereq.: Found. 945. 3 q.h.
- 980.* *Advanced Statistical Methods in Education*. An extension of parametric and nonparametric statistical techniques covered in Found. 872 with emphasis on interpretation of educational data sets from SPSS computer printouts. Prereq.: Found. 872 or equivalent. 3 q.h.
995. *Workshop in Foundations of Education*. Intensive study of selected issues or problems of current interest. May be repeated to a maximum of 12 q.h. 1-4 q.h.
998. *Field Experience in Educational Research*. Planned field experience in the area of educational research and evaluation. Supervised participation in some aspect of action research in the schools. Prereq.: Found. 872, 904, or Couns. 964, and permission of advisor. 3-6 q.h.

* additional fee required

1000, 1001, 1002, 1003, 1004. *Seminar in Foundations of Education*. Study of selected issues and problems of current interest chosen on the basis of need, e.g., community-environmental influences on the school, international education, demographic studies regarding schools, and other selected topics. Prereq.: Graduate status and permission of instructor. Maximum total 15 q.h. 1-5 q.h.

1102. *Multicultural Perspectives in Educational Leadership*. This course explores the concepts involved in cultural identity including race, ethnicity, gender, and class as they affect and are affected by school organization and practice. Prereq.: Doctoral admission and Found. 902. 3 q.h.

1110. *Theories of Inquiry*. This course investigates historic and contemporary theories of how one comes to know something. Ways of knowing, believing, categorizing, and arriving at certainty, the development of statements of validity and trust, and construct validity will be examined. Prereq.: Doctoral admission, Psych. 903 and 906. 3 q.h.

1115. *Schools, Society and Ideology*. Advanced course in the analysis of social, cultural, economic, and political challenges facing educators and policy makers with emphasis on prevalent belief systems supporting contemporary school policy and practices. Prereq.: Doctoral admission and Found. 901. 3 q.h.

Geology

Ikram Khawaja, Chair of the Department
213 Engineering Science Building
(330) 742-3612

802.* *Stratigraphy and Sedimentation* (4 q.h.)

803.* *Optical Mineralogy* (5 q.h.)

805. *Special Problems in Geology* (1-5 q.h.)

806.* *Introduction to X-Ray Diffraction* (3 q.h.)

812.* *Sedimentology* (2 q.h.)

815. *Geology and the Environment 2* (4 q.h.)

901. *Geology of Ohio and Pennsylvania*. The geologic history and development of the rocks, structure, landforms, and mineral resources of Ohio and Pennsylvania. Prereq.: Geol. 802 or equivalent. 4 q.h.

Health Sciences

Loretta M. Liptak, Chair of the Department
102 Beeghly Physical Education Center
(330) 742-3742

828. *Grant Writing for Health Professions* (4 q.h.)

893. *Workshop in Health Education* (1-4 q.h.)

948. *Analysis of Health Care Systems*. A study of the historical, political, philosophical, legal, and organizational elements of the American health care delivery systems. 3 q.h.

* additional fee required

142 COURSES

949. *Principles of Community Health Practices*. An examination of various physiological, psychological, and sociological factors that influence community health. Prereq.: HSC 791 or equivalent. 3 q.h.
950. *Philosophy of Health Education*. An examination of the principles, values, and purposes of health education. Prereq.: Found. 901. 4 q.h.
951. *Advances in the Health Sciences*. Designed to provide students with an understanding of recent advances in the health sciences. Emphasis upon analysis of current research related to health promotion programs. Prereq.: HSC 755, 756 or equivalent. 4 q.h.
953. *Health Behavior*. A review of research studies and models which identify the factors influencing individual health behavior. Prereq.: HSC 949. 3 q.h.
954. *Pedagogy in Health Education*. Analysis of effective health teaching based on current research. Emphasis on planning, methodology, teaching behaviors, and evaluation. Prereq.: HSC 951 or Psych. 903. 4 q.h.
955. *Health Education Curriculum*. A study of curriculum development with emphasis on objectives, procedures, implementation, and evaluation. Prereq.: HSC 721 and 794 or equivalent. 4 q.h.
956. *Organization and Administration of Health Programs*. Principles of planning, implementing, evaluating, and administering programs in various health settings. Prereq.: HSC 948, 949 and 953. 3 q.h.
958. *Issues in Health and Health Services*. An examination of current philosophical, legal, and ethical issues related to health and the delivery of health services. Prereq.: HSC 948 and 949. 3 q.h.
959. *Foundations of Health Promotion*. A study of the history, philosophy, ethics and values in health promotion. 3 q.h.
960. *Program Planning and Evaluation for Health and Human Services*. Principles of planning and evaluation in health promotion including needs assessment, formulation of objectives, implementation and program evaluation techniques. Prereq.: HSC 959. 3 q.h.
961. *Implementing Health Promotion Programs*. Utilizing objectives, methods, resources and other promotional activities to implement health promotion programs. Students will be required to make presentations in a variety of community settings. Prereq.: HSC 960. 3 q.h.
999. *Thesis*. 1-8 q.h.
1010. *Seminar*. A synthesis of the role of education and management in health services. Emphasis on specific problems, concerns, or issues related to various work settings. Prereq.: HSC 956 and 958, and any research class. 2 q.h.
1015. *Research Practicum*. An individual investigation of a topic including analysis, design, and research under the direction of a graduate health faculty member with the approval of the health coordinator. Prereq.: HSC 1010. 4 q.h.

* additional fee required

History

William D. Jenkins, Chair of the Department
520 DeBartolo Hall
(330) 742-3452

808. *American Architectural History* (4 q.h.)

809. *Documentation and Interpretation of Historic Sites* (4 q.h.)

810. *The Conservation of the Historic Built Environment* (4 q.h.)

901. *Historical Literature: American*. Readings in the standard works and monographic studies to meet the requirements of qualified graduate students who wish intensive concentration in specific areas of American history. May be repeated with permission of instructor. 4 q.h.

902. *Seminar in American Colonial History*. Selected problems of early American history. May be repeated with permission of instructor. 4 q.h.

903. *Seminar in 19th-Century America I*. Selected problems of American history, 1800-1865. May be repeated with permission of instructor. 4 q.h.

904. *Seminar in 19th-Century America II*. Selected problems of American history, 1865-1900. May be repeated with permission of instructor. 4 q.h.

905. *Seminar in 20th-Century America*. Selected problems of American history in the 20th century. May be repeated with permission of instructor. 4 q.h.

906. *Historical Literature: European*. Readings in the standard works and monographic studies to meet the requirements of qualified graduate students who wish intensive concentration in European history. May be repeated with permission of instructor. 4 q.h.

912. *Seminar in Greek and Roman History*. The sources and problems of Greek and Roman history. May be repeated with permission of instructor. 4 q.h.

913. *Seminar in Medieval Culture and Society*. The main intellectual and social currents of the Middle Ages. May be repeated with permission of instructor. 4 q.h.

914. *Seminar in Renaissance and Reformation*. Trends and aspects of the Renaissance and Reformation. May be repeated with permission of instructor. 4 q.h.

915. *Seminar in 17th-Century Europe*. Dutch Commercial Enterprise; the France of Louis XIV; Austria and the Empire; emergence of Brandenburg-Prussia; rise of Modern Science; the Age of Reason; the Development of the Baroque in Arts and Literature. 4 q.h.

916. *Seminar in 18th-Century Europe*. Selected areas of the Enlightenment, Old Regime, and the French Revolution. May be repeated with permission of instructor. 4 q.h.

917. *Seminar in 19th-Century Europe*. The Napoleonic and post-Napoleonic era and the rise of nationalism in Europe. May be repeated with permission of instructor. 4 q.h.

918. *Seminar in 20th-Century Europe*. Investigation of the causes of the great world wars, the rise of totalitarianism, and the cold war. May be repeated with permission of instructor. 4 q.h.

144 COURSES

919. *Seminar in Russian History*. Selected problems of Russian history. May be repeated with permission of instructor. 4 q.h.
920. *Historical Literature: Asian*. Readings in the standard works and monographic studies to meet the requirements of qualified graduate students who wish intensive concentration in Asian history. May be repeated with permission of instructor. 4 q.h.
921. *Seminar in Asian History*. Selected problems in the political, social, economic, diplomatic, and intellectual history of traditional or modern East Asia. May be repeated with permission of instructor. 4 q.h.
922. *Seminar in British Empire*. An examination of major problems confronting the British Empire after 1783. May be repeated with permission of instructor. 4 q.h.
923. *Seminar in Middle Eastern History*. This course will deal with topics from the Ancient Near East down to the contemporary clash of nationalisms in the Middle East. May be repeated with permission of instructor. 4 q.h.
925. *Seminar in English History*. An examination of selected problems in the political, social, economic, and intellectual history of England. May be repeated with permission of instructor. 4 q.h.
931. *Research*. 1-9 q.h.
932. *Studies in the Teaching of History*. Investigation and discussion of the research and some of the underlying assumptions in the teaching of history, with implications for the teacher of social studies in the secondary schools and for the prospective history professor. Degree students may receive credit for this course only once. 4 q.h.
933. *Historic Preservation*. The history, theory, and method of historic preservation. 4 q.h.
934. *Practicum in Historic Preservation*. Examines problems in the field of historic preservation through student participation in a wide variety of community-based projects. Prepares students for internships outside the university. Prereq.: HIST 715 or 933, or instructor's permission. 4 q.h.
935. *Historic Preservation Internship*. Practical application of principles and methods in the field of historic preservation with the goal of producing a completed project. Internship to be selected by the student in conjunction with program director. Prereq.: HIST 715 or 933, and approval of internship committee. 4 q.h.
940. *Historical Literature: Latin American*. Readings in the standard works and monographic studies to meet the requirements of qualified graduate students who wish intensive concentration in Latin American history. May be repeated with permission of instructor. 4 q.h.
941. *Seminar in Latin American History*. Selected problems in the political, social, economic, diplomatic, religious, and cultural history of traditional or modern Latin America. May be repeated with permission of instructor. 4 q.h.
944. *Historical Literature: World*. Readings in the standard works and monographic studies to meet the requirements of qualified students who wish concentration in world history. May be repeated with permission of instructor. 4 q.h.
948. *Introduction to Historical Research*. Instruction in the basic tools and techniques of historical research and study. Required of all candidates for advanced degrees in history. 4 q.h.

949. *Historiography: American*. An introduction to the professional study of American history, including an examination of the sources and nature of historical knowledge, historical criticism, and synthesis. Required of all candidates for advanced degrees with concentration in the field of American history. 4 q.h.
950. *Historiography: European*. An introduction to the professional study of European history including an examination of the sources and nature of historical knowledge, historical criticism, and synthesis. Required of all candidates for advanced degrees with concentration in the field of European history. 4 q.h.
960. *Historical Literature: African*. Readings in the standard works and monographic studies to meet the requirements of qualified graduate students who wish intensive concentration in African history. May be repeated with permission of instructor. 4 q.h.
961. *Seminar in African History*. Selected problems in the political, social, economic, and intellectual history of Africa. May be repeated with permission of instructor. 4 q.h.
970. *Oral History*. Instruction in the methods of taking, processing, and utilizing oral depositions relating to history. The course will include assignments in the field. May be repeated once. 4 q.h.
980. *Independent Study*. Individual study in concentrated areas of history under the supervision of a staff member. Prereq.: Permission of the instructor and the graduate director. May be repeated to a maximum of 8 q.h. 1-4 q.h.

Human Ecology

Louise Pavia, Chair of the Department
3044 Cushwa Hall
(330) 742-3344

825. *Current Nutrition Concepts* (4 q.h.)
830. *Homemaker Rehabilitation* (4 q.h.)
862. *Food and Culture* (3 q.h.)
862L.* *Cultural Foods Laboratory* (1 q.h.)
866. *Administration of Prekindergarten Programs* (4 q.h.)
870. *Human Ecology Workshop* (2-4 q.h.)
872. *Maternal and Child Nutrition* (4 q.h.)
873. *Nutrition and Aging* (4 q.h.)
890. *Occupational Family and Consumer Sciences Education* (3 q.h.)
892. *Community Programming in Human Ecology* (4 q.h.)
895. *International Studies in Human Ecology* (2-6 q.h.)
902. *Nutrition Education*. Examination of common nutrition assumptions and claims, techniques in teaching nutrition, development of teaching materials and plans, emphasizing integration into existing courses. Prereq.: Four quarter hours in teaching methods or equivalent. 3 q.h.
904. *Family Life Education*. Focus on current issues and challenges impacting on families, investigation of literature and application of theory; development of techniques and materials for teaching family relationships and child development at various grade levels. Prereq.: Eight quarter hours of child and/or family studies. 4 q.h.

