Calendar 2011-2012

Fall Semester 2011
Day and evening classes begin Mon., Aug. 22
*Labor Day (day and evening) Mon., Sept. 5
Veterans Day (classes held; staff holiday) Fri., Nov. 11
**Thanksgiving Break Thu.-Sat., Nov. 24-26
Classes resume Mon., Nov. 28
Spring 2012 advancement to candidacy due Thu., Dec. 1
Final instructional day Sat., Dec. 3
Final examination period Mon.-Sat., Dec. 5-10
Commencement Sat., Dec. 10
Winter Recess Sat.-Sat., Dec. 17-Jan. 7

Spring Semester 2012
Day and evening classes begin Mon., Jan. 9
*Martin Luther King Day Mon., Jan. 16
Summer 2012 advancement to candidacy due Mon., Apr. 2
*Presidents’ Day Tue., Feb. 21
Spring Break Mon.-Sat., Mar. 12-Mar. 17
Classes resume Mon., Mar. 19
Final instructional day Sat., Apr. 28
Final examination period Mon.-Sat., Apr. 30-May 5
Commencements Fri.-Sun., May 4-6
School of Law Commencement Sun., May 13

Summer Sessions I, II, and III 2012
First 5- and 8-week Sessions begin Mon., May 14
*Memorial Day Mon., May 28
First 5-week Session ends Sat., Jun. 16
Second 5- and 8-week Sessions begin Mon., Jun. 18
Fall 2012 advancement to candidacy due Mon., Jul. 2
*Independence Day Wed., Jul. 4
First 8-week Session ends Sat., Jul. 7
Third 5-week Session begins Mon., Jul. 9
Second 5-week Session ends Sat., Jul. 21
Third 5-week and Second 8-week Sessions end Sat., Aug. 11
Summer Commencement Sat., Aug. 11

University Closing Policy
The safety of students, faculty, and staff is the University’s highest priority. When severe weather is predicted or when emergencies arise, the president or designee will determine when conditions necessitate closing or canceling classes at the entire University or any of its specific units.

The president or designee will make a decision to close based on the recommendations from:
- University police, safety and facilities personnel, who will be checking the condition of campus sidewalks and parking lots.
- City and county law enforcement agencies, who will report on road conditions on highways and roads in areas surrounding the University.
- The Ohio State Patrol and County Sheriff, who may issue advisories related to weather.
- Additional sources as needed.

Closing information will be announced as early and as simply as possible. This information will be relayed to students in several ways:
- Radio and TV: Closing information will be provided to major radio and television stations in Akron, Canton, and Cleveland.
- On the Web: Closing information will be posted on the University’s homepage at www.uakron.edu, and on Zipline at http://zipline.uakron.edu.
- E-mail: A message will be sent to students’ and employees’ University mailboxes.
- Text messaging: A message will be sent to anyone who subscribes to our Z-Alert text messaging service. Learn more about it at http://www.uakron.edu/Infoz-alert.php.
- By phone: The University’s emergency information phone line is updated around the clock as conditions warrant. The number is 330-972-SNOW or 330-972-6238 (TDD/VOICE).

University colleges and departments are encouraged to establish a method for communicating the closing decision to department personnel.

Disclaimer
While every effort is made to provide accurate and up-to-date information, the University reserves the right to change, without notice, statements in the Bulletin series which include, but are not limited to rules, policies, procedures, fees, curricula, courses, programs, activities, services, schedules, course availability, or other matters. For example, programs may be modified due to limited resources or facilities, unavailability of faculty, insufficient enrollment, or such other reasons as the University deems necessary.

The University of Akron Graduate Bulletin
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July 2011

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Important Phone Numbers

University Area Code (330)

All phone numbers are subject to change without notice.
For numbers not listed, call the University Switchboard 330-972-7111.
General Campus Information Center 330-972-INFO (4636)

Graduate School

Vice President for Research, & Dean, Graduate School
Dr. George R. Newkome .................................................. 972-6458
Associate Dean, Graduate School
Dr. Mark B. Tausig ......................................................... 972-7664
Senior Executive Administrative Assistant
Ms. Linda Smith .......................................................... 972-6458
Administrative Assistant Senior
Ms. Heather A. Blake .................................................... 972-7664
Director, McNair Scholars Program
Dr. Heather E. Burton ................................................... 972-2135
Coordinator, Graduate Student Financial Aid
Mrs. Karen L. Caldwell ............................................... 972-5858
Examiner Associate
Ms. Elizabeth Markovich ........................................... 972-5858
Manager, Graduate Admissions
Ms. Theresa M. McCune ............................................ 972-8233
Student Services Counselor
Mrs. Leanne McNicholas ........................................... 972-5169

Graduate School

World Wide Web Location

Graduate School Homepage ........................................... http://www.uakron.edu/gradsch/
Graduate School E-mail .............................................. gradschool@uakron.edu

Colleges

Buchtel College of Arts and Sciences .................................. 972-7880
College of Business Administration .................................... 972-7041
College of Creative and Professional Arts ............................. 972-7564
College of Education ..................................................... 972-6970
College of Engineering .................................................. 972-7816
College of Health Sciences and Human Services ..................... 972-7543
College of Nursing ....................................................... 972-7551
College of Polymer Science and Polymer Engineering ............... 972-7500
NEOMED (Northeast Ohio Medical University) ..................... 325-2511
The University of Akron–Wayne College ............................. 1-800-221-8308
Summit College .......................................................... 972-7220
University College ....................................................... 972-7066

Other Offices

Accessibility, Office of .................................................. 972-7928
TTY/TDD ................................................................. 972-5764

Buchtelite, The (student newspaper) .................................. 972-7919
Career Center ........................................................... 972-7747
Student Employment .................................................... 972-7405
Work Study .............................................................. 972-8074
Center for Child Development ......................................... 972-8210
Commuter Central ....................................................... 972-8690

Counseling Center
Counseling Services .................................................... 972-7082
Testing Services .......................................................... 972-7084
English Language Institute ............................................. 972-7544
Financial Aid, Office of Student ....................................... 972-7032
Scholarships (non-University) ......................................... 972-6368
Scholarships (University) .............................................. 972-6343
Toll-Free ................................................................. 1-800-621-3847

Health Services, Student ................................................ 972-7808
International Programs .................................................. 972-6349
Immigration (Prospective Students) ................................... 972-6740
Immigration (Current Students) ...................................... 972-6296
J-1 Scholars/SEVIS ..................................................... 972-8391

Libraries, University
Bierce Library ............................................................. 972-8161
Law Library ............................................................... 972-7330
Science and Technology Library ..................................... 972-7195
University Archives .................................................... 972-6760
Military Services Coordinator and Counselor ....................... 972-7838
Multicultural Development, Office of ................................ 972-7658

Academic Support Services/Access and Retention ................... 972-6769
Ohio Residency Officer .................................................. 972-8638
Pan-African Culture and Research Center ............................ 972-7030
Parking Services ......................................................... 972-7213

Peer Counseling Program .............................................. 972-8288

Photocopying
DocuZip (Student Union) ............................................. 972-7870
Polsky Building .......................................................... 972-2043

Registrar, Office of the University .................................... 972-8300
Registration, records, graduation, scheduling, transcripts, enrollment and degree verification, Ohio residency, and military services
Residence Life and Housing ............................................ 972-7800
Student Engagement and Success, Vice President for .......... 972-7067
Student Judicial Affairs ................................................ 972-6380

Student Union
Information Center ....................................................... 972-INFO (4636)
Reservation Line .......................................................... 972-8699

Tours (of the University) ................................................ 972-7077

WZIP-FM Radio Station ................................................ 972-7105
Zips Programming Network ............................................ 972-7014

Emergency Phone Numbers

Police/Fire/EMS .......................................................... 911
Police (non-emergency) ................................................ 972-7123
Campus Patrol ........................................................... 972-7263
University Switchboard ................................................ 972-7111
Closing Information ....................................................... 972-SNOW (7669)
SECTION 1. Background

HISTORY

The connection between The University of Akron and its surrounding community has been a recurring theme in its history. The institution was founded as a small denominational college in 1870 and has grown to its current standing as a major, metropolitan, state-assisted university that offers a broad range of programs in the arts, sciences, and applied sciences. The University of Akron is a center for learning and a key player in the region's economic and cultural development. It is a leading public university in the Midwest and one of the top 100 public universities in the United States.