* additional fee required

146 COURSES

908. * *Problems in Apparel Design*. Advanced techniques in developing patterns and designing apparel. To meet students' needs, emphasis will be placed on tailoring, flat pattern design, and/or draping. Each student will construct a garment. Prereq.: HE 703 or equivalent. 4 q.h.
910. *Special Topics in Human Ecology*. Issues and problems of current interest chosen on the basis of need. Prereq.: HE 731 or equivalent. 2-4 q.h.
925. *Current Concepts in Nutrition*. Role of diet in disease prevention/health promotion; relationship of specific dietary factors to the occurrence of chronic diseases; current recommendations for nutrient intake and diet pattern for reducing the risk of chronic diseases and disabilities. Prereq.: FNUTR 760 or permission of instructor. 4 q.h.
950. *Readings in Home Economics*. Individual investigation of a special topic; annotated bibliography required. Prereq.: Departmental approval. May be repeated for up to 4 q.h. 1-2 q.h.
999. *Thesis*. 1-8 q.h.

Human Performance and Exercise Science

Richard Walker, Chair of the Department
307 Beeghly Physical Education Center
(330) 742-3654

894. *Workshop in Physical Education/Athletics* (1-4 q.h.)
900. *Pedagogy in Physical Education*. Description and analysis of teacher behaviors in physical education with emphasis on teaching methodology, the improvement of teaching skills, and planning for maximum student participation. 3 q.h.
901. *Sport in Society*. Sport studied as a social system interdependent with culture and society and as a social institution which is related to, or a part of, other basic institutions such as the family, education, religion, the economy, politics, and the mass media. Prereq.: HPES 850 or 855. 4 q.h.
903. *Physical Education Curriculum*. Analysis and progressive development of the physical education curriculum for kindergarten through grade 12. Includes content and program planning. Prereq.: HPES 766, 767 and 768, or equivalents. 3 q.h.
905. *Current Literature in Physical Education*. A critical analysis of recent literature and research in physical education. Readings are organized around problems significant to present-day physical education. Prereq.: Found. 904 or equivalent. 3 q.h.
910. *Teaching of Motor Skills*. Analysis of research on motor learning and its application to the acquisition, the teaching, and the coaching of movement skills. Prereq.: HPES 795 or equivalent. 4 q.h.
920. *Mechanical Analysis of Motor Movements*. Scientific basis for teaching correct form for the exact execution of movement skills through the fundamental laws of physics pertaining to motion. Analysis of various motor activities to determine the proper mechanics for obtaining the most effective and efficient results. Prereq.: HPES 795 or equivalent. 4 q.h.

* additional fee required

930.* *Laboratory Instrumentation*. A laboratory course designed to provide instruction and practical experience in operating laboratory equipment for the measurement of physiological parameters in the human. Two hours lecture and two hours laboratory per week. Prereq.: HPES 896 or equivalent. 3 q.h.

935. *Biodynamics and Human Performance*. The physiology of human exercise responses to various stress conditions such as environmental, psychosocial, disease, and maximal performance. Prereq.: HPES 896 or equivalent. 3 q.h.

940. *Administration of Exercise Programs*. Designed to provide guidelines for graded exercise stress testings and exercise prescription programs. Included are behavioral objectives for physicians, program directors, exercise leaders, and exercise technicians. Course guidelines for exercise programs are those established by the American College of Sports Medicine. Prereq.: HPES 896 or equivalent. 2 q.h.

990. *Independent Study*. Individual study and projects under faculty supervision. Prereq.: Permission of instructor and department Chair. May be repeated to a maximum of 4 q.h. 1-4 q.h.

Industrial and Systems Engineering

Hojjat Mehri, Chair of the Department
235 Engineering Science Building
(330) 742-3024

801. *Operations Research I* (4 q.h.)

825. *Advanced Engineering Economy* (4 q.h.)

850. *Operations Research II* (4 q.h.)

901. *Optimization Techniques*. A study of the theory of optimization and its application to problems from several engineering disciplines. The principles of optimization will be applied to constrained and unconstrained engineering problems. Algorithms will be developed for solving optimization problems that can be formulated as linear, nonlinear, integer, or dynamic programming models. Prereq.: Math 674. 4 q.h.

902.* *Digital Simulation*. A study of simulation methods using digital computers, random number generation, Monte Carlo techniques, queuing models, and analysis of simulation output will be presented. The student will be provided the opportunity to simulate moderately complex systems on digital computers. Primary emphasis will be on models of technical, scientific, and economic systems. Prereq.: Math 674. and In.Eng. 642 or consent of instructor. 4 q.h.

903. *Engineering Statistics*. Development and application of stochastic models of engineering systems. Elementary probability models applied to decision making under uncertainty. Development and use of theoretical probability distributions for describing stochastic systems. Models for point and confidence interval estimation and models for correlation analysis applied to engineering problems. Prereq.: Math 674. 4 q.h.

930. *Microcomputer Models of Deterministic Engineering Systems*. Microcomputer model development, implementation, evaluation, and application for deterministic engineering systems. Recognition of

* additional fee required

engineering systems amenable to analysis as deterministic microcomputer models. Determination of model structure; identification of model parameters; verification of model validity; exercising the model; and interpretation of results. Prereq.: In.Eng. 642 and Math 705. 4 q.h.

Management

Rammohan R. Kasuganti, Chair of the Department
646 Williamson Hall
(330) 742-3071

825.* *Microcomputers in Business* (4 q.h.)

835.* *Systems Analysis* (4 q.h.)

851. *Problems in Industrial Management* (3 q.h.)

860. *Comparative Management* (4 q.h.)

865.* *Database Management Systems* (4 q.h.)

875.* *Decision Support/Expert Systems* (4 q.h.)

890. *International Business* (4 q.h.)

900. *The Foundation of Management*. A study of the fundamental concepts and functions of management. Each functional area is analyzed and the interrelationship of the functions emphasized. Topics such as organization design, authority-power relationships, control systems, group behavior, participative management, span of control, etc., will be covered. (Not applicable toward M.B.A.) 3 q.h.

901. *Foundations of Management and Marketing* (same as Marketing 901). A study of the fundamental concepts and functions of management and marketing. (Available to E.M.B.A. students only; a pre-E.M.B.A. course.) 4 q.h.

915. *Research Methodology*. Nature, methods, and techniques of research in management; to include the scientific method in business; sampling theory, variable analysis, and research problems applying these techniques. Prereq.: Econ. 900, Acct. 601 and Mgmt. 900, or equivalents. 4 q.h.

916. *Quantitative Analysis for Business Decisions*. The application of mathematical models to managerial decision-making with emphasis on problem formulation, sensitivity analysis, and other aspects of model interpretation. Prereq.: Econ. 900, Mgmt. 900, or permission of instructor. 4 q.h.

917. *Management Information Systems*. Present concepts required for the design, implementation, and utilization of management information systems. The primary emphasis of this course will be development of a total information system for executive-level planning and decision-making. Will deal with modern systems concepts and tools; design and scheduling; computer application in integrated systems. Prereq.: Acct. 601 and Mgmt. 900, or equivalents. 4 q.h.

918. *Business System Simulation*. Simulation as a decision-making technique useful for studying complex business systems. Involves building and validating a model to represent the business system under study and simulating the behavior of the model. The application of simulation to a variety of business problems is covered. Prereq.: Acct. 601 and Mgmt. 900, or equivalents. 4 q.h.

921. *Operations Management I*. Product design and selection, process planning, plant location, plant layout, methods study and labor standards, forecasting, aggregate planning and master scheduling, inventory control, scheduling, quality control. Prereq.: Mgmt. 900 or equivalent, and Mgmt. 916. 4 q.h.

* additional fee required

951. *Theory of Organization*. A macro-level approach to study of the organizing function. Open and closed system strategies are utilized in studying organizations. Explores the impact of strategy, technology, contingencies, and conflict on organization structure and form. Prereq.: Mgmt. 900 or equivalent. 4 q.h.
952. *Management Theory and Thought*. Modern management thought and theory by an analysis and study of the 19th- and 20th-century literature. Prereq.: Mgmt. 900 or equivalent. 3 q.h.
954. *International Management*. Planning, organizing, and control within the context of a multinational corporation, with emphasis upon problems of adaptation to different sociological, cultural, legal, political, and economic environmental characteristics. Prereq.: M.B.A. core. 4 q.h.
961. *Organizational Behavior*. The study of the behavior of individuals and groups in organizations. Major theoretical positions and research findings are examined with emphasis on the implications for organizational design and management practice. Prereq.: Econ. 900 or equivalent and Mgmt. 915. 4 q.h.
962. *Organizational Staffing Process*. Brief survey of the field of human resource management, followed by intensive analysis of programs for personnel acquisition, maintenance, and development. Emphasis on determination of organizational needs and the development and effective utilization of available human skills and competencies. Examination of applicable federal and other employment legislation. Prereq.: Mgmt. 900 or equivalent. 4 q.h.
963. *Industrial Relations*. Analysis of managerial and organizational aspects of employee relations arising out of relations with union negotiation, and application of contracts, living with contracts, and pertinent legislative matters. Prereq.: Mgmt. 900 or equivalent. 4 q.h.
964. *Compensation Management*. Development and maintenance of compensation and benefits programs. Wage and salary determination, job evaluation and pricing, incentives, managerial and executive compensation. 4 q.h.
965. *Business Policy*. The correlation of theory and practice in the development of business policy. Emphasis on the problems of executive management, decision making, and administrative action. Prereq.: Completion of all M.B.A. degree core courses. 4 q.h.
966. *Operations Management II*. Advanced topics in production planning and control. The major emphasis is on case studies and individual projects. Prereq.: Mgmt. 921 or equivalent. 4 q.h.
968. *Special Topics in Management*. Topics may vary from quarter to quarter and will be announced along with prerequisites and hours. May be repeated. 1-3 q.h.
969. *Seminar in Management*. Analysis of long-range planning, organizational development, systems management, executive decision making, organizational behavior, control systems, and others. Prereq.: Mgmt. 961. 3 q.h.
971. *Business and Society*. Complex and dynamic interrelationships between business and society: social, cultural, legal, ethical, economic and technological issues, philosophies and points of view which influence business. Prereq.: Mgmt. 900 or equivalent. 4 q.h.
996. *Research Problems*. Special projects undertaken by M.B.A. students under the direction of faculty members of professorial rank. The exact number to be used will be determined by the nature of

* additional fee required

150 COURSES

- the project. Credit will be determined in each case in light of the nature and extent of the project. 1-6 q.h.
998. *Thesis*. 6 q.h.

Marketing

E. Terry Deiderick, Chair of the Department
534 Williamson Hall
(330) 742-3080

900. *Foundations of Marketing*. A basic examination of marketing as a business process by which products are matched with markets and through which transfers of ownership are effected. This course satisfies the appropriate prerequisite requirement for the M.B.A. degree. (Not applicable toward the M.B.A.) 3 q.h.
901. *Foundations of Management and Marketing* (same as Management 901). A study of the fundamental concepts and functions of management and marketing. (Available to E.M.B.A. students only; a pre-E.M.B.A. course.) 4 q.h.
915. *Research Techniques*. Nature, methods, and techniques of research and the use of research by management; the scientific method in business, sampling theory, variable analysis, and research cases. 3 q.h.
941. *Marketing Theory*. A critical appraisal of emerging marketing concepts, their development, acceptance, and expected future direction; focus on the role of marketing in the overall economy rather than within the firm. Prereq.: Mktg. 900 or equivalent. 3 q.h.
- 942.* *Marketing Administration*. A managerial approach, emphasizing the integration of marketing as an organic activity with other activities of the business firm. By case analysis and consideration of current marketing literature, students are provided the opportunity to develop marketing management abilities. Prereq.: Mktg. 900 or equivalent. 4 q.h.
- 943.* *Physical Distribution Management*. Problems encountered in the movement of goods from the end of the production line to the ultimate consumer; consideration of total distribution and its application in the design and reconstruction of distribution systems. The relationships between materials handling, warehousing, inventory carrying, and transportation costs are explored together with methods of analysis designed to disclose optimum combinations. Prereq.: Mktg. 900 or equivalent. 4 q.h.
- 944.* *Product Management*. The search for new product ideas and their evaluation; the organizational structure necessary to the development and introduction of new products and the management of a product line; the commercial aspects of product design, packaging, labeling, and branding; considerations involved in making product deletion decisions. Prereq.: Mktg. 900 or equivalent. 3 q.h.
945. *Marketing Communications*. Consideration of behavioral science approaches to mass and interpersonal communication and audience behavior. Psychological and sociological data are introduced in relationship to the promotional strategy of marketing communication with emphasis on the dynamics of advertising and selling. Prereq.: Mktg. 900 or equivalent. 3 q.h.

* additional fee required

946. *Consumer Behavior.* The analysis of behavior of consumers both in groups and as individuals in order to assist the marketing manager in such areas as selection of target segments, advertising and media selection, personal selling, product development, marketing research, pricing, and distribution policies. In addition to business writings, relevant material from psychology, sociology, economics, and anthropology will be utilized to familiarize the student with the behavior of the consumer in the market place. Prereq.: Mktg. 900 or equivalent. 4 q.h.

947. *Marketing and Social Responsibility.* Current marketing problems created by emerging social, environmental, and consumer pressures and the need to balance consumer satisfaction, profits, and social responsibility. Topics include selling practices, product safety, consumerism, environmental issues, disadvantaged market segments, product quality, consumer advocates, and social critics. Prereq.: Mktg. 900 or equivalent. 3 q.h.

948. *Market Planning and Demand Analysis.* An in-depth study of forecasting and demand analysis techniques and their role in marketing planning and strategy formulations. Application of regression and correlation analysis, historical trend projection, model-based forecasting, and market survey methods. Extensive use will be made of computer-based forecasting models. Prereq.: Mgmt. 915, Mktg. 900 or equivalent, or permission of instructor. 4 q.h.

949. *International Marketing Management.* The functions, problems, and decision-making processes of marketing executives in business organizations involved in foreign markets are studied. Students are given the opportunity to develop foreign market evaluations applying classroom knowledge to practical decision problems. Involvement of the student on an individual basis is stressed. Prereq.: Mktg. 942 or equivalent. 4 q.h.

950. *Marketing Research and Analysis.* The use of focus groups, store and diary panels, listenership, recall and test market studies, and other marketing research methods for collecting consumer and market data. Data are analyzed and evaluated utilizing univariate and multivariate techniques to assist marketing decision-making. Prereq.: Mgmt. 915, Mktg. 942. 4 q.h.

968. *Special Topics in Marketing.* Topics may vary from quarter to quarter and will be announced along with prerequisites and hours. Course may be repeated. 1-3 q.h.

996. *Research Problems.* Special projects undertaken by M.B.A. students under the direction of faculty members of professorial rank. The exact number to be used will be determined by the nature of the project. Credit will be determined in each case in light of the nature and extent of the project. 1-6 q.h.

998. *Thesis.* 6 q.h.

Public Relations

950. *Theory and Practice of Public Relations.* A study, analysis, and evaluation of policies and programs designed to identify an organization with the public interest and to gain public understanding and support. 3 q.h.

Advertising

955. *Theory and Practice of Advertising.* A study, analysis, and evaluation of advertising objectives relating to media selection, creative function, campaigns, and research for decision making and control. Prereq.: Mktg. 941 or 942 or permission of instructor. 3 q.h.

Materials Science

Robert A. McCoy, Director of the Program
216 Engineering Science Building
(330) 742-1735

Materials Engineering

820, 821. *Principles of Extractive Metallurgy I, II* (4+4 q.h.)

855. *Composite Materials* (4 q.h.)

861.* *X-Ray Diffraction and Electron Microscopy* (4 q.h.)

864. *Thermodynamics of Materials II* (4 q.h.)

865. *Advanced Science of Materials* (4 q.h.)

866. *Special Topics* (4 q.h.)

867.* *Fractography and Failure Analysis* (4 q.h.)

868.* *Scanning Electron Microscopy of Engineering Materials* (4 q.h.)

871. *Physical Metallurgy IV* (4 q.h.)

872. *Refractory Metals and Alloys* (4 q.h.)

887. *Metallurgical Design* (4 q.h.)

901. *Fundamentals of Materials Science*. Fundamental nature of solid materials. Atomic characteristics, electronic properties, crystal and molecular structures of metallic, ceramic, and polymer materials. (Not intended for majors with an undergraduate degree in materials engineering.) 4 q.h.

901L.* *Experimental Methods in Materials Engineering*. Modern laboratory techniques used to examine and analyze materials. Included are: metallographic methods, X-ray diffraction, and electron microscopy. 1 q.h.

903. *Structural Properties/Characteristics of Materials*. Relationships between fundamental characteristics of materials and their engineering properties. Both structure-sensitive and structure-insensitive properties will be discussed. 4 q.h.

904. *Mechanical Properties/Characteristics of Materials*. Advanced mechanical properties of materials. Relationships between fundamental and practical properties will be discussed. 4 q.h.

915.* *Failure Analysis*. Advanced methods in failure analysis of metallics, ceramics, polymers, and composites. Numerous practical examples will be discussed. Individual student projects using SEM are required. Three hours lecture and three hours laboratory. Prereq.: Mat.Eng. 904. 4 q.h.

924. *Polymers Theory, Design, and Applications*. Emphasis will be on relationships between molecular structure and processing, and the mechanical behavior of polymers. 4 q.h.

925. *Composites Theory, Design, and Applications*. Theoretical considerations of composite properties; design and use of composites. 4 q.h.

930. *Electronic and Magnetic Materials*. Atomic and electronic properties of semiconductors, ferri-electrics, piezoelectric, lasers, and magnetic materials will be discussed. Processing techniques also included. 4 q.h.

970. *Manufacturing Process Methods I*. Advanced manufacturing processing for metallic materials. Included are continuous casting, powder techniques, fluidized bed reactors, and directional solidification. 4 q.h.

* additional fee required

971. *Manufacturing Process Methods II*. Advanced manufacturing processing for nonmetallic materials. Included are sintering, slip-casting, plastic forming techniques, and extrusion of nonplastic materials. 4 q.h.
973. *Nuclear Materials, Properties, and Radiation Effects*. Nature of materials used in the nuclear industry. Effects of neutron radiation on properties of these materials emphasized. 4 q.h.
975. *Special Topics in Materials Science*. Advanced topics in materials science. May not be repeated for credit toward the degree. 4 q.h.
976. *Modern Research Techniques in Materials Science*. Advanced methods used in experimental materials science. Included are X-ray and electron microscopy and quantitative metallography techniques. (Required for nonthesis students.) 4 q.h.
980. *Materials Design Industrial Problems*. Design problems in materials engineering. Open-ended solutions to industrial problems required. 4 q.h.
- 990, 991. *Thesis I and II*. 2-4+2-4 q.h.
- 995.* *Graduate Project*. An independent investigation by a graduate student under the direction or approval of the graduate faculty advisor. The investigation could involve data analysis, preparation of computer programs, or the design of laboratory experiments. A written report will be required. Credit will vary with the nature and scope of the project. 1-3 q.h.

Mathematics

John J. Buoni, Chair of the Department
 1055 Cushwa Hall
 (330) 742-3302

825. *Advanced Linear Algebra* (4 q.h.)
 827. *Abstract Algebra III* (4 q.h.)
 828. *Number Theory* (4 q.h.)
 830. *Projective Geometry* (4 q.h.)
 838. *Graph Theory and Algorithms* (4 q.h.)
 841. *Mathematical Statistics II* (4 q.h.)
 842. *Statistical Decision Theory* (4 q.h.)
 843. *Theory of Probability* (4 q.h.)
 845. *Operations Research I* (4 q.h.)
 855. *Ordinary Differential Equations 2* (4 q.h.)
 860. *Mathematical Logic* (4 q.h.)
 861.* *Numerical Analysis II* (4 q.h.)
 872. *Multivariable Analysis III* (4 q.h.)
 875. *Introduction to Complex Variables* (4 q.h.)
 880. *Introduction to Topology* (4 q.h.)
 890. *Mathematics Seminar* (2 q.h.)
 895. *Selected Topics in Mathematics* (May be repeated once.) (2-5 q.h.)

* additional fee required

154 COURSES

901. *Topics in Analysis*. A course in analysis aimed at developing a broad understanding of the subject. Prereq.: Departmental permission. 5 q.h.
902. *Topics in Modern Algebra*. A course in modern algebra aimed at developing a broad understanding of the subject. Prereq.: Departmental permission. 5 q.h.
903. *Topics in Geometry*. A course in Euclidean and projective geometry with emphasis on projective spaces of dimensions one and two, especially designed to develop a broad understanding of the subject. Prereq.: Departmental permission. 4 q.h.
905. *Mathematical Foundations*. An introduction to the order-theoretic foundations of mathematics. Emphasis on ordered structures and topologies, including the powerset operators of a function and their applications to continuity, compactness, and analysis. Prereq.: Math 752 or 901 or permission of instructor. 4 q.h.
- 910, 911. *Advanced Engineering Mathematics I, II*. A presentation of methods in applied mathematics. Selected topics may include differential equations, infinite series, linear spaces and operators, matrices and determinants, functions of a complex variable, special functions of mathematical physics, operational calculus, and partial differential equations. Emphasis is placed on applications to engineering. Prereq.: Math 705 or permission of instructor. 4+4 q.h.
- 920, 921. *Modern Algebra I, II*. The first course is a study of algebraic structures, substructures; morphisms; and quotient structures, followed by advanced topics in group theory or an introduction to field extensions. The second course is a continuation of this material followed by Galois Theory. Prereq.: Math 825 or permission of instructor. 4+4 q.h.
- 925, 926.* *Advanced Numerical Analysis I, II*. Topics covered include eigenvalue-eigenvector analysis, boundary value problems, and approximation methods for partial differential equations. Prereq.: Math 725, 760, a knowledge of FORTRAN or Pascal programming, and either Math 861, 901 or permission of the instructor. 4+4 q.h.
928. *Number Theory II*. An advanced study of number theory. Topics to be selected from the theory and distribution primes, computational number theory, and additive number theory. Prereq.: Math 828. 4 q.h.
930. *Differential Geometry*. The classical differential geometry of curves and surfaces, with tensors. Prereq.: Math 705 and 872. 4 q.h.
933. *Geometry*. General theory of incidence structures and modern geometric theories. Prereq.: Math 725, 902 and either 830 or 903. 4 q.h.
938. *Combinatorics*. Enumerative analysis, generating function, Mobius inversion and Polya counting; incidence structures. Prereq.: Math 838 and either 722 or 902. 4 q.h.
942. *Operations Research II*. An advanced study of operations research. Topics may include integer programming, advanced linear programming, nonlinear programming, dynamic programming, queuing theory, Markov analysis, game theory, and forecasting models. Prereq.: Math 743 and 845. 4 q.h.
- 945, 946. *Stochastic Processes I, II*. A study of Markov chains, Poisson processes, Wiener processes, and renewal processes with applications to queuing and traffic, system reliability, epidemics, inventory, and time series. Prereq.: Math 725, 752, and either 815 or 843, or permission of instructor. 4+4 q.h.

* additional fee required

- 948, 949. * *Analysis of Variance I, II*. A study of linear statistical models of the relationship between analysis of variance and regression and of the assumptions underlying the analysis of variance. Prereq.: Math 725 and 841, or permission of instructor. 4+4 q.h.
950. *Infinite Series*. An extensive treatment of convergent and divergent series including a strong emphasis on summability methods of divergent series. Prereq.: Math 752. 4 q.h.
952. *Advanced Differential Equations*. Theory of differential equations including a study of fundamental existence and uniqueness theorems for solutions. Further topics selected from phase plane analysis, stability theory, boundary value problems, partial differential equations, integral equations, applications. Prereq.: Math 705, 725, and 752, or permission of instructor. 4 q.h.
960. *Mathematical Logic II*. A study of the elements of recursive function theory and topics such as Godel's incompleteness theorem and decision problems for theories. Prereq.: Math 860 or permission of instructor. 4 q.h.
- 965, 966, 967. *Abstract Analysis I, II, III*. Lebesgue integration and measure on the real line. General measure theory and functional analysis, including the Radon-Nikodým theorem, the Fubini theorem, the Hahn-Banach theorem, the closed graph and open mapping theorems, and weak topology. Prereq.: Math 872 for 965; 965 and either 880 or 905 for 966; 966 for 967; or permission of instructor. 4+4+4 q.h.
- 975, 976. *Complex Analysis I, II*. A course in classical complex analysis. The Cauchy theorem, the Weierstrass, Mittag-Leffler, Picard, and Riemann theorems, Riemann surfaces, harmonic functions. Prereq.: Math 752 and 875. 4+4 q.h.
- 980, 981. *Topology I, II*. A further study of topological spaces. Separation, metrization, compactification. Additional topics will be selected from point-set topology, algebraic topology, combinatorial topology, topological algebra. Prereq.: Math 880. 4+4 q.h.
990. *Independent Study*. Study under the supervision of a staff member. Prereq.: Permission of the department Chair. May be repeated. 1-5 q.h.
995. *Special Topics*. Special interest topics selected by the staff. Prereq.: Permission of instructor and department Chair. May be repeated to a maximum of 12 q.h. 1-5 q.h.
996. *Mathematical Projects*. Individual research projects culminating in a written report or paper, not as broad in scope as a thesis. May be repeated once if the project is in a different area of mathematics. 2-4 q.h.
999. *Thesis*. A student may register for 6 q.h. in one quarter or for 3 q.h. in each of two quarters. 3-6 q.h.