The University of Akron's history is a long and proud one — yet at The University of Akron, our eyes are on the future. We are committed to excellence in undergraduate and graduate education, and to the creation and dissemination of knowledge. We are dedicated to the welfare of all students, faculty, contract professionals, staff, and the community at large.

The University of Akron is an educational community of diverse peoples, processes, and programs. While all of us have our individual backgrounds, outlooks, values, and styles, we all share certain principles of personal responsibility, mutual respect, and common decency. Our campus culture requires that we maintain and extend those principles, for without them we cannot thrive as a humane and worthwhile university. To keep ourselves aware of these shared principles, this statement of expectations articulates some of the expectations and responsibilities of a civil climate for learning on our campus.

A CIVIL CLIMATE FOR LEARNING: Statement of Expectations

The University of Akron is an educational community of diverse peoples, processes, and programs. While all of us have our individual backgrounds, outlooks, values, and styles, we all share certain principles of personal responsibility, mutual respect, and common decency. Our campus culture requires that we maintain and extend those principles, for without them we cannot thrive as a humane and worthwhile university. To keep ourselves aware of these shared principles, this statement articulates some of the expectations and responsibilities of a civil climate for learning on our campus.

Principles of Our Campus Culture

Our campus culture acknowledges the importance of all in our community for their participation in our common enterprise as a university. We value the contributions and we respect the needs of students, faculty, contract professionals, staff, admin-
istors, maintenance and service personnel, and everyone else whose work and dedication enables us to pursue our individual and collective academic goals.

Together we maintain an intellectual culture that is accessible, disciplined, free, safe, and committed to excellence. By our behavior with one another we endorse a culture of diversity, celebrating the uniqueness of the individual and developing our understanding and tolerance of differences in gender, ethnicity, age, spiritual belief, sexual orientation, and physical or mental potential. We take responsibility for sustaining a learning culture, nurturing growth and fulfillment in one another and in the larger communities of which we are a part. We insist on a culture of civility, united in our rejection of violence, coercion, deceit, or terrorism. We work to increase collaboration, cooperation, and consensus within rational dialogue characterized by mutual respect and consideration. Ours is a responsible culture. We expect each member of our community to carry out responsibly his or her duties for preserving the integrity, quality, and decency of our environment and our discourse.

Expectations and Responsibilities

To preserve and propagate the Culture of The University of Akron, everyone must engage in certain specific behaviors. Anyone new to this campus must be aware of the expectations we have of each other and be committed to fulfilling his/her responsibility in maintaining our culture.

Inside the Classroom

Inside the classroom, faculty are expected to respect the sanctity of the teaching/learning process by honoring their commitment to students in terms of time, fairness, and enthusiasm. It is the responsibility of faculty to set and enforce the classroom rules of conduct. Faculty members are expected to treat men and women, persons of all colors and ethnicities, and persons with varying abilities, spiritual preference, or sexual orientation with equitable respect and consideration. Faculty should value and pursue excellence in teaching as well as research. Faculty shall not engage in sexual or other forms of harassment or engage in inappropriate dual relationships with students. Faculty must not tolerate academic dishonesty nor discrimination or harassment from students to other students.

Students are expected to respect the sanctity of the teaching/learning process by expressing respect for the faculty member as the organizer and guide through this learning experience, as well as for fellow students. Disruptive, disrespectful, discriminatory, harassing, violent and/or threatening behavior is explicitly prohibited. Academic dishonesty will not be tolerated. Students are expected to take responsibility for their own learning and, in return, can expect responsible teaching from the faculty member. Students should report any unprofessional behavior on the part of faculty members. Students have a right to expect that they will not be sexually otherwise harassed, intimidated, or threatened.

On the Campus

On the campus, everyone is expected to respect and protect the dignity and freedom of each other. There must be the opportunity for expression of all points of view, free from name-calling or ridicule. All members of the University family are expected to be civil and tolerant of others. It is the responsibility of each member of the University community to express dissatisfaction with anyone who fails to meet the responsibility of civility and to request that they do so. In the event that cooperation cannot be attained, proper authorities must be involved to insist upon these minimum expectations. Only by campus-wide compliance to these expectations can we achieve a clear sense of our campus culture and, accordingly, a sense of mutual pride.

Students can expect that all representatives of all departmental and administrative offices will treat them with respect, a sense of cooperation and with concern for their welfare. Students can also expect appropriate coordination of services among departments.

Everyone is expected to respect the campus environment by behaving in ways that protect the safety, order, and appearance of all campus facilities. Each person must take steps to preserve the ecological and aesthetic aspects of the campus.

Additional Behavioral Expectations

All members of the University community are required to abide by all laws and regulations of The University of Akron, the City of Akron, the State of Ohio, and the Federal Government. Students are expected to abide by the Student Code of Conduct and the University Disciplinary Procedures. Faculty, contract professionals, administrators, and staff are expected to abide by all University regulations and procedures.

ACCRREDITATION

Accreditation assures that degrees are recognized and approved by select regional and national education associations, societies and councils. Accreditation serves two fundamental purposes: quality assurance and institutional and program improvement.

There are two types of accreditation of educational institutions: institutional accreditation and specialized accreditation. Institutional accreditation evaluates the entire institution and accredits it as a whole. The University of Akron has been approved by The Higher Learning Commission of The North Central Association of Colleges and Schools since 1914 and has been reaccredited at the highest level as a comprehensive doctoral degree-granting institution.

Institutional accreditation is separate from the accreditation given by professional associations or organizations. Specialized accreditation evaluates particular units, schools or programs within an institution and is often associated with national professional associations or with specific disciplines.

Accreditation provides the security of knowing that the University will honor most credits earned at a similarly accredited college or university. Degrees earned at the University are respected and sought after by prospective employers.

Institutional Accreditation:
The Higher Learning Commission of The North Central Association of Colleges and Schools

Specialized Accreditations:

AACSB International -Association to Advance Collegiate Schools of Business
Accreditation Board for Engineering and Technology
American Association for Family and Consumer Sciences
American Association of Marriage and Family Therapy (provisional)
American Association of Nurse Anesthesia — Council on Accreditation
American Dental Association
American Psychological Association
American Speech-Language-Hearing Association
Association of Collegiate Business Schools and Programs
Commission on Accreditation for Athletic Training Education (CAATE)
Commission on Collegiate Nursing Education
Committee on Allied Health Education and Accreditation of American Medical Association
Council for the Accreditation of Counseling and Related Educational Programs (provisional)
Council on Social Work Education
Foundation for Interior Design Education Research
International Fire Service Accreditation Congress
National Association of Schools of Art and Design
National Association of Schools of Dance
National Association of Schools of Music
National Association of Schools of Public Affairs and Administration
National Certification Board of Pediatrics Nurse Practitioners and Nurses
National Council for Accreditation of Teacher Education
National League of Nursing Accrediting Commission
Ohio Department of Education
Professional Society for Sales & Marketing Training

The School of Law is accredited by or holds membership in the following:

American Bar Association
Association of American Law Schools
League of Ohio Law Schools
Council of the North Carolina State Bar
State of New York Court of Appeals

The University also holds membership in the following educational organizations:
American Association of Colleges of Nursing
American Association of Community Colleges
American Association of State Colleges and Universities
American Council on Education
American Society for Engineering Education
American Society for Training and Development
Council of Graduate Schools
Council for Higher Education Accreditation
Department of Baccalaureate and Higher Degree Programs (National League for Nursing)
International Council on Education for Teaching (associate)
Midwestern Association of Graduate Schools
National Association of Graduate Admission Professionals
National Association of State Universities and Land-Grant Universities
North American Association of Summer Sessions
Ohio College Association
Ohio Continuing Higher Education Association
United States Association of Evening Students
University Council on Education for Public Responsibility
University Continuing Education Association
University Sales Center Alliance

The American Association of University Women grants membership to women graduates with approved baccalaureate degrees from The University of Akron.