Mechanical Engineering

Hyun W. Kim, Chair of the Department
 238 Engineering Science Building
 (330) 742-1731

825. * *Heat Transfer II* (4 q.h.)
 830. * *Fluid Mechanics* (4 q.h.)

* additional fee required

156 COURSES

843.* *Kinetics of Machinery* (4 q.h.)

852.* *Stress and Strain Analysis II* (4 q.h.)

862. *Human Factors in Mechanical Design* (4 q.h.)

870.* *Mechanical Vibrations* (4 q.h.)

872.* *Engineering Acoustics* (4 q.h.)

884.* *Finite Element Analysis Applied to Design* (4 q.h.)

892.* *Control Theory* (Not for Electrical Engineering majors.) (4 q.h.)

900. *Special Topics*. Special topics and new developments in mechanical engineering. Subject matter and credit hours to be announced in advance of each offering. Prereq.: As announced, or permission of instructor. May be taken three times. 2-5 q.h.

904. *Advanced Thermodynamics*. Laws of equilibrium thermodynamics; relations between properties and aspects of the Second-Law. Macroscopic and microscopic considerations for the prediction of properties. Microscopic description based on classical and quantum statistics. General stability criteria, statistical equilibrium, and trend toward equilibrium fluctuations. 4 q.h.

922. *Advanced Heat Transfer*. Governing equations and boundary conditions. Analytical solutions to selected problems from conduction, convection, and radiation. Energy transfer by combined modes of heat transfer. Selected topics dealing with techniques used in the solution of practical engineering problems. Prereq.: Mech.Eng. 725 or equivalent. 4 q.h.

925.* *Computational Heat Transfer*. Numerical modeling techniques and methods in heat transfer. Computational analysis of conduction and convection by the finite element method, finite difference method, and the method of coordinate transformation. Prereq.: Mech.Eng. 725 and Math 706, or equivalents. 4 q.h.

930. *Advanced Fluid Mechanics*. Fundamentals of viscous and inviscid flows. Navier-Stokes equations and their application in viscous flow problems. Euler equations. Introduction of complex variables and their application to inviscid flows. Computer applications. Prereq.: Mech.Eng. 830 or equivalent. 4 q.h.

935. *Theoretical and Experimental Aerodynamics*. Analysis of external and internal flow around streamline and bluff bodies by computational flow modeling. Experimental analysis using wind tunnel testing of models and flow visualization. Aerodynamics of road vehicles and lifting bodies. Prereq.: Mech.Eng. 830 or equivalent. 4 q.h.

945.* *Advanced Dynamics*. Three-dimensional vector statics; kinematics and kinetics of particles and rigid bodies; energy, momentum, stability. LaGrange's equations of motion for particles and rigid bodies impulse; small oscillations; non-holonomic and dissipative systems. 4 q.h.

952. *Applied Elasticity*. Equations of equilibrium, compatibility and boundary conditions; their applications to plane-stress and plane-strain problems. Stress functions, strain energy methods, stress distribution in axially symmetrical bodies; special problems in structures involving torsion and bending of prismatical bars. Prereq.: Mech.Eng. 751 or equivalent. 4 q.h.

955. *Applied Plasticity*. Equations for yield criteria and stress-strain relations; their application to elasto-plastic and fully plastic problems considering strain hardening. Introduction to limit analysis and creep. Prereq.: Mech.Eng. 952. 4 q.h.

962.* *Mechanical Design Analysis*. The study of analytical aspects and the application of engineering science topics to machine elements and machinery. Some case studies in mechanical design. 4 q.h.

* additional fee required

963. * *Experimental Stress Analysis*. Theory and engineering applications of the most recent techniques of experimental stress analysis; brittle coatings, photoelasticity, strain gauges, photostress. Prereq.: Mech.Eng. 751 or equivalent. 4 q.h.
982. *Advanced Engineering Analysis*. An integration of the fundamental laws and principles of basic science to obtain practical solutions of engineering problems. Formulation of mathematical models for complex physical situations and the organization of computational programs for their solutions. Examples of lumped and distributed parameter systems chosen from the areas of mechanics, thermodynamics, heat transfer, and electrical circuit theory. Prereq.: Mech.Eng. 781 or equivalent. 4 q.h.
986. *Theory of Continuous Medium*. General discussion of Cartesian tensors. Application of tensor theory to elasticity, fluid flow, and dynamics. General analysis of continuous medium. 4 q.h.
990. *Thesis*. 2-9 q.h.
991. *Thesis*. 2-9 q.h.
992. *Graduate Projects*. Analysis, design, research, or other independent investigation on projects selected with the advice and approval of the student's graduate committee. 4 q.h.

Music

Joseph Edwards, Chair of the Department
3000 Bliss Hall
(330) 742-3636

- 800 A, B, C. *Performance Minor* (1+1+1 q.h.)
- 801, 802, * 803. *Performance Minor* (2+2+2 q.h.)
814. *Selected Topics in Music Education* (2 q.h.)
- 820, 821, 822. *Composition* (2+2+2 q.h.)
830. *Materials of Twentieth-Century Music* (3 q.h.)
831. *Modal Counterpoint* (3 q.h.)
832. *Tonal Counterpoint* (3 q.h.)
833. *Theory Seminar* (3 q.h.)
834. *Electronic Music I* (3 q.h.)
835. *Electronic Music II* (2 q.h.)
840. *Instrumentation* (4 q.h.)
841. *Music Workshop* (Repeatable to a maximum of 8 q.h. for degree credit.) (1-4 q.h.)
851. *Woodwind Pedagogy* (2 q.h.)
852. *Woodwind Literature* (3 q.h.)
- 858, 859. *Piano Pedagogy* (2+2 q.h.)
860. *Piano Literature* (3 q.h.)
869. *Organ Literature* (3 q.h.)
871. *Baroque Music* (3 q.h.)
872. *Eighteenth-Century and Viennese Classical School* (3 q.h.)
873. *Opera History* (3 q.h.)
874. *Nineteenth-Century Romantic Period* (3 q.h.)
878. *Selected Topics in Music History* (3 q.h.)

* additional fee required

158 COURSES

879. *Vocal Literature* (3 q.h.)

880. *Vocal Pedagogy* (2 q.h.)

882. *String Pedagogy* (2 q.h.)

884. *History and Literature of Brass Instruments* (3 q.h.)

885. *Brass Pedagogy* (2 q.h.)

887-888-889. *Piano Duet and Duo Playing* (1+1+1 q.h.)

890, 891, 892. *Chamber Music with Piano* (1+1+1 q.h.)

Music Performance

For Music Performance majors in the following areas:

Brass Instruments: baritone horn, French horn, trombone, trumpet, tuba

Conducting

Keyboard Instruments: harpsichord, organ, piano

Percussion Instruments

String Instruments: guitar, string bass, viola, violin, violoncello

Voice

Woodwind Instruments: bassoon, clarinet, flute, oboe, saxophone

1) Assignments of students to teachers are made by the coordinators of Keyboard, Voice, String, Woodwind, Brass, and Percussion Studies. Requests for change of teacher should be addressed to them.

2) Students registered for 4-quarter-hour courses receive 50 minutes of individual instruction weekly and practice three hours daily. Students registered for 3-quarter-hour courses receive 50 minutes of individual instruction weekly and practice two hours daily. Students registered for 2-quarter-hour courses receive 50 minutes of individual instruction weekly and practice one hour daily. Students registered for 3-quarter-hour and 4-quarter-hour courses are also required to attend the weekly seminars held by their individual instructors.

3) Students in the performance major course (907-908-909) must present a public recital of at least 50 minutes of music. The pre-recital hearing must be held during the quarter in which the student is enrolled in Music 909. The supporting document must be completed during the quarter in which the student is enrolled in Music 908. In the event that the paper is not completed during the 908 quarter or the recital hearing is not completed during the 909 quarter, a PR grade will be issued for the course. Further information is available from the faculty member in charge of graduate studies in music.

4) Students who fail to meet the standards of the faculty in the area of their performance study may be required to reduce the number of credit hours for which they register in subsequent quarters, or they may be required to withdraw completely from the course sequence.

901-902-903. *Performance Minor.* For music education majors. Students receive 50 minutes of individual instruction weekly and practice one hour daily. Prereq.: Music 609 or equivalent.
2+2+2 q.h.

904-905-906. *Performance Concentration.* Music performance through individual instruction. Students receive 50 minutes of individual instruction weekly, practice two hours daily, and are required to attend the weekly seminars held by their individual instructors. Prereq.: Music 709 or equivalent.
3+3+3 q.h.

* additional fee required

907-908-909*. *Performance Major*. For music performance majors. Students receive 50 minutes of individual instruction weekly, practice three hours daily, and are required to attend the weekly seminars held by their instructors. Prereq.: Music 809 or equivalent. 4+4+4 q.h.

Music Theory and Composition

904, 905, 906. *Advanced Composition*. Individual instruction in the composition of larger forms for chorus, orchestra, or chamber ensembles. Prereq.: Consent of instructor. 3+3+3 q.h.

913. *Pedagogy of Theory*. The study and critical analysis of methods for teaching harmony, sightsinging, and ear-training. 3 q.h.

916. *Fugue*. Analysis of the fugal style used in seventeenth-century trio sonatas and in both volumes of *The Well-Tempered Clavier* by J.S. Bach, writing three to four voice fugues employing imitative and invertible counterpoint. Prereq.: Music 831 Tonal Counterpoint or 832 Modal Counterpoint. 3 q.h.

920, 921, 922. *Seminar in Materials of Music*. The study of techniques used in musical composition with emphasis in analyzing and writing. Course requirements will be determined by student's field of interest. Admission to course by permission of instructor. Can be repeated for credit. 3+3+3 q.h.

930. *Baroque Music Styles*. Stylistic and structural analysis of compositions from the Baroque era. 3 q.h.

931. *Classic Music Styles*. Stylistic and structural analysis of compositions from the Classic era. 3 q.h.

932. *Romantic Music Styles*. Stylistic and structural analysis of compositions from the Romantic era. 3 q.h.

933. *20th-Century Music Styles*. Stylistic and structural analysis of compositions from the 20th Century. 3 q.h.

Music History

940. *Music in the Middle Ages*. The development of polyphonic music early organum to c. 1450, with emphasis on techniques, styles, and forms. Seminar, with readings, reports, and musical illustrations. 3 q.h.

941. *Music in the Renaissance*. Musical developments from c. 1450-1600 dealing with the vocal music of this period, both sacred and secular, and the formulation of independent instrumental styles. Seminar, with readings, reports, and musical illustrations. 3 q.h.

942. *Introduction to Music Bibliography*. Fundamental concepts in bibliographic control with emphasis on the functional and analytic approach to bibliography. 3 q.h.

943. *Seminar in Musicology*. An examination of select problems in musicology. May be repeated with permission of instructor. 3 q.h.

* additional fee required

160 COURSES

950. *Conducting Pedagogy*. The study and critical analysis of methods for teaching conducting. Prereq: One quarter of applied conducting study. 2 q.h.

Music Education

970. *Foundations of Music Education*. An examination of basic principles and techniques of music instruction; contemporary trends viewed from historical perspective. 3 q.h.

971. *Administration and Supervision in Music Education*. The functions and techniques of music supervision and administration; improvement of instruction; problems of music consultants; organization of inservice programs; public and staff relations. 3 q.h.

972. *Seminar in Music Education*. Individual projects and discussion of fundamental issues in music education. Course may be repeated once with permission of instructor. 3 q.h.

973. *Research Methods and Materials in Music Education*. A study of research tools and techniques and their application to problems in music education; critique of research studies; research report required in nonthesis music education program. 3 q.h.

974. *Psychology of Music*. Factors in the development of musical skills; a survey of the experimental literature in the field. 3 q.h.

975. *Music and the Humanities*. Designed to aid in the development of interdisciplinary courses involving music and the humanities in the secondary school. 3 q.h.

976. *Directed Study in Conducting*. Study of significant works, vocal or instrumental; special problems in conducting. May be repeated for credit. 3 q.h.

978. *Contemporary Trends in Music Education*. Examination and discussion of music education in contemporary society. Consideration of repertoire, methods, and teaching aids with regard to current needs and emerging trends. 3 q.h.

979. *Workshop in Music Education*. For students and teachers in service. Specific topics are announced each time the workshop is offered. Grading is satisfactory or unsatisfactory (S/U). May be repeated with different topic. 1-4 q.h.

981. *Elementary School Music Practicum*. Field experiences, demonstrations, and lectures to acquaint the student with the many facets of elementary music instruction. Contemporary trends and innovative programs will be examined; students will be encouraged to introduce certain programs and approaches in their own teaching situations. Prereq.: Teaching experience or student teaching. 3 q.h.

982. *Secondary School Music Practicum*. An examination of the total secondary school music program through guided field experiences, demonstrations, and lectures. The development of curriculum in general music and instrumental and vocal music will be considered in light of the student's needs and abilities. Prereq.: Teaching experience or student teaching. 3 q.h.

Music Research

990, 991. *Thesis I and II*. Individual research and writing culminating in the preparation of a master's thesis. Prereq.: Completion of 30 q.h. coursework and approval of thesis proposal by the Dana Graduate Committee. 3+(1 or 3) q.h.

992. *Independent Projects in Music*. Individual research topics in music of a library, laboratory, or field-work nature. Prereq.: Approval of Dana Graduate Committee. 1-6 q.h.

Music Ensemble

Graduate students may apply up to 3 q.h. of Ensemble credit as music electives in the various degree programs, subject to approval by their faculty advisor. 0-1 q.h.

002 Concert Choir	014 Women' Chorus
003 Madrigal	015 Collegium Musicum
004 University Chorus	016 Woodwind Ensemble
005 Concert Band	017 Brass Ensemble
006 Marching Band	018 Horn Ensemble
007 Symphonic Wind Ensemble	019 Trombone Ensemble
008 Orchestra	020 Tuba Ensemble
009 Percussion Ensemble	021 Brass Chamber Ensemble
010 String Ensemble	022 Trumpet Ensemble
011 Men's Chorus	023 Jazz Ensemble
012 Opera Workshop	024 Composer's Ensemble
013 Contemporary Music Ensemble	026 Dana Chamber Orchestra
	028 Chamber Winds

Nursing

Patricia A. McCarthy, Chair of the Department
2045 Cushwa Hall
(330) 742-3293

900. *Professional Issues in Nursing*. Exploration of nursing issues including changing roles and scope of practice; discipline issues; and health care delivery, sociopolitical environment, legal and ethical issues. Prereq.: Acceptance into M.S.N. program. 3 q.h.
901. *Nursing Science and Research I*. Historical and present development of concepts, models, frameworks, theories and research in nursing along with understanding and application of the following steps of the research process; problem and hypothesis formulation, and literature review. Prereq.: Acceptance to the M.S.N. program. 4 q.h.
902. *Advanced Physiology and Pathological Mechanisms*. Normal physiologic functions and pathologic mechanisms are examined to prepare nurses for advanced practice roles. Prereq.: Admission to M.S.N. program. 4 q.h.
903. *Advanced Pharmacology*. Application of pharmacological concepts in clinical settings, with examination of major categories of pharmacological agents. Prereq: NURSG 902. 4 q.h.
904. *Advanced Chronic Illness Care*. Development of advanced clinical knowledge and skills in assessment and management of chronic health care needs of individuals, their families, and groups of clients with emphasis on research bases from the biological, behavioral, and social sciences and nursing. 3 q.h.
- 904L. *Advanced Chronic Illness Care Practicum I*. Application of knowledge and skills from Advanced Chronic Illness Care. To be taken concurrently with Nurs. 904. 7 q.h.

162 COURSES

906. *Nursing Research II*. Continuation of Nursing Research I focusing on data collection methods and instruments; data analysis and interpretation. Prereq.: Nurs. 902. 4 q.h.
910. *Advanced Statistical Techniques for Health Professionals*. Advanced inferential and multivariate statistical techniques used in nursing and the health professions, with emphasis on SPSS-PC computer analysis for interpretation of nursing and health data. Prereq.: Math 714 or equivalent. 4 q.h.
1000. *Issues and Role Development in Chronic Illness Care*. Exploration of legal, ethical, social, economical, and political health care issues and nursing roles related to chronic illness care in the community setting. Prereq.: NURSG 904. 4 q.h.
1001. *Nursing Science and Research II Practicum*. Continuation of Nursing Science and Research I focusing on design, data collection methods and instruments, and data analysis and interpretation. Prereq.: NURSG 901. 3 q.h.
1002. * *Role Development in Nursing Education*. The examination of concepts, theories, and research related to curriculum, teaching, learning, and evaluation strategies along with academic organization and roles in nursing education. Prereq.: NURSG 1000. 4 q.h.
1003. * *Nursing Education Practicum*. Application of concepts, theories, and research from NURSG 1002 with emphasis on organization and roles, teaching, learning, and evaluation of nursing in the classroom and the clinical setting. To be taken concurrently with or following NURSG 1002. 7 q.h.
1004. *Research Practicum*. Application of concepts and theories from Nursing Science and Research I and II, completion of a scholarly project, and dissemination of findings. Prereq.: Nurs. 901 and 1001. 2 q.h.
1007. *Advanced Chronic Illness Care Practicum II*. Advanced practice in the management of patients with chronic illness in community settings. To be taken concurrently with NURSG 1000. 7 q.h.

Philosophy and Religious Studies

Thomas A. Shipka, Chair of the Department
401 DeBartolo Hall
(330) 742-3448

Philosophy

800. *Theories of Knowledge* (4 q.h.)
810. *Philosophical Classics* (4 q.h.)
811. *Philosophy in America* (4 q.h.)
812. *Twentieth-Century Philosophy* (4 q.h.)
814. *Philosophy of Language* (4 q.h.)
815. *Existentialism* (4 q.h.)
820. *Seminar: Contemporary Philosophical Problems* (1-4 q.h.)
821. *Seminar: Areas of Philosophy* (1-4 q.h.)
823. *Philosophy of Justice* (4 q.h.)
860. *Mathematical Logic* (4 q.h.)

* additional fee required

Religious Studies

816. *Shaping Modern Religious Thought* (4 q.h.)

850. *Seminar in Religious Studies* (1-4 q.h.)

851. *Directed Readings in Religion* (1-4 q.h.)

A Graduate Certificate in Bioethics is available through the Department of Philosophy and Religious Studies. Please see the appropriate information in the "Graduate Certificates" section of this catalog.

Graduate Certificate in Bioethics: Philosophy Courses

925. *Ethics and Medicine*. Places bioethics within the larger ethical framework, then relates general ethical perspectives to the special circumstances of patients and health care providers. Major ethical systems Kantian deontological, utilitarian, virtue-centered, and care-oriented--will be examined, with emphasis on how these various approaches to ethics influence policy, institutional, and individual treatment decisions. 4 q.h.

927. *Ethics in the Health Care Professions*. Examines issues raised by the institutional structure of the health care system and the roles and their relations and potential conflicts--played by the wide range of health care professionals. 4 q.h.

929. *Bioethics and Public Policy*. Emphasizes the larger policy issues that impact bioethics. Examines both the policy issues themselves their constitutional, social, and moral aspects as well as their impact on patients, health care providers, and the institutional structure of health care. 4 q.h.

Physics and Astronomy

Warren Young, Chair of the Department
2014 Ward Beecher Science Hall
(330) 742-3616

Physics

810. *Introduction to Quantum Mechanics* (4 q.h.)

815. *Kinetic Theory and Statistical Mechanics* (4 q.h.)

820. *Advanced Quantum and Quantum Statistical Mechanics* (3 q.h.)

822. *Electrodynamics* (3 q.h.)

826. *Elements of Nuclear Physics* (3 q.h.)

826L.* *Nuclear Physics Laboratory* (1 q.h.)

830. *Solid State Physics* (4 q.h.)

835. *Spectroscopy* (4 q.h.)

835L.* *Spectroscopy Laboratory* (1 q.h.)

850. *Special Topics in Physics* (2-5 q.h.)

890. *Physics and Astronomy for Educators* (4 q.h.)

901, 902. *Classical Mechanics I, II*. Variational principles and Lagrangian equations. The two-body central force problem. Kinematics and dynamics of rigid bodies. Hamiltonian equation of motion; Hamilton-Jacobi theory. Prereq.: Phys. 702 and Math 705. 3+3 q.h.

* additional fee required

164 COURSES

910, 911. *Quantum Mechanics I, II.* Quantum phenomena in relation to classical physics. Schroedinger and Heisenberg picture; angular momentum and scattering theory. Hamiltonian theory of a particle in an electromagnetic field. Pauli principle; identical particles. Prereq.: Phys. 702, 822, 705 and Math 706. 3+3 q.h.

915, 916. *Space Science I, II.* Geophysics of the Earth's atmosphere and other planets. Physics of the sun and the solar system. Advances in the International Geophysical Year, 1957-1958; problems of humans in space. Prereq.: Phys. 510, 610, and Math 705, 706. 3+3 q.h.

920, 921. *Electromagnetic Theory I, II.* Electromagnetic fields in a vacuum; microscopic and macroscopic fields. Methods for calculation of potential problems. Maxwell's equations in the presence of metallic boundaries. Radiation from an accelerated charge. Lienard-Wiechert potentials. Prereq.: Phys. 822 and Math 706. 3+3 q.h.

930, 931. *Solid State Physics I, II.* The physics of solid state phenomena including crystal structure, diffraction, crystal binding, lattice vibrations and thermal properties of solids, theory of metals and semi-conductors, superconductivity, dielectric properties of solids, magnetism, and imperfections in solids. Prereq.: Phys. 810 or equivalent background. Phys. 930 is prereq. to 931. 3+3 q.h.

Political Science and Social Science

William C. Binning, Chair of the Department
302 DeBartolo Hall
(330) 742-3436

Political Science

- 800. *Select Problems, American Government* (3-6 q.h.)
- 840. *Select Problems, Comparative Government* (3-6 q.h.)
- 860. *Select Problems, International Relations* (3-6 q.h.)
- 880. *Select Problems, Political Thought* (3-6 q.h.)

Psychology

James C. Morrison, Chair of the Department
34 DeBartolo Hall
(330) 742-3401

- 802. *Personality* (4 q.h.)
- 805. *Interviewing Techniques* (4 q.h.)
- 806. *Vocational Guidance* (4 q.h.)
- 807. *Introduction to Counseling* (4 q.h.)
- 808. *Psychology of Training and Supervision* (4 q.h.)
- 828. *Physiological Psychology* (4 q.h.)
- 836. *Psychology of the Exceptional Child: General* (3 q.h.)
- 837. *Psychology of the Exceptional Child: Retarded* (3 q.h.)
- 838. *Psychology of the Exceptional Child: Gifted* (3 q.h.)

903. *Psychology of Learning.* Examination of experimentally determined facts concerning the learning process and their implication for use in school. 3 q.h.