Background Information 5
The Campus

Currently, the Akron campus covers 238 acres and encompasses more than 82 buildings. Recent and continued growth with new academic, administrative, and recreational spaces, in addition to major renovations to existing buildings, are attributable to the University’s commitment to provide an "Infrastructure for Academic Success.”

LOCATION

The University is situated in a large metropolitan area. The campus, although centrally located within the City of Akron, features park-like pedestrian areas. Students have easy access to retail outlets, transportation, and churches. The University of Akron is located between East Market Street and East Exchange Street on the eastside of the downtown area. Akron is easily reached by automobile from major national east-west routes (Interstates 80, 90, 76, and the Ohio Turnpike) and north-south routes (Interstates 71 and 77), all of which link Akron to the surrounding states and regions. For airline passengers, limousine service is available from the Cleveland Hopkins International Airport located to the north and Akron-Canton Regional Airport, located to the south.

BUILDINGS

Many of the buildings on campus bear the names of prominent persons who are recognized for their contributions in administration, education, business, science, or University service. Major buildings include:

**Akron Polymer Training Center.** The Akron Polymer Training Center at 225 East Mill St. is an instructional classroom and laboratory facility for Polymer Engineering and Engineering and Science Technology. The facility contains labs for Polymer Science and Polymer Science Technology.

**Arts & Sciences Building.** Located at 290 E. Buchtel, the College of Arts & Sciences Building is occupied by the Dean of the Buchtel College of Arts & Sciences, Computer Science, Economics, Geography and Planning, History, Mathematics, Statistics, Psychology and 16 classrooms.

**Athletics Field House.** The building is adjacent to the Student Recreation Center and the Ocasek Natatorium and is one of the best indoor facilities in the nation. The field house features a full 120-yard Astro Play field, 300-meter six-lane Mondo track, 8,000-square foot strength and condition center, batting cages, indoor golf training facility, locker rooms, sports medicine and rehabilitation center and spectator seating for 1,200.

**Auburn Science and Engineering Center.** Named for Dr. Norman P. Auburn, 10th president of the University, this complex is one of the largest academic buildings in the state. This complex houses the College of Engineering Dean’s office, the Engineering Co-op Office; Mechanical, Electrical, and Civil Engineering; as well as the Science Technology Library and Department of Biology and Biology Research Facility.

**Ayer Hall.** Named for the first dean of the College of Engineering, Frederic E. Ayer, Ayer Hall provides classrooms and offices for the Physics department and Academic Achievement programs.

**Bierce Library.** This building is named for General Lucius V. Bierce, an Akron mayor, lawyer, historian, state senator, philosopher, philanthropist, and soldier. In addition to the book and periodicals collections, the facility houses audio-visual materials, maps, and microforms.

**Buchtel Hall.** Originally built in 1870, this structure was destroyed by fire in 1899 and rebuilt in 1901 (Buchtel Hall II). The administrative center of campus, Buchtel Hall was completely restored in 1973 following a devastating fire in 1971. It is the University’s link with its predecessor, Buchtel College. It provides office space for numerous administrative officials of the University.

**Business Administration Building.** This facility, located at 259 South Broadway, houses offices, classrooms, and laboratory facilities for the dean of the College of Business Administration, the George W. Daverio School of Accountancy, and the departments of Finance, Marketing, and Management.

**Crouse Hall.** Crouse Hall houses the Department of Geology and Environmental Science, the Center for Environmental Studies, classrooms, and some of the College of Education offices as well as the H.K. Barker Center for Economic Education.

**E.J. Thomas Performing Arts Hall.** Named for Edwin J. Thomas, prominent industrialist and dedicated member of the University Board of Trustees from 1962 to 1975, this cultural center was formally opened in 1973. Designed to accommodate concerts, opera, ballet, and theater productions, the hall is a masterpiece in architecture, acoustics, and creative mechanisms. It stands at the corner of University Avenue and Hill Street.

**Folk Hall.** This building, at 150 E. Exchange St., provides modern, well-equipped facilities for the Mary Schiller Myers School of Art. Studios are available for graphic arts, photography, drawing, painting, metalsmithing, ceramics, and computer design. The Emily Davis Art Gallery is also located in the facility.

**Mary Gladwin Hall.** Housing the College of Nursing and biology laboratories, this building was named in honor of distinguished alumna Mary E. Gladwin (1887), who rendered service to the nation during World War I. The $10 million complex opened in 1979 and includes the administrative offices of the College of Nursing, faculty offices, the Center for Nursing, a Learning Resources Center that includes patient care simulation areas, an audio-visual center, and a state-of-the-art computer learning center.

**Goodyear Polymer Center.** This building, located at 170 University Avenue, houses offices for the dean of the College of Polymer Science and Polymer Engineering, the Vice President for Research and Dean Graduate School and the Office of Technology Transfer. The facility features a 200-seat lecture hall, offices, classrooms, and research laboratories for the Institute and Department of Polymer Science.

**Guzzetta Hall.** Located at 157 University Avenue, Guzzetta Hall is occupied by the Dean of the College of Creative and Professional Arts and the Department for the School of Dance, Theater and Arts Administration, Firestone Conservatory and the School of Music in addition to student practice rooms, an experimental theater and a 300-seat recital hall.

**James A. Rhodes Arena.** This structure on Buchtel Common contains an inter-collegiate basketball and volleyball arena with seating for 5,500. The facility also serves as a concert and special event venue, and houses an indoor walking/jogging track, physical education laboratories, classrooms, meeting rooms, department of intercollegiate offices, locker rooms, a sports medicine room and a ticket office.

**Infocision Stadium-Summa Field.** Located at 375 East Exchange, this state-of-the-art multiplex facility was completed in 2009.

**Knight Chemical Laboratory.** This complex is named in honor of Dr. Charles M. Knight, who taught the first courses in rubber chemistry at Buchtel College as early as 1909. Opened in 1979, the building houses the Department of Chemistry and features many innovative laboratories with the most sophisticated safety equipment, as well as classrooms and faculty and administrative offices.

**Kolbe Hall.** Named for the first president of the Municipal University of Akron, this building was remodeled for the School of Communication. Additions to and remodeled space within the building have provided space for faculty and staff offices, TV studio areas, WZIP-FM radio station, computer labs and classrooms. The building also houses the Paul A. Daum Theater.

**Leigh Hall.** Leigh is named in honor of Warren W. Leigh, first dean of the College of Business Administration. This building is occupied by the offices of Distributed Education, Institute of for Teaching and Learning, and Institutional Research, in addition to The John S. Knight Audition.

**Paul E. Martin University Center.** Located at 105 Fr Hill, the Paul E. Martin University Center has changed from a private club serving dues-paying members to a University-operated restaurant and banquet center. The table service restaurant is open for lunch between 11:30 a.m. and 2 p.m. Business and departmental functions, banquets, receptions, and parties can be scheduled during the hours of 7:30 a.m. to noon.