906. *Human Growth and Development*. Expanded aspects of child and adolescent psychology. 3 q.h.
907. *Psychology of Adjustment*. Basic problems dealing with mental health, individual differences, motivation, and minor deviant behavior. 3 q.h.
- 910.* *Statistics I*. An overview of inferential statistics, non-parametrics, and concentration on analyses of variance. Students may not be required to take this course if they have successfully completed PSYCH 724 or its equivalent, or if they pass an exemption exam. Prereq.: PSYCH 618 or its equivalent. 3 q.h.
- 911.* *Statistics II*. Multivariate statistics, introduction to modeling, linear, and multiple regression procedures. Use of common statistics packages available, such as SPSS, SAS, and BMDP, will be emphasized to train the student in their applications. Prereq.: Psych. 910. 3 q.h.
- 920, 921. * *Individual Intelligence Testing: Theory and Application I, II*. Intensive study of and supervised practice in the administration, scoring, and interpretation of selected measures of intellectual functioning, with emphasis upon the role of these measures in individual assessment and guidance. Course I will cover the Wechsler scales including the WISC-R and WAIS-R, whereas Course II will cover the Stanford-Binet. Prereq.: 20 q.h. of psychology including Psych. 740 or equivalent, and permission of instructor. 3+3 q.h.
923. *Individual Intelligence Testing: Practicum*. Extensive supervised practice in the administration and interpretation of individual intelligence tests with emphasis upon the development of competence in writing reports tailored for various educational and psychological purposes and upon the interpretation of results in the light of the particular racial, ethnic, and socioeconomic background of the subject being tested. Prereq.: Psych. 920 or 921. 3 q.h.
928. *Graduate Physiological Psychology*. Functions and processes of the central and peripheral nervous systems, with emphasis upon developmental neurology and implications for pediatric disease and medicine. 3 q.h.
940. *Personality Theory*. The study of major personality theories and their implications for psychotherapy and mental health work. Prereq.: Psych. 840. 3 q.h.
- 950.* *Survey of Personality Assessment*. Assessment of personality through interviewing, case histories, and supervised administration and interpretation of objective and projective psychological tests. Prereq.: Psych 840, or permission of instructor. 3 q.h.
955. *Psychopathology*. The study of abnormal behavior with an emphasis placed on psychopathological conditions. Prereq.: Psych. 940. 3 q.h.
980. *Psychological Aspects of Mentally Retarded Children*. An intensive study of psychology and educational psychology in mental retardation; exploration and discussion of paradigm in child psychology, developmental psychology, and personality. 3 q.h.
981. *Seminar in Special Education*. (see Sp.Ed. 981) 1-3 q.h.
990. *Seminar in Psychology*. Study of topics in psychology. To be announced by topic. Prereq.: Permission of instructor. Repeatable to 9 q.h. with change in topic. 1-3 q.h.

* additional fee required

166 COURSES

1000. *Psychopharmacology*. An introduction to the basic principles of pharmacology, a review of the structures and mechanisms of the central nervous system with emphasis on neurotransmission, and a survey of the drugs that especially affect the central nervous system including possible mechanisms of action. 3 q.h.

1010. *Counseling Internship*. (see Couns. 1010) 15 q.h.

1060. *Thesis*. 6 q.h.

Secondary Education

Marianne Dove, Chair of the Department
1018 Fedor Hall
(330) 742-3261

874. *Gifted and Talented Programs* (Sp.Ed. 874) (4 q.h.)

878. *Teaching Gifted and Talented Students* (Sp.Ed. 878) (4 q.h.)

885. *Teaching Strategies I* (EMCE 885) (3 q.h.)

886. *Teaching Strategies II* (EMCE 886) (3 q.h.)

887. *Teaching Strategies III* (EMCE 887) (3 q.h.)

891, 892, 893. *Seminar in Secondary Education* (1-6 q.h.)

894. *Audio-Visual Media* (4 q.h.)

906. *Teaching of Literature*. (see Engl. 906) 4 q.h.

907. *Teaching of Writing*. (see Engl. 907) 4 q.h.

910. *Supervision in Secondary Schools*. Theory and strategies for those who have supervisory responsibilities in secondary schools. Emphasis will be on supervisory competencies and roles. Supervisory models including clinical supervision will be considered. 3 q.h.

922. *Principles of Instruction*. A course for practitioners dealing with principles of pedagogy for both traditional and nontraditional classroom settings. Emphasis is on relationships between instruction and learning outcomes. Historical and cognitive bases for instructional strategies are examined in light of student, teacher, and curriculum variables. 3 q.h.

931. *The Secondary School Curriculum*. Historical development of the American secondary school curriculum, present nature, and recent developments. Study of reports, experiments, and typical programs. The roles of supervisors, administrators, teachers, pupils, and public in the development of curriculums. 3 q.h.

934. *Diagnostic-Prescriptive Education*. Roles and techniques for teachers and administrators in diagnosing learning needs and prescribing appropriate instruction. 3 q.h.

935. *Curriculum Development in VBME*. Systematic study of the components of a course of study for vocational business and marketing education programs, including the selection and organization of competencies and instructional materials for classroom and laboratory instruction. Prereq.: Sec.Ed. 826 or equivalent. 3 q.h.

* additional fee required

946. *The Supervision of Instruction*. A course dealing with the supervision of instruction and organization of a school designed for those aspiring to be principals or supervisors. Decision making, supervision, observation of supervisory experiences, direction in educational technology, the various subjects, staff relationships, school organization, pupil personnel, and extracurricular activities are among the areas considered with emphasis upon elementary or secondary situations as appropriate. 3 q.h.
951. *Interpersonal Communications for Educators*. Techniques of communicating effectively with teachers, administrators, nonteaching personnel, pupils, and parents. Organizing the overall communications program within a school. Related problems. 3 q.h.
957. *Practicum in Language Arts*. Analysis and techniques for teaching the language arts through videotaped lessons of high school and middle school teachers; examination of concepts of learning through various approaches, and in the context of research in the language arts. Practical approaches to the teaching of language, writing, and literature. Prereq.: Permission of instructor. 3 q.h.
958. *Instructional Supervision for Nonschool Personnel*. Strategies of teaching and supervision including the use of media, the evaluation of instruction and pupil performance, and related personnel issues will be covered. The course is designed for personnel in nonschool settings who have teaching or supervisory responsibility in inservice programs. Prereq.: Permission of instructor. 4 q.h.
959. *Law for the Classroom Teacher*. An examination of the rights and responsibilities of teachers and students as determined by constitutional, statutory, and case law. 3 q.h.
971. *Human Relations for the Classroom*. (Couns. 971) The course focuses on skill development in human relations. These skills are studied and integrated with cognate skill development in the classroom, classroom planning and organization conflict resolution, and coping with behavior problems/motivation. Application is made to the classroom environment. 3 q.h.
990. *Independent Study*. (see EMCE 990) 1-4 q.h.
- 991, 992, 933. *Seminar in Secondary Education*. Various topics of current interest in the secondary education area as selected by the staff. Admission to School of Graduate Studies. 1-6 q.h.
999. *Thesis*. Prereq.: Approval of department graduate faculty and Chair. 3-8 q.h.
1020. *Field Experience in Supervision*. A field experience in supervisory practices. Admission by permission of Chair of Secondary Education. Prereq.: Found. 904, Sec.Ed. 922, 946, 1036, Ed.Adm. 949, and 954. 3 q.h.
1025. *Seminar in Secondary Education*. Study of selected topics chosen by the secondary education staff. Prereq.: Permission of instructor. May be repeated by nondegree students. 1-6 q.h.
1030. *Human Relations Training for School Personnel*. (see Couns. 1030) 3 q.h.
1032. *Theories of Supervision*. Theories germane to supervision in education on research and theory from education, business, and the applied behavioral sciences. 3 q.h.
1036. *Fundamentals of Curriculum Development*. Historical and social bases for curriculum development in the American school. Principles for determining content and its sequence and grade placement. Theoretical issues and patterns of curriculum organization. 3 q.h.
1040. *Field Experience in Gifted and Talented Education*. (see Sp.Ed. 1040) 3 q.h.

168 COURSES

1042. *Professional Development for Classroom Teacher Educators*. A restricted professional development course for classroom teacher educators invited to supervise the instructional program of student teachers and field experience students. The course concentrates on developing analytical observation, conferencing, evaluation, and supervision skills based on scientific knowledge and theoretical constructs. Prereq.: Invitation from YSU and endorsement from home school district to serve as a classroom teacher educator. 3 q.h.

1050. *Workshop in English Education*. (see Engl. 1050) 4 q.h.

1051. *English Education*. (see Engl. 1051) 4 q.h.

1120. *Clinical Supervision of Teaching*. A study of theory and practice of clinical supervision as it relates to the activities of effective teaching and schooling. Prereq.: Doctoral admission and Sec.Ed. 946. 3 q.h.

Social Work

Joan DiGiulio, Chair of the Department
3037 Cushwa Hall
(330) 742-1598

901. *Social Case Work for Social Guidance Personnel*. The field of social work. Emphasis will be on major institutions of social work important to school guidance personnel and on the values and methods of social casework. Specific topics include the use of relationship, social diagnosis, social work treatment, and social work advocacy. Major institutions surveyed are the juvenile court, mental health agencies, and family and children's agencies. 3 q.h.

902. *Child and Society*. The socialization of the preschool and elementary school child. Consideration of theories and research related to social development, social interaction patterns, and cultural determinants. Primarily geared to graduate students in education. 4 q.h.

Sociology and Anthropology

John R. White, Chair of the Department
419 DeBartolo Hall
(330) 742-3442

Sociology

900. *Special Sociological Problems*. Advanced seminars focusing on independent study at the graduate level; social organization in a changing world; social disorganization (or deviance) and social controls; social and cultural factors in personality development; minority relationships: sociology of law; social change; comparative institutions. each 4 q.h.

905. *Social Gerontology*. Integration and application of gerontological theories, major conceptual issues regarding life span development, and contemporary gerontological concepts and research. 4 q.h.

Anthropology

910. *Special Anthropological Problems*. Advanced seminars focusing on independent study at the graduate level: archaeology, its methods and functions; human origins and differentiation; anthropology of religion; cultural change and its impact. each 4 q.h.

Special Education

Bernadette J. Angle, Chair of the Department
2025 Fedor Hall
(330) 742-3265

802. *Education of Exceptional Children* (4 q.h.)
 828. *Education of Children with Severe Behavioral Handicaps* (3 q.h.)
 828L. *Education of Children with Severe Behavioral Handicaps Lab* (3 q.h.)
 833. *Education of Mentally Retarded* (4 q.h.)
 834. *Education and Training of MSPR* (4 q.h.)
 834L. *Practicum in Education and Training of MSPR* (2 q.h.)
 835. *Classroom Management for Exceptional Individuals* (4 q.h.)
 836. *Education of Multiply-Handicapped Individuals* (4 q.h.)
 851. *Social Studies and Social Skills for Mentally Retarded* (4 q.h.)
 852.* *Language Arts Methods in Special Education* (4 q.h.)
 853.* *Arithmetic Methods in Special Education* (4 q.h.)
 855. *Career and Vocational Education for Handicapped Individuals* (4 q.h.)
 858. *Intervention Concepts and Strategies in Early Childhood Special Education* (3 q.h.)
 862. *Principles of Interaction with Special Needs Students* (Couns. 862) (3 q.h.)
 863. *Learning Disabilities and Behavior Disorders* (4 q.h.)
 864. *Communication and Consultation Skills in Special Education* (4 q.h.)
 865. *Workshop in Special Education* (1-6 q.h., may be repeated up to 12 q.h.)
 866.* *Clinical Teaching of Children with Specific Learning Disabilities* (4 q.h.)
 867.* *Practicum in Specific Learning Disabilities* (4-6 q.h.)
 868. *Independent Study in Special Education* (1-6 q.h., may be repeated up to 6 q.h.)
 871. *Characteristics and Needs of Gifted Children* (4 q.h.)
 878. *Teaching Gifted and Talented Students* (4 q.h.)
- 965X. *Restructuring General and Special Education Through Collaboration*. Teachers in the regular elementary classroom will identify and recognize how to meet the needs of mildly disabled children in the regular education classroom, including children identified as ADD/HD, SLD, and DH. Collaboration/consultation skills will be presented and practiced by participants. Also, the four alternative service delivery models piloted by the State Department of Education Division of Special Education will be explored. 3 q.h.
- 970G. *Special Topics in Gifted Education*. Workshop will include information on the various identification techniques used in gifted education with particular emphasis on the role of the regular education teacher. In addition, instructional strategies for use within the regular education classroom will be explored. 2 q.h.
977. *Supervision, Administration, and Program Development in Gifted and Special Education*. The course focuses on leadership and supervision of a broad range of programs and services for students with

* additional fee required

170 COURSES

exceptionalities (students with disabilities as well as gifted students). Topics included are theoretical foundations, historical issues, federal and state legal issues, differentiated programming and procedures, student identification and placement, individualized education plans and due process, least restrictive environment, and program monitoring and evaluation. Prereq.: Graduate standing. 3 q.h.

980. *Topical Seminar in Special Education*. Selected topics in special education. May be repeated for different content. 1-6 q.h.

981. *Seminar in Special Education*. (Psych. 981) Exploration of general research and other theoretical studies concerning individuals in special education programs, with particular emphasis on psychological variables in learning. 3 q.h.

982.* *Educational Assessment in Gifted and Special Education*. The course focuses on the educational assessment process as it applies to students with exceptionalities (students with disabilities as well as gifted students). Topics included are review of state and federal regulations, data collection techniques including both formal and informal methods, appropriate test preparation and interpretation, design of identification and placement procedures. Prereq.: Graduate standing. 4 q.h.

983. *Major Concepts in Special Education*. Introduces the teacher to clinical, developmental, and remedial concepts and practices in special education programming. Prereq.: Sp. Ed. 833 or 863. 3 q.h.

984. *Educational Programs for Handicapped Children*. Review of federal and state legislation affecting the handicapped. Procedures for ensuring each handicapped child an appropriate educational experience in a least-restrictive environment. Case studies will be used. Appropriate for principalship or supervisory candidates. 3 q.h.

985. *Alternative Delivery Services for Children in Special Education*. Designing and organizing programs for children receiving special education services in inclusive and other settings. Collaboration and consultation strategies for both special education and general education teachers are emphasized. Service delivery models from least to most restrictive are also addressed. Prereq.: Admission to the School of Graduate Studies. 3 q.h.

986. *Severe Behavior Handicaps: Assessment and Classroom Management*. Etiology and nature of behavior disorders. Rationale and procedures for identification, analysis, and management of severe behavior handicapped children in the schools. 3 q.h.

991.* *Referral and Assessment in Early Childhood Special Education*. Intensive hands-on experience in referral and assessment of young children. Emphasis on philosophies and ethical considerations, as well as techniques, instruments, and the referral process. Participation within the assessment team with parents involved as equal partners in the multidisciplinary process. Written assessment reports are required based upon knowledge of child development and a variety of sources of input. Prereq.: Sp.Ed. 858. 4 q.h.

992. *Teaching Methods in Early Childhood Special Education*. Examines accepted curricular models in early childhood special education as well as classroom management and motivation strategies as they relate to young children with special needs. Emphasizes the inclusion of parents in planning. Students will learn to integrate curriculum with individual IEP goals and objectives. Prereq.: Sp.Ed. 858. 4 q.h.

* additional fee required

993. *Health and Related Issues in Early Childhood Special Education.* A study of curricular experiences focusing on those aspects of early childhood special education dealing with the instructional applications of technology and the use of adaptive equipment and related services as these relate to technologically dependent or chronically ill children. Prereq.: Sp.Ed. 858. 3 q.h.
994. *Field Experiences in Early Childhood Special Education.* Supervised field experiences incorporating theory, planning and implementation of services for young children with special needs. Prereq.: Psych. 755, Sp.Ed. 802 or 731, 858, 862, 991, 992 and 993. 6-12 q.h.
1021. *Field Experience I.* (see Ed.Adm. 1021) 3 q.h.
1040. *Field Experience in Gifted and Talented Education.* (Sec.Ed. 1040) Supervised field experience that incorporates theory, planning, and implementation of curriculum for gifted and talented students. Individual conferences and completion of contracted assignments. Prereq.: Sp.Ed. 977. 3 q.h.
1042. *Professional Development for Classroom Teacher Educators.* A restricted professional development course for classroom teacher educators invited to supervise the instructional program of student teachers and field experience students. The course concentrates on developing analytical observation, conferencing, evaluation, and supervision skills based on scientific knowledge and theoretical constructs. Prereq.: Invitation from YSU and endorsement from home school district to serve as a classroom teacher educator. 3 q.h.
1043. *Instructional Leadership in Special Education.* Implementation, coordination, and evaluation of quality instructional programs for exceptional, at-risk, and other students experiencing learning problems. Administrative roles and strategies related to instructional leadership, school climate, collaborative decision making, and restructuring. Prereq.: Couns. 961 and Sp.Ed. 977. 3 q.h.

UNIVERSITY POLICIES

Alcohol and Drug Abuse Prevention

YSU Board of Trustees Policy

Youngstown State University is committed to a campus free of unlawful drug use and alcohol abuse. The following information outlines YSU's Alcohol and Drug Abuse Prevention Program. It is being distributed to all YSU students and employees, as required by the Federal Drug-Free Schools and Communities Act Amendments of 1989.

On September 14, 1990, the YSU Board of Trustees adopted a policy in accordance with the requirements of Title V of the Federal Anti-Drug Abuse Act of 1988 and the Drug-Free Schools and Community Act Amendments of 1989. The policy is printed in the University Policies section of this catalog, along with a summary of the educational guidelines of the Acts. Also included are information tables listing the federal trafficking penalties for commonly abused drugs.

The University provides counseling and referral services at no cost to all students, faculty, and staff who are seeking help with a drug or alcohol problem or are concerned about the drug or alcohol problem of a friend, colleague, or family member. Among the offices providing these services are Health Enhancement Services, 3049 Jones Hall, 742-3322; Counseling Services, 3046 Jones Hall, 742-3056; or Employee Assistance, 314 Tod Hall, 742-3060. Referral to the appropriate community or regional treatment centers will be made when additional treatment is necessary.

If you have any questions or concerns about any aspect of the policy or the program, please contact the above-named consultation and referral services.

33.1 The University recognizes that illegal drug use and alcohol abuse pose health and safety hazards to employees, students, and to the community at large and accordingly prohibits the possession or use of illegal drugs and abuse of alcohol by employees and students on all University property and at other locations where employees are conducting University business.

33.2 Employees or students manufacturing, distributing, dispensing, possessing, or using illegal drugs or abusing alcohol on University property and at other locations during the conducting of University business may be subject to disciplinary sanctions. Employees' rights respecting discipline imposed under this policy are governed by the appropriate collective bargaining agreement, if the employee is a member of a bargaining unit covered by a negotiated bargaining agreement. For employees not covered by a collective bargaining agreement, sanctions may be imposed in accordance with existing policy and procedures. Students' rights respecting discipline imposed under this policy are outlined in The Code.

33.3 The University will establish and maintain a drug and alcohol abuse-free awareness program that will address the following topics:

- a. Health and safety concerns arising from drug and alcohol abuse.
- b. Availability of drug and alcohol counseling and rehabilitation services.
- c. Sanctions that may be imposed upon employees and students for drug and alcohol abuse violations.

Youngstown State University Education Guidelines Drug-Free Schools and Campuses Act

Selected Effects of Occasional and Extended Use

Alcohol

Impaired motor abilities; reduced judgment; sleepiness; increased sexual desire but reduced ability to perform; nausea, vomiting; liver disorders: alcoholic hepatitis, alcoholic cirrhosis; cancer of the tongue, mouth, throat, esophagus, liver, breast; fetal alcohol syndrome (most common symptom is mental retardation).

Cannabis, Marijuana, Hash/Hash Oil, THC

Diminished short-term memory, motivation, cognition, coordination, concentration, oral communication, reaction time; anxiety/panic reactions; carcinogenic elements in smoke; damaged lungs and respiratory system.

Cocaine (includes Crack Cocaine)

Increased likelihood of risk-taking; seizures; sleeplessness; paranoia; irregular heartbeats; can cause sudden death by stroke or heart failure, even in young users; cocaine psychosis (paranoia and hallucinations); ulceration of mucous membranes in nose; sexual dysfunction; during pregnancy: severe physical and emotional problems in babies.

Depressants, Tranquilizers, Barbiturates, Methaqualone

Dangerous effects when mixed with alcohol; calmness and relaxed muscles; slurred speech; staggering gait; loss of motor coordination; altered perceptions; respiratory depression which can result in coma or death; disruption of normal sleep cycle; during pregnancy: birth defects, brain tumors in children, tolerance develops severe withdrawal symptoms; physical and psychological dependence.

Other Stimulants (excluding Cocaine), Amphetamines, Methamphetamines

Increased heart and respiratory rates; elevated blood pressure; decreased appetite; headache; blurred vision; dizziness; sleeplessness; anxiety; amphetamine psychosis: violent behavior, hallucinations, delusions, paranoia; drug tolerance and dependency; mood swings; ulcers; mental confusion.

Psychedelics, LSD, Mescaline, Psilocybin, Phencyclidine (PCP), MDMA (Ecstasy) MDA

Distorted sense of distance, space, and time; blockage of pain sensations, raised temperature and blood pressure; nausea, vomiting, diarrhea; greater suggestibility and feeling of invulnerability; unpredictable reactions if drugs are cut with impurities; bad trips, severe mood disorders, panic, depression, anxiety; tolerance after 3-4 daily doses (higher doses are required to produce same effects).

Narcotics, Opium, Morphine, Codeine, Thebaine, Heroin, Demerol, Methadone, Darvon

Feeling of euphoria, then drowsiness; nausea and vomiting; respiratory depression; central nervous system depression; using of unsterile needles promotes: AIDS, hepatitis B, endocarditis (infection of heart); women dependent on opiates have multiple pregnancy complications: spontaneous abortions, still births, anemia, diabetes.

Examples of Federal Sanctions

Federal Trafficking Penalties—Marijuana

174 YOUNGSTOWN STATE UNIVERSITY

1,000 kilograms or more; or 1,000 or more plants of marijuana (mixture containing detectable quantity [includes hashish and hashish oil]):

First Offense: not less than 10 years, not more than life. If death or serious injury, not less than 20 years, not more than life. Fine not more than \$4 million individual, \$10 million other than individual.

Second Offense: Not less than 20 years, not more than life. If death or serious injury, not less than life. Fine not more than \$8 million individual, \$20 million other than individual.

100-1,000 kilograms; or 100-999 plants of marijuana (mixture containing detectable quantity [includes hashish and hashish oil]):

First Offense: Not less than 5 years, not more than 40 years. If death or serious injury, not less than 20 years, not more than life. Fine not more than \$2 million individual, \$5 million other than individual.

Second Offense: Not less than 10 years, not more than life. If death or serious injury, not less than life. Fine not more than \$4 million individual, \$10 million other than individual.

50-100 kilograms of marijuana; 10-100 kilograms of hashish; 1-100 kilograms hashish oil; 50-99 marijuana plants:

First Offense: Not more than 20 years. If death or serious injury, not less than 20 years, not more than life. Fine \$1 million individual, \$5 million other than individual.

Second Offense: Not more than 30 years. If death or serious injury, life. Fine \$2 million individual, \$10 million other than individual.

Less than 50 kilograms of marijuana; less than 10 kilograms of hashish; less than 1 kilogram of hashish oil:

First Offense: Not more than 5 years. Fine not more than \$250,000 individual, \$1 million other than individual.

Second Offense: Not more than 10 years. Fine \$500,000 individual, \$2 million other than individual.

Federal Trafficking Penalties—all other controlled substances

Under Controlled Substances Act (Schedule I and II)

Methamphetamine: 10-99 grams or 100-999 gram mixture; *heroin:* 100-999 grams mixture; *cocaine:* 500-4,999 gram mixture; *cocaine base:* 5-49 gram mixture; *PCP:* 10-99 grams or 100-999 gram mixture; *LSD:* 1-10 gram mixture; *fentanyl:* 40-399 gram mixture; *fentanyl analogue:* 10-99 gram mixture:

First Offense: Not less than 5 years, not more than 40 years. If death or serious injury, not less than 20 years, not more than life. Fine of not more than \$2 million individual, \$5 million other than individual.

Second Offense: Not less than 10 years, not more than life. If death or serious injury, not less than life. Fine of not more than \$4 million individual, \$10 million other than individual.

Methamphetamine: 100 grams or more than 1 kilogram (Law as originally enacted states 100 grams. Congress requested to make technical correction to 1 kilogram.); *heroin*: 1 kilogram or more mixture; *cocaine*: 5 kilograms or more mixture; *cocaine base*: 50 grams or more mixture; *PCP*: 100 grams or more or 1 kilogram or more mixture; *LSD*: 10 grams or more mixture; *fentanyl*: 400 grams or more mixture; *fentanyl analogue*: 100 grams or more mixture:

First Offense: Not less than 10 years, not more than life. If death or serious injury, not less than 20 years, not more than life. Fine of not more than \$4 million individual, \$10 million other than individual.

Second Offense: Not less than 20 years, not more than life. If death or serious injury, not less than life. Fine of not more than \$8 million individual, \$20 million other than individual.

Other drugs, not including marijuana, hashish or hashish oil (see above) of any quantity.

First Offense: Not more than 20 years. If death or serious injury, not less than 20 years, not more than life. Fine \$1 million individual, \$5 million other than individual.

Second Offense: Not more than 30 years. If death or serious injury, life. Fine \$2 million individual, \$10 million other than individual.

(Schedule III)

All drugs of any quantity.

First Offense: Not more than 5 years. Fine not more than \$250,000 individual, \$1 million other than individual.

Second Offense: Not more than 10 years. Fine not more than \$500,000 individual, \$2 million other than individual.

(Schedule IV)

all drugs of any quantity.

First Offense: Not more than 3 years. Fine not more than \$250,000 individual, \$1 million other than individual.