**McDowell Law Center.** Named for C. Blake McDowell, prominent local attorney, alumnus, and benefactor of the University, the center houses the School of Law. Opened in 1973, it provides space for the law library, classrooms, moot courtroom, appellate-review office, seminar rooms, and faculty offices. An addition provides library and support space, and a second expansion has linked McDowell Law Center to West Hall, providing additional administration office space. The law complex stands at the corner of University Avenue and Wolf Ledges Parkway.

**National Polymer Innovation Center.** Located at 240 South Forge Street this building houses the Akron Biomimetics Institute of Akron, Center for BioMatters and Medicine and Polymer Engineering.

**Ocasek Natatorium.** Named for former Ohio State Senator, Oliver Ocasek, the natatorium houses an Olympic-size swimming pool with adjacent spectator seating area, locker rooms, and showers. It also houses eight racquetball courts as well as cardiovascular fitness and strength training areas.

**Olin Hall.** Named in honor of Professor Oscar E. Olin and Mr. Charles Olin, this facility houses the following departments and institutes: Arts & Sciences Careers Program, Ray C. Bliss Institute of Applied Politics, Philosophy, English Language Institute, Sociology, Political Science, Center for Conflict Management, English, Modern Languages, Classical Studies, Anthropology, and Archeology.

**Olson Research Center.** This facility, adjacent to the new Polymer Engineering Academic Center on Forge Street, houses space for the Department and Institute of Polymer Engineering.

**The Polsky Building.** This renovated downtown department store is home to the University Archives, the Archives of the History of American Psychology, the School of Speech-Language Pathology and Audiology and its Audiology and Speech Center, the Department of Public Administration and Urban Studies, the School of Social Work, the Continuing Education Office, the Office of International Programs, the Graduate School’s Office, the Office of Research Services and Sponsored Programs, the Institute for Policy Studies offices, the Center for Health and Social Policy, and Taylor Institute for Direct Marketing. A University food service facility and a campus bookstore are in operation on the High Street level (third floor).

**Polymer Engineering Academic Center.** This 31,900 sq. ft. addition to the Olson Research Center houses departmental, faculty and graduate student offices, the Rubber Division offices of the American Chemical Society, classroom space and a 134-seat lecture hall.

**Quaker Square Complex.** This complex, located at 135 South Broadway, once used by the Quaker Oats Company, now houses the Quaker Square Inn and Quaker Square Residence Hall, in addition to academic uses, retail, banquet, office, and dining facilities.
FACILITIES AND EQUIPMENT

The University’s addion of modern teaching aids demonstrates its recognition of the need, in this technological age, for up-to-date facilities and equipment. Many of these facilities are described below.

Buchtel College of Arts and Sciences

The Department of Anthropology and Classical Studies has a Macintosh-based computer lab which gives easy student access to a collection of several thousand original digital images of ancient Mediterranean buildings, artifacts and art works, to the Perseus program, a digital multimedia database on the Greek world 200,000 images, and a portion of the ancient Greek and Latin literature both in Greek and in translation), and to the Internet and the Web. Additional information on the department can be found at www.uakron.edu/archaeology-classics.

The Department of Biology houses greenhouses, controlled-environment chambers, an animal research facility, a molecular biology research center, modern laboratories, and equipment that includes advanced light microscopes (differential interference contrast, fluorescent), electron microscopes (scanning and transmission), scintillation counters, ultracentrifuges, DNA sequencing apparatus, and physiographs; vehicles, boats and a 400-acre nature preserve are available for fieldwork. Additional information about the department, faculty and programs can be found on the department Web site at www.uakron.edu/biology.

The Department of Chemistry is located in the Knight Chemical Laboratory building. The department is home to state-of-the-art facilities for the spectroscopic identification and characterization of compounds. These include the centers for Laser spectroscopy, Mass spectrometry, Nuclear Magnetic Resonance spectroscopy, and X-ray crystallography. Students have access to the department’s computer lab for internet and Web assignments, data analysis, computations, word-processing and printing. The Chemical Stores facility maintain an inventory of more than 1,100 items, including chemicals, glassware, hardware, and apparatus. Additional information about the department, faculty, and programs can be found on the department Web site at www.uakron.edu/chemistry.

The Department of Computer Science is located on the second floor of the College of Arts and Sciences Building. Students in Computer Science have access to a wide variety of computing facilities, operating environments, languages and software in laboratories maintained in and by the department. In addition to a PC lab, a UNIX lab and a Graduate Research lab, the department has a cluster computer available for research and instruction. Our facilities are state-of-the-art and provide a broad range of experience that is attractive to potential employers.

The University of Akron's Board of Trustees. This complex, which adjoins Auburn Science and Engineering Center, is composed of two academic structures and a parking deck. Schrunk Hall North contains space for Adult Focus, Biology, College of Engineering, Community-Based Assessment and Evaluation, Summit College and Women's Studies. Schrunk Hall South contains space for the School of Family and Consumer Science, ROTC-Military Science, in addition to Summit College's Engineering and Science Technology Department.

Simmons Hall. This building, located at 277 East Buchtel Avenue, is occupied by departments of Student Engagement and Success, University College, and Business and Finance. Major services provided in this building are the Office of Accessibility, Admissions, Career Center, Counselor Center, Student Financial Aid, Office of the University Registrar, University College, New Student Orientation, and Business and Finance (Student Financials).

Stitzlein Alumni Association Center. Named for Harry P. and Raney G. Stitzlein, this recently remodeled building, north of East Buchtel Ave. at Fir Hill, houses the Office of The Alumni Association.

Student Recreation and Wellness Center. This facility, which opened in 2004, houses all of the recreational and fitness equipment, services and programs that support our students’ health, well-being and balanced lifestyles. The building is connected to the Ocasek Natatorium. Student Health Services can also be found inside the center.

Student Union. The Student Union, located in the center of campus, serves as a hub for social and educational activities for students, faculty, and staff. This facility houses various food venues, a ballroom and meeting rooms, theater, game room, student organization offices, Off-Campus Student Services, Student Judicial Affairs, Computer Solutions — the computer technology store, DocuZip copy center, bank, Information Center, Starbucks, Zip Card office and Barnes and Noble Bookstore. Visit our Web site at http://www.uakron.edu/studentunion.

Whitby Hall. Located at 200 Buchtel Common, Whitby Hall is named in honor of G. Stafford Whitby, a pioneer in the development of polymer science. This building is occupied by the Chemical and Biomolecular Engineering, faculty offices and research labs, and a computer lab and classroom.

Zook Hall. Named to honor George F. Zook, president of the University from 1925 to 1933, this Buchtel Commons facility houses the College of Education offices of the Dean, Associate Dean for Academic Affairs and Assistant Dean for Student Affairs, and admission advisement offices. Other facilities include a lecture room that seats 246, general classrooms, a science and mathematics classroom/laboratory, a distance learning classroom, a Center for Literacy, two technology-enhanced demonstration classrooms, two computer-training classrooms, and a multi-media laboratory.

Department of Economics

The Department of Economics is housed on the fourth floor of the College of Arts and Sciences Building in a modern office complex with space for both faculty and graduate students. Economics as a discipline has become increasingly analytic. The department has a computer laboratory for faculty and students. It is equipped with the latest equipment and software in a Windows environment. In addition, the department has a variety of software, including economics tutorials, word processing programs and SAS. The lab is also equipped with a laser printer. Network access allows students to search for books, journal articles, the latest economic data, etc., remotely from either Ohio Link or the World Wide Web. The lab is located in close proximity to the faculty offices which facilitates interaction between faculty and students, and enhances the students' educational experiences. Additional information about the department, the faculty, and the programs is available on the department Web site at www.uakron.edu/economics.

The Department of English is located on the third floor of Olin Hall. The department offers students the opportunity to take composition classes in its state-of-the-art computer classroom. Students have the opportunity to submit written work for literary prizes every spring as well as apply for various English scholarships. The Department hosts a weekly poetry reading as a part of the English Department reading series. The English department has programs and sponsors open mic night featuring poetry and fiction readings by students. Additional information about the department, the faculty, and the programs is available on the department Web site at www.uakron.edu/english.

The Department of Geography and Planning has an instructional computer lab and specialized labs for research and production work in cartography; geographic information systems (GIS), remote sensing, and soils analysis. These labs have a variety of equipment, including a cartographic, GIS, remote sensing, database, spreadsheet and statistical analysis software as well as digitizers, scanners, printers and plotters. The department also houses a diverse collection of maps, aerial photographs and satellite images. Additional information about the department, the faculty, and programs is available on the department Web site at www.uakron.edu/geo.

The Department of Geology and Environmental Science has modern instrumental facilities for field and laboratory studies that include an environmental scanning electron microscope, automated electron microprobe, environmental scanning electron microscope, and automated x-ray diffractometer. An ion-coupled plasma spectrometer, atomic absorption spectrometer, ion chromatograph, and coal and sulfur analyzers support geochemical studies. Environmental magnetism and paleomagnetism of sediments are analyzed with an alternating gradient magnetometer, magnetic susceptibility equipment, spin magnetometer, alternating field demagnetizer, and a pulse magnetizer. Geophysical research is conducted with a gravimeter, field magnetometer, automated resistivity gear, seismic-surveying equipment, ground-penetrating radar, and a field gradimeter. In addition to the suite of equipment used to prepare and analyze soil samples, the department has a Gilford Soil Probe, Zodiac boat, pontoon-supported aquatic drilling platform, one four-wheel drive vehicle, and two 15-passenger vans. Data analysis and presentation preparation are supported by a variety of modern computers, printers, and plotters. Additional information on the department and its programs is available on the department Web site at www.uakron.edu/geology.

The Department of History occupies one wing on the second floor of the College of Arts and Sciences Building. This new office complex includes a multi-media room for Web-based computer work in close proximity to faculty offices, enhancing students-faculty interaction. The endowed interdisciplinary Sally A. Miller Humanities Center is housed within the department and offers fellowships, sponsors speakers and runs pedagogical workshops. The online Journal of Northeast Ohio History, which offers both editorial experience and opportunities of scholarly publication, has its office in the department. The History suite contains three separate seminar rooms, where undergraduate and graduate students work closely with faculty. More information about the department can be found on its Web site: www.uakron.edu/history.

The Department of Modern Languages has a Language Resource Center in Olin Hall. The Language Resource Center contains facilities for students to listen to audio-tapes and view videotapes as a class or individually. Fourteen networked multimedia computers have software for additional language practice and foreign language word processing. Access to the World Wide Web provides students with the opportunity to both read and listen to up-to-date news and cultural information in foreign languages. Magazines and dictionaries are also available for student use. Additional information about the department and its programs is available on the internet at www.uakron.edu/modlang.

The Department of Philosophy is located on the second floor of Olin Hall. It houses a small computer lab and a private library for philosophy students. Brief biographies and pictures of each faculty member in the department can be found on the University Web site at www.uakron.edu/philosophy.

The Department of Physics is located on the first three floors of Ayer Hall. Faculty include research laboratories used for faculty and student research projects, laborato-
proximity of the faculty offices to the computer laboratories encourages regular
second floor of the College of Arts and Sciences Building. It provides students in
practical experience. The department homepage at www
schools.

The Newman Library, providing many current professional journals, is open for students'
research projects and a research laboratory for undergraduate and graduate stu-
dents. Each PC is equipped with Windows XP, Office 2007, Project 2007, Visio 2007, Ora-
cle 10g, SQL Server 2005, Visual Studio, Adobe Studio 8, SAS, SPSS, and many other software applications.

The Carl V. and Clyde A. Fisher Sales Laboratory provides the college with six group lab rooms connected by one-way mirrors to a central monitoring and control room. Sophisticated audiovisual equipment permits the recording of activities in each lab room which can then be shown to students to provide immediate feedback. This facility is a key resource in college programs for training in sales, management, negotiation, leadership, and employment interview preparation.

The University of Akron 2011-2012

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The Gary L. and Karen S. Taylor Institute for Direct Marketing occupies approximately 32,000 square feet on the fifth floor of the Polsky Building, a block away from the CBA and connected by skywalks. The facility boasts a creative lab, an analytical lab, a call center, an applied research center, several direct response laboratories, a student learn-
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The School of Dance, Theatre, and Arts Administration is located in the new Center for Dance and Theatre at Guzetta Hall. The Theatre Program offers gradu-
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College of Education

The offices, laboratories, and other facilities of the College of Education are located in Zook Hall, Chima Hall, Crouse Hall, the James A. Rhodes Health and Physical Education Building, and Infocision Stadium.

The Department of Counseling offers graduate programs leading to the Ph.D. as well as the Master’s degree. The Ph.D. is offered in Guidance and Counseling (with specialties in Counselor Education and Marriage and Family Counseling/Therapy), and Counselor Education (collaborative program with the Department of Psychology in the College of Arts and Sciences). Master’s programs are offered in Counseling, Marriage and Family Counseling/Therapy, School Counseling and Classroom Guidance for Teachers. The department also operates a multidisciplinary clinic, the Clinic for Child Study and Family Therapy. Additional information about the department is available on the internet at www.uakron.edu/education/academic-programs/counseling.

The Department of Curricular and Instructional Studies offers graduate programs leading to the Ph.D in Secondary or Elementary Education as well as the Master’s degree. The Master of Arts programs include Elementary Education with Literacy option, Secondary Education, or Secondary Education with Literacy option. The Master of Science in Curriculum and Instruction leads to licensure in a chosen field. Initial teacher preparation programs are available at the graduate level. The early childhood program prepares teachers to teach age groups from grade three to middle childhood. The middle childhood program prepares teachers to teach grades four through nine. The secondary program prepares teachers of grades seven to twelve to teach language arts, mathematics, science, social studies, and family and consumer science (grades 4-12). The P-12 program prepares teachers of foreign language, music, dance, drama, or visual arts. Endorsement programs in whole language and teaching English as a second language and special education options prepare graduate students to be master teachers. The University Center for Child Development, under the direction of the College of Education, provides child care for children while serving as an experimental learning site for teacher education students. Additional information about the department, its faculty, and programs is available on the internet at www.uakron.edu/education/academic-programs/CIS.

The Department of Educational Foundations and Leadership serves undergraduates and graduate students in the College of Education. The department provides graduate courses in school administration and higher education administration. The department members also teach the core curriculum of historical, philosophic, psychological, and social foundations required in all graduate education programs. They teach, conduct research and supervise theses, dissertations and research proposals. The faculty members have expertise in a wide variety of areas including secondary education, curriculum development, educational assessment, counseling, and school administration.

The Department of Sport Science and Wellness Education prepares students for careers in teaching, athletic training, exercise science, coaching, and related recreational fields. The graduate program in Curriculum and Instruction with Physical Education licensure option P-12 is a collaborative program between the Department of Curricular and Instructional Studies and the Department of Sport Science and Wellness Education. There are laboratories for the study of exercise physiology, anatomy, athletic training, motor behavior, teaching skills (microteaching), and computer utilization in physical and health education. The department has access to the James A. Rhodes Health and Physical Education Building and Infocision Stadium (classrooms, the main gym, a cardiovascular laboratory, a multi-purpose room, and four teaching station areas), the Student Recreation and Wellness Center (cardiovascular fitness and weight training areas) Athletic Field House (sports medicine equipment), Oakes Natorium (classroom, swimming pool, racquetball courts, and cardiovascular fitness and weight training equipment), and Lee Jackson Field (an outdoor running track). Visit the department’s website at www.uakron.edu/education/academic-programs/EL.

The Department of Sport Science and Wellness Education prepares students for careers in teaching, athletic training, exercise science, coaching, and related recreational fields. The graduate program in Curriculum and Instruction with Physical Education licensure option P-12 is a collaborative program between the Department of Curricular and Instructional Studies and the Department of Sport Science and Wellness Education. There are laboratories for the study of exercise physiology, anatomy, athletic training, motor behavior, teaching skills (microteaching), and computer utilization in physical and health education. The department has access to the James A. Rhodes Health and Physical Education Building and Infocision Stadium (classrooms, the main gym, a cardiovascular laboratory, a multi-purpose room, and four teaching station areas), the Student Recreation and Wellness Center (cardiovascular fitness and weight training areas) Athletic Field House (sports medicine equipment), Oakes Natorium (classroom, swimming pool, racquetball courts, and cardiovascular fitness and weight training equipment), and Lee Jackson Field (an outdoor running track). Visit the department’s website at www.uakron.edu/education/academic-programs/EL.

College of Engineering

The offices, laboratories, classrooms, research facilities, machine shops, computer laboratories, and other facilities of the College of Engineering are located in the Akron Business and Science Center, Schrank Hall North, Whitty Hall, and the Olson Research Building.

The master’s programs in the College consist of departmentally administered Master of Science degrees in Chemical and Biomolecular, Civil, Electrical, and Mechanical Engineering. The Dean's Office administers the Master of Science in Engineering degree with specializations in Biomedical Engineering, Polymer Engineering, and Engineering Management. The Doctor of Philosophy in Engineering is offered in the interdisciplinary fields of Environmental Engineering, Mechanics, Systems Engineering, Materials Science, Transport Processes, Biomedical Engineering, Engineering Applied Mathematics, Chemical Reactions and Process Engineering, Microscale Physicochemical Engineering, and Polymer Engineering. This interdisciplinary degree integrates departmental disciplines and is administered by the Dean's Office. There is a coordinated Doctor of Philosophy program with Bowling State University, the University of Cincinnati and the University of Toledo, and a joint MD/Doctor of Philosophy Degree in Engineering with the Northeast Ohio Medical University.

The Department of Biomedical Engineering is located in the Olson Research Center and has classrooms, instructional laboratories and research laboratories. The department provides educational opportunities at both the undergraduate level (BS Biomedical Engineering) and the graduate levels (MS and Ph.D. in Engineering). Biomedical engineering graduate students may participate in the joint MD/Ph.D. in Engineering Degree program between the College of Engineering and the Northeast Ohio Universities College of Medicine. Research faculty members in the Biomedical Engineering Department have strong research programs in biomechanics, instrumentation, signals, imaging and biomaterials and are active participants in the Institute for Biomedical Engineering Research. There are seven major research laboratories located in the Biomedical Engineering Department.

The Musculoskeletal Biomechanics Laboratory is equipped with materials testing equipment and finite element analysis capabilities. This Laboratory can also evaluate and test medical and surgical procedures and applications. The Human Interface Laboratory conducts research in virtual reality, telemanipulation, biofeedback therapy and minimally invasive surgery. The Rehabilitation Engineering Laboratory is equipped to conduct collaborative research on problems related to stroke, head injury and arthritis patients. The Biomedical Instrumentation Laboratory has continuous wave and Doppler ultrasonic equipment, temperature sensing devices, blood pressures and flow monitoring equipment. The Vascular Dynamics Laboratory provides facilities to measure and analyze blood flow through steady and pulsatile in vitro models of cardiovascular importance using techniques such as flow visualization, 2-D laser Doppler anemometry and pulse Doppler ultrasound techniques. The Motion Analysis Laboratory studies all aspects of human movement. This laboratory is equipped with a Vicon Motion Analysis System, two AViTI force plates, a MA-1—EMG system, and associated computer hardware and software. The Biostereometric Laboratory is equipped to perform spatial analysis using three-dimensional sensing technology, which includes a Kern Maps-200 Digiting System and a JK Laser Holographic system for laser holographic tomography.

The Biomechanics and Tissue Engineering Laboratory provides equipment infrastructure to investigate all aspects of biomaterials. The facility includes a wet lab for formulation, development and analysis of biomaterials, including medical applications for nanotechnology. The tissue culture lab has equipment to investigate the interactions of cells and tissues with biomaterials and to develop tissue engineering scaffolds for developing therapies in regenerative medicine. The Orthopaedics Engineering Research Laboratory has equipment designed to apply playful joint movements to a unique custom built gait simulation system and a KUKA six-degree of freedom serial robot arm with an ATI Delta six-axis load cell. It also features an optoelectronic camera system, the Optotrak Certus, for measurement of three-dimensional kinematics of multiple rigid bodies and National Instruments data acquisition equipment. Visit the department's website at www.uakron.edu/engineering/BME.

The Department of Chemical and Biomedical Engineering is located in Whitty Hall and provides educational opportunities for students at both the undergraduate and graduate levels in Chemical and Biomedical Engineering. The Applied Colloid and Surface Science Laboratory has a state-of-the-art laser light scattering facility including a Leel argon-ion laser, a vibration isolated optical bench, a Biowave correlation and probability analyzer, FTIR-Raman, TGA, and an IBM PC-based data acquisition system. The Biochemical and Environmental Bioengineering Laboratory is a satellite center of the Ohio Bioprocessing Research Consortium, housing a state-of-the-art HPLC-MS with additional luminescence, UV/VIS, and IR detectors. The labs are well equipped with several bioreactor assemblies, Sorval RC-SC refrigerated super centrifuge, Perkin-Elmer UV/VIS spectrometer and LS-60B luminescence spectrophotometer, and on-line NAD(H) fluorometers. The Biomaterials Laboratory is available for polymer synthesis and storage include a nitrogen hood, Sephadex separation columns, an oil bath, a dry bath, a vacuum oven, a Buch reactor evaporator, and a Labconco lyophilizer.

The Catalysis Research Laboratory is equipped with high pressure and high temperature reaction vessel, a recycle flow reactor, 250 ml Parr reactor, and a custom built gas chromatography system. The lab also has a Bruker Equinox 55 FTIR spectrometer, a Perkin-Elmer Lambda 920 UV/Vis spectrometer, a HP 5890 GC, a Shimadzu 6020A HPLC, a Spectro Shockwave 50, a Brookhaven EKS 2000 Degaussing, Phoenix 2000 Magnetic Sector, a VG Micromass 602E Mass Spectrometer Series II, a Nicolet Magna-IR 670 Spectrometer Series II, a Nicolet Magna-IR 560 Spectrometer E.S.P. and a Balzers Prisma QMG 200 Mass Spectrometer for in situ catalyst preparation, in situ characterization, temperature programmed desorption of NO, H2, and CO, and in situ reaction studies. The Multiphase and Solids Processing Laboratory is equipped to do research in filtration and flows through porous media. The labs are equipped with a gamma ray instrument for measuring porosity of packed columns and filter cakes, a Frazier Test to measure the permeability of ceramic media, a Hiac Royco BBR particle counter, a Zeta Meter and a Brookhaven EKS Streaming Potential instrument for measuring zeta potentials. An optical system is set up to measure particle sizes and size distributions. The Nonlinear Control Laboratory is equipped with Unix based workstations and a variety of engineering software packages.

The Supercritical Fluids Laboratory, a key lab in the Ohio Supercritical Fluid Technology Consortium, is equipped with FTIR/RAMAN, GC/FID/TCD high pressure phase behavior apparatus, Berry Reactor, 1-liter stirred Reactor, dynamic light scattering, mechanical testing and high temperature GPC. The Thin Film Laboratory is equipped with plasma systems, thermal chemical vapor deposition, and in situ microbalance.

Background Information

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Additional information about the department, its faculty, and programs is available on the internet at www.uakron.edu/engineering/CE.

The Department of Civil Engineering is located in the Auburn Science and Engineering Center and Schrank Hall North and has five major laboratories. In the Environmental Engineering Laboratory, students learn to analyze water, wastewater, and contaminated soils to assess its quality and to determine the most effective treatment technique. The laboratory includes UV-visible spectrophotometers, respirometers, gas chromatographs, high-performance liquid chromatographs, toxicity analyzers, an atomic absorption spectrophotometer, and a total organic carbon analyzer. Water and wastewater analytical kits are available for field studies.

The Wendell Ladue undergraduate computer room is equipped with personal computers and associated facilities for civil engineering students for both class and personal use.

In the hydraulics laboratory a tilting flume enables the student to visualize water flow in streams and rivers. A pressurized pipe module is used to study frictional losses in different sizes pipes. Instructional laboratories introduce several hydraulic software tools such as FlowMaster for pressurized pipe and open channel flow calculations, EPANet, for water distribution pipe network analysis, HEC-RAS, for calculating water surface profiles for natural streams and channels, and Water CAD.

In the soil mechanics and foundation engineering lab, a student learns how to analyze soil by a variety of tests and equipment to determine shear strength, compaction characteristics, and consolidation. In addition to the standard equipment for routine testing, the laboratory has a computer-controlled cyclical triaxial testing system, flexible wall permeameters, and particle image analysis systems.

In the structural materials laboratory, students have the opportunity to observe the experimental verification of the behavior of structural materials, members and connections subjected to tension, compression, bending and torsion. Physical testing is accomplished through the use of two universal testing machines with a maximum capacity of 1,000,000 lbs force. A closed loop servohydraulic testing machine with a maximum capacity of 100,000 lbs., a load frame used to test full scale members and structural systems and a Charpy impact machine. One of the closed loop machines has the capability to apply both axial and/or torsional loads. Further, a full array of data acquisition equipment is available.

The transportation lab is equipped with a complete signal control system supported by video and laser speed/distance detection systems to provide traffic data for systems operation and analysis. The laboratory has a full positioning system to determine the position of probe vehicles on transportation network and the spread spectrum radio transmits the video and traffic data from one such system to another wirelessly.

Additional information about the department, its faculty, and programs is available on the internet at www.uakron.edu/engineering/CE.

The Department of Electrical and Computer Engineering is located in the South Tower of the Auburn Science and Engineering Center. The Department has learning facilities that are available which include laboratories for the study of circuits, analog and digital electronics, control, computers, energy conversion, embedded systems interfacing, power electronics, and electromagnetics/microwaves. Laboratories follow instruction to help the student apply the material learned in class.

In the circuits laboratory, students learn the basics of circuit design, instrumentation, and measurements. The laboratory is equipped with digital oscilloscopes, digital voltmeters, and other basic measuring equipment.

The analog and digital electronics laboratory builds on the circuits sequence and introduces the student to more advanced design tools and concepts, including computer simulation of circuits. In addition to digital oscilloscopes, the laboratory contains signal generators and the like, specialized equipment such as a transistor curve tracer, single-board microcomputers, development systems, personal computers, and other specialized instruments.

The computer laboratory is an open laboratory with free access to students. The laboratory contains networked personal computers with all software necessary for other courses, as well as word processing and networking software. The laboratory also serves courses in computer engineering and many elective courses and for research purposes.

The two control laboratories teach the basics of analog and digital control and are equipped with digital measuring equipment, analog and digital computers and interfacing components.

The energy conversion laboratory teaches electric machines, energy conversion, and machine control. The laboratory is equipped with motors, generators and controllers, both digital and analog. Emphasis is placed on computer control of machines.

The embedded systems laboratory is dedicated to interfacing the computer to the outside world. Students learn how to connect devices to computers, how to program them, and how these can be used in design. The laboratory uses a variety of real-world designs and projects to keep students up to date on this important engineering activity. The equipment in the laboratory includes personal computers, single-board micro computers and industrial controllers in addition to measurement equipment and components.

The power electronics laboratory is taught as part of a power electronics course and teaches the design of power components and circuits for operation at high voltage, high current and high power. Digital controllers and all digital measuring equipment account for a very modern laboratory.

The electro-magnetics/microwave laboratory uses basic experiments in transmission lines, waveguides and antennas to teach the principles involved. In addition to the basic equipment, the laboratory has a shielded room for specialized measurements.

A regularly updated computer laboratory is available for modeling and software development projects in all courses. The senior design project laboratories provide bench space and instrumentation for assembly and test of team projects.

Additional laboratories for signal processing and advanced control exist as part of elective courses.

Additional information about the department, its faculty, and programs is available on the internet at www.uakron.edu/engineering/CE.

The Department of Mechanical Engineering is located in the Auburn Science and Engineering Center. There are eight laboratories in the Department of Mechanical Engineering. The Thermal and Fluid Science Laboratory has internal combustion engines, a supersonic wind tunnel, a subsonic wind tunnel, and a water tunnel. The Heat Transfer Laboratory has temperature measurements systems, a gas laser, and a spectrum of heat exchangers. The Mechanical Measurements Laboratory has a complete complement of transducers, calibration equipment and standards, signal conditioners, analog recording devices and microprocessor-based digital data acquisition systems. The Materials Testing Laboratory has a computer controlled servohydraulic structural testing machine and a uniaxial universal testing machine for performing static, quasi-static, cyclic and dynamic tests on a spectrum of engineering materials and several types of hardness testing equipment. The Parker Hannifin Motion Control Laboratory has hydraulic and pneumatic servo systems as well as serval plot systems controlled by PLCs and computer controllers. The Experimental Mechanics Laboratory has photoelastic strain measuring equipment and associated facilities, coupled with a complete range of strain gage instrumentation for both static and dynamic measurements. The Mechanical Design Laboratory has several major software packages for computer aided design connected to the College’s Engineering Computer Network Facility (ECNF). The System Dynamics and Controls Laboratory is composed of several microprocessors, analog computers, and digital computers, as well as equipment for process control and robotics. The Micro Electro Mechanical Systems (MEMS) Laboratory has instrumentation to build and characterize MEMS devices.

The Vibration and Acoustics Laboratory has electromechanical shakers, sound pressure level instrumentation, and frequency spectrum analyzers for modal analysis. The Metallography and Failure Analysis Laboratory has a complete set of metallographic instrumentation for microstructural analysis of both conventional and advanced engineering materials, and electron microscopes for analysis of failure.

The facilities in the Department of Polymer Science contain extensive laboratories for polymer synthetic chemistry and for the characterization of macromolecules and polymer morphology. A nuclear magnetic resonance laboratory is maintained with several high-resolution instruments. The applied research section of the Maurice Morton Institute of Polymer Science operates a variety of analytical and compound processing laboratories to serve the needs of industry and government agencies for a reliable source of problem solving and data. Processing laboratories include unique blending/compounding and molding facilities.

The Akron Polymer Training Center serves as a laboratory for the processing and testing of rubber and plastic materials. This Center provides classrooms and laboratories for undergraduate students in the Mechanical Polymer Engineering program. The laboratory available in the Department of Polymer Engineering include and the Extrusion Laboratory, the Electromagnetic Radiation and Electron Optics Laboratory, the Thermal and Dielectric Laboratory, the Rheological Laboratory, and the Mechanical Laboratory.

Additional information about the department, its faculty, and programs is available on the internet at www.uakron.edu/engineering/CE.

College of Health Sciences and Human Services

The School of Family and Consumer Sciences is housed in Schrank Hall South, and is accredited by the American Association of Family and Consumer Sciences and OASIS. Graduate programs. Nine laboratories, including a computer center, are available for authentic student learning experiences. All programs provide community experiences through internships, clinicals, and student teaching. These programs have active Advisory Committees of community professionals who provide advice and recruitment assistance. The School’s Center for Family Studies offers one of the region’s most comprehensive regional center for the study and delivery of effective nutrition interventions. The Center also serves as an educational resource for students and the community, provides nutrition services and conducts research. Additional information about the school is available on the internet at www.uakron.edu/colleges/fac/schools/fcs.

The School of Social Work offers CSWE-accredited professional training to social work students by linking them to a variety of local health and human services community agencies and organizations. The commitment and interaction with
a network of agencies in the community serves as a laboratory for students. Additional information about the school, its faculty, and programs is available on the internet at www.uakron.edu/colleges/sslpa/slsps.

The School of Speech-Language Pathology and Audiology provides preprofessional and professional training to students who wish to become speech-language pathologists and/or audiologists. The School houses the Audiology and Speech Center, which functions as a practicum training arm as well as a service agency for referrals in the region who have speech, language, and hearing problems. Additional information about the school, its faculty, and programs is available on the internet at www.uakron.edu/colleges/sslpa/slsps.

College of Nursing

The College of Nursing, located in Mary Glavish Hall, provides professional nursing education at the master’s and doctoral levels. The college is approved by the Ohio Board of Nursing and the master’s program is accredited by the Commission on Collegiate Nursing Education. The College has a Student Affairs Office which provides academic advising services to prospective students. The College contains a state-of-the-art Learning Resource Center, including a computer laboratory exclusively for nursing students. The Nursing Center for Community Health within the College is closely linked to the Akron community and is used by faculty and students for community service, practice, education, and research. The College of Nursing also has a Center for Gerontological Health Nursing and Advocacy whose primary goal is to improve the health care and quality of life for elders.

The Master’s Program includes advanced practice options as a clinical nurse specialist, nurse practitioner, or nurse anesthetist and an advanced role option in nursing service administration. Advanced Role Preparation in Nursing Educator Role and Nursing Management and Business Certificate Programs are also available. Advanced practice specialties include adult gerontological health nursing, psychiatric mental health nursing, child and adolescent health nursing, and nurse anesthesia. Postmasters certificate programs include adult gerontological health nursing, psychiatric mental health nursing, child and adolescent health nursing, and nurse anesthesia. Core courses in the Master of Science in nursing program are offered via distance learning from the Akron campus to the Lorain County Community College (LCCC) campus.

The Doctoral Program in nursing is a joint Ph.D. program with Kent State University. It is the first Joint Doctoral Program in Nursing in the state of Ohio. The curriculum focuses on the development and testing of theories and models of nursing science and nursing practice, the consideration of the social, political, legal and economic implications of health care policies and practices, and the dissemination of knowledge.

Most recently the College of Nursing has been approved to offer a Professional Doctor of Nursing Practice.

Additional information about the college and its faculty, and programs is available on the internet at www.uakron.edu/nursing.

College of Polymer Science and Polymer Engineering

The College of Polymer Science and Polymer Engineering offers only graduate degrees leading to the Master of Science and Doctor of Philosophy in both Polymer Science and Polymer Engineering. In addition, there are the elective courses in both polymer science and polymer engineering for undergraduate science and engineering majors. Options which emphasize polymer engineering have been developed with the College of Engineering through the Departments of Chemical Engineering and Mechanical Engineering for undergraduate students interested in the polymer industry. An option has also been developed in the college of Arts and Sciences in Chemistry which emphasizes polymer science. In addition, an interdisciplinary undergraduate program leading to a degree in Mechanical Polymer Engineering, approved by the faculties of the colleges of Engineering and Polymer Science and Polymer Engineering was started in fall 1995.

The facilities of the Department of Polymer Science and the Maurice Morton Institute of Polymer Science (MMIPS) provide both fundamental and applied research in polymer chemistry, polymer physics, and many aspects of polymer behavior. There are extensive laboratories for polymer synthetic chemistry and for the characterization of macromolecules and polymer morphology. A nuclear magnetic resonance laboratory, operated jointly with the Department of Chemistry, provides several high-resolution instruments supervised by a professional staff. The Applied Polymer Research Center, managed by the University of Akron Research Foundation, but working closely with MMIPS, operates a variety of analytical and compounding/processing laboratories to supplement classroom instruction. Audio Visual Services also designs and helps to enhance general purpose classrooms, offering permanent in-room projection, sound reinforcement and a sophisticated media retrieval system. Additional information about the libraries is available on the internet at http://www.uakron.edu/libraries/.

Library services include reference and research assistance, and user education. Materials can be borrowed from the University Libraries through the circulation department or obtained from other libraries through the OhioLINK network or other resource-sharing arrangements. The University Libraries’ collections contain more than 3 million items: books, periodicals, government documents, curricular materials, microforms, maps, and special materials. University publications include more than 15,000 journals, magazines, newspapers, and other serial publications. Through the library’s memberships in the Center for Research Libraries, the Ohio Library and Information Network, the Online Computer Library Center (OCLC), and the Ohio Network of American History Research Centers, access to vast resources is greatly increased for University students, faculty, and staff.

University Libraries

Library facilities are housed in three separate locations: in Bierce Library on Buchtel Common; the Science Library in Lubin Science and Engineering Center, Room 104; and Archival Services in the Polk Library, upper level.

Audiovisual Services, located in Bierce Library, Room 75, maintains an extensive centralized collection of media hardware and audio-visual resources for student and faculty use. It also has a collection of instructional materials in various media formats (filmstrips, slides, etc) to supplement classroom instruction. Audio Visual Services also designs and helps to enhance general purpose classrooms, offering permanent in-room projection, sound reinforcement and a sophisticated media retrieval system. Additional information about the libraries is available on the internet at http://www.uakron.edu/libraries/.
Information Technology Services Division

The Information Technology Services (ITS) Division supports all of the University’s technology needs including data and communications. In today’s University environment, professors, students, administrators, and staff use the same technology and products. Personal productivity tools, network connectivity, and services provide a common infrastructure for the dissemination of information and communications.

The ITS Division is preparing for the University’s future technology needs with an emphasis on the continued convergence of voice, video and data networks into a single digital network environment.

Distributed Technology Services provides technology and software support services for the campus community.

Computer Labs: A combination of 350 Dell wireless laptops are available for two- and four-hour loans in Bierce Library, the Science & Technology Library, Circulation desk, and the Student Union information desk. The wireless laptops can be used anywhere within the building to access the internet, to get mail, or to do class assignments. A general purpose computer lab of 20 Windows Desktops is available to students in the College of Arts & Sciences building, Room 103B. Both the wireless and general purpose labs have the same productivity tools such as Microsoft Office, SPSS and SAS. All computers have Internet and e-mail capabilities.

Internet Kiosks: 112 strategically placed internet kiosks provide instant access to email and Web registration on campus.

Computer Repair Services provides University of Akron students with knowledgeable assistance in the setup and operation of their personal computer equipment. CRS will install University-approved software and assist in installing hardware and peripherals, which will enable you to connect to the University computer network and the Internet. CRS will also provide hardware diagnostics, software diagnostics (within reason) and basic troubleshooting. CRS will not install or troubleshoot any software or hardware