Second Offense: Not more than 6 years. Fine not more than \$500,000 individual, \$2 million other than individual.

(Schedule V)

All drugs of any quantity.

First Offense: Not more than 1 year. Fine not more than \$100,000 individual, \$250,000 other than individual.

Second Offense: Not more than 2 years. Fine not more than \$200,000 individual, \$500,000 other than individual.

Examples of State/Local Criminal Sanctions

Information on criminal sanctions is given for first offense only. Repeat offenses carry progressively greater sanctions. Trafficking (selling) any of the above drugs, excluding alcohol, are all felonies. Amount and type of drug possessed for sale will determine penalty. This information is presented for educational purposes and should not be viewed as legal advice or determinative of the elements of a criminal offense.

176 YOUNGSTOWN STATE UNIVERSITY

Alcohol

Underage consumption—misdemeanor, 1-6 months, \$1,000 fine; open container or intoxication; liquor in public place (minor)—misdemeanor, \$100 fine; consumption of beer or intoxicating liquor in motor vehicle—6 months, \$1,000 fine.

Marijuana

3 1/2 ounces or less—\$100 fine; 3 1/2-7 ounces—\$250 and/or 30 days; over 7 ounces marijuana, 10 grams hash or 2 grams of hash oil are felonies; amount possessed will determine penalty 6 months (minimum), 10 years (maximum), \$5,000 fine.

All Other Drugs Listed Above

Felony; amount possessed will determine penalty; 6 months (minimum), 15 years (maximum), \$7,500 fine.

Examples of University Sanctions

Actual penalties and sanctions imposed, pursuant to applicable due process requirements, will be determined by the facts relating to each individual. University sanctions are independent of any criminal sanctions which may be imposed.

Alcohol

Students: May not use, possess, or distribute on University premises except as expressly permitted by law and University regulations. Violation of these regulations may result in sanctions, which include warning, probation, suspension, or expulsion.

Employees: May not use, possess, or distribute on University premises except as expressly permitted by law and University regulations. Violation of these regulations may result in sanctions which include warning, reprimand, suspension, or removal.

All Other Drugs Listed Above

Students: Regulations prohibit possession, use, or sale; sanctions range from warning to expulsion. Violation of these regulations may result in sanctions which include warning, probation, suspension, or expulsion.

Employees: Regulations prohibit possession, use, or sale. Violation of these regulations may result in sanctions which include warning, reprimand, suspension, or removal.

Graduate Student Grievance Procedure

The Graduate Student Grievance Procedure provides the graduate students at YSU with a formal channel through which complaints concerning academic matters may be heard. It creates a system whereby the student may receive assistance in pressing a claim within the organization of the University.

Informal discussions between persons directly involved in a grievance are essential in the early stages of a dispute and should be encouraged at all stages. An equitable solution to the problem should be sought before the respective persons directly involved in the case have assumed official or public positions that might tend to polarize the dispute and make resolution more difficult. If a problem still exists after discussion, the student should bring the complaint to the attention of the department Chair or to the Dean of Graduate Studies.

Scope

The procedure provides the student with an opportunity to appear to seek redress for concerns involving an academic or administrative practice. This procedure may not be used as a means of modifying or changing departmental, University and/or School of Graduate Studies policies, but may be used to address policy issues.

The Graduate Student Grievance Committee will be responsible for coordinating and implementing this formal procedure. The Committee membership will be appointed by Graduate Council and will be composed of three full-service faculty, three graduate students, and the designee of the Vice President for Student Affairs; at least one graduate student must be a member of the Graduate Student Advisory Committee. Appointment to this Committee will follow the same procedure as is used by Graduate Council for its standing committees. Any matters pertaining to conflict of interest concerning a particular grievance shall be resolved by the Committee. Any action taken by the Committee shall require a majority vote of a quorum. Two students and two faculty shall constitute a quorum.

Procedure

Before initiating the formal procedure, any student who has a complaint is urged to resolve the conflict through informal discussion as described above. If such discussion fails to resolve the matter, the following procedure should be implemented:

Step 1

A) The student must submit the Graduate Student Grievance Form to the chair of the Graduate Grievance Committee within twenty-four school days (a school day is defined as any day, including Saturdays, on which classes are conducted) after an event or the student's awareness of a situation that the student wishes to grieve. Within six school days after the student files the form with the Grievance Committee Chair, the committee shall designate two of its members, one faculty and one student, to serve as a subcommittee to attempt to resolve the issue. The subcommittee shall meet with each involved party either on an individual basis or in a joint conference as deemed appropriate.

B) Within six school days after the subcommittee completes its conferences, it shall issue a disposition notice concerning the grievance, together with a form upon which the student may indicate a) acceptance or rejection of the disposition, and b) a determination to pursue or not to pursue the issue further. The student must sign the Grievance Form and forward it to the Chair of the Graduate Student Grievance Committee within six school days after receiving the disposition.

Step 2

A) If the student or person against whom the grievance was filed rejects the disposition, the student must submit a formal written grievance to the Chair of the Graduate Student Grievance Committee within six school days. The Grievance Committee may waive the deadline for submitting the formal written grievance. In this and all subsequent steps of the grievance process, the student is entitled without cost to the services, as an advocate, of a person from the Associate to the Vice President for Student Services office, or may employ at his/her own expense any other advocate. The individual against whom the grievance is directed may also be represented by an advocate.

B) Within 18 school days of the receipt of the formal written grievance, the Graduate Student Grievance Committee will hold a hearing on the grievance. All parties shall be notified well in advance of the day, time, and place of the hearing. At least three school days before the hearing, the Committee will receive written materials from the affected parties so that the Committee members might have an opportunity to review them. This does not preclude the admission of additional written materials at the hearing. At the hearing itself, both sides will be heard. The following rights are guaranteed all parties: each will appear, each may be assisted by an advocate, each may be heard, each may present pertinent relevant evidence, each may confront those expressing opposing viewpoints, and each may rebut evidence. After the hearing has been concluded, the Grievance Committee will meet in private and, within six school days, reach a decision.

Implementation

The Committee's disposition shall be signed by its Chair and forwarded to the Dean of Graduate Studies, the Dean of the college or the senior administrator where the faculty or staff member is located, and the Provost. Copies of the disposition, along with a summary of the substantive issues of the grievance, shall be placed in the student's file, as well as in the faculty or staff member's or administrator's personnel file. A master file of all pertinent documents of all grievances shall be kept in the School of Graduate Studies office for three years.

GRADUATE FACULTY

Administrative Members

LESLIE H. COCHRAN, Ed.D. President

JAMES J. SCANLON, Ph.D. Provost

PETER J. KASVINSKY, Ph.D. Dean of the School of Graduate Studies

BARBARA BROTHERS, Ph.D. Dean of the College of Arts and Sciences

BETTY JO LICATA, Ph.D. Dean of the Warren P. Williamson, Jr., College of Business Administration

CLARA M. JENNINGS, Ph.D. Dean of the College of Education

CHARLES A. STEVENS, Ph.D. Dean of the William Rayen College of Engineering and Technology

DAVID SWEETKIND, Ph.D. Dean of the College of Fine and Performing Arts

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180 GRADUATE FACULTY

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INDEX

- Academic Administration 4
- Academic Standards 23
- Academic Support Services 11
- Accounting Courses 101
- Accreditation 8
- Administrative Officers 4
- Admission 17
- Admission Requirements 18
- Advertising Courses 151
- Advisement 21
- Affirmative Action Office Statement of Policy 8
- Alcohol and Drug Abuse Prevention Policy 172
- Alcohol and Drug Abuse Prevention Program 15
- Anthropology Courses 169
- Application Fee 30
- Application Procedure 18
- Art Courses 104
- Assistantships 36
- Auditing Courses 27
- Auditing Courses Fee 30

- Bioethics Certificate 99
 - Courses 163
- Biology 59
 - Courses 105
- Board of Regents 4
- Board of Trustees 4
- Bookstore 15
- Business Information Systems Courses 109

- Calendar, Academic 5
- Campus, description of 9
- Career Services 13
- Change of Curriculum 26
- Change of Registration 21
- Chemical Engineering Courses 110
- Chemistry 60
 - Courses 110
- Civil Engineering 95
 - Courses 113
- Code, The 27
- Commencement 27
- Computer and Information Sciences Courses 117
- Computer-Assisted Course Fee 30
- Computer Center 11
- Computer-Intensive Course Fee 30
- Computer Science Option 67
- Counseling Services 14
- Counseling Program 68
 - Courses 118
- Course Fee 30

- Course Numbering System 38
- Criminal Justice 62
 - Courses 122
- Degrees Granted 7
- Development and Organization of the School of Graduate Studies 17
- Disabled Student Services 9
- Doctor of Education 40
- Early and Middle Childhood Education Courses 124
- Economics 44
 - Courses 127
- Educational Administration 74
 - Courses 130
- Educational Leadership 40
- Electrical Engineering 96
 - Courses 133
- Elementary Education 80
- Employed Students 25
- Employment, On-Campus Student 37
- English 45
 - Courses 135
- Executive Master of Business Administration 54
- Faculty, Graduate 179
- Federal Financial Aid 37
- Fees 28
- Fellowships and Awards 37
- Finance Courses 102
- Financial Assistance 36
- Fines 29
- Food Service 16
- Foreign Language Proficiency Examinations 27
- Foundations of Education Courses 139
- French Courses 138
- Full-Time Status 25
- General Fee 30
- General Information 7
- Geology Courses 141
- German Courses 138
- Grade Changes 26
- Grading System 25
- Graduate Certificates 99
- Graduate Courses, types 101
- Graduate Courses for Undergraduates 25
- Graduate Management Admission Test Fee 30
- Graduate Programs 40
- Graduate Record Examination Fee 30
- Graduate Student Representation 38
- Graduation Fee 30
- Grievance Procedure 176

196 INDEX

- Health and Physical Education Locker and Towel Fee 31
- Health Sciences Courses 141
- Health Service 14
- History 48
 - Courses 143
- Housing 15
- Human Ecology Courses 145
- Human Performance and Exercise Science Courses 146
- Identification Card Replacement Charge 31
- Industrial and Systems Engineering Courses 147
- Instructional Fee 28
- International Student Admission 20
- International Study & Scholar Programs 12
- Interrupted Enrollment 23
- Involuntary Withdrawal 32
- Italian Courses 138

- Kilcawley Center 16

- Late Payment Fee 30
- Late Registration Fee 31
- Library 11
- Library Fines 32
- Lockers 31

- Management Courses 148
- Marketing Courses 150
- Master of Business Administration 51
- Master of Science in Engineering 93
- Materials Engineering Courses 152
- Materials Science 97
- Mathematics 65
 - Courses 153
- Mechanical Engineering 98
 - Courses 155
- Mission Statement 8
- Music 55
 - Courses 157

- Nondegree Admission 19
- Nonresident Tuition Surcharge 30
- Nursing Courses 161

- Outreach, University 12

- Parking Permit Fee 31
- Parking Violation Fine 32
- Performance Music Fee 30
- Philosophy Courses 162
- Physics Courses 163
- Political Science Courses 164
- Professional Writing and Editing Certificate 100
 - Courses 137
- Proficiency Examination Fee 31

- Programs, Graduate 40
- Provisional Admission 19
- Psychology Courses 164
- Public Relations Courses 151

- Reduced Load for Employed Students 25
- Reduction/Refund of Fee Charges Upon Withdrawal 32
- Regents and Trustees 4
- Registration 21
- Registration Change 21
- Registration Procedure 21
- Regular Admission 19
- Religious Studies Courses 163
- Residence Hall Charge 31
- Residency Rules 33
- Restricted Admission 19
- Returned Check Charge 31

- Scholarships 37
- Second Master's Degree 23
- Secondary Education 84
 - Courses 166
- Seminar 23
- Social Work Courses 168
- Sociology Courses 168
- Spanish Courses 139
- Special Education 87
 - Courses 169
- Special Nondegree Admission 19
- Speech Courses 116
- State Residency Status 33
- Student Center (Kilcawley) 16
- Student Rights, Responsibilities, and Conduct 27
- Substance Abuse Services (Counseling Services) 14
- Support Services 11

- Test Information 18
- Theater Courses 116
- Thesis 23
- Thesis Binding Charge 31
- Time Limit 22
- Transcript of Credits Charge 31
- Transfer Credits 20
- Transient Admission 20
- Tuition and Fees 28

- Undergraduates Enrolling in Graduate Courses 25

- Veterans 14

- Withdrawal of Registration 22
- Withdrawals and Refunds 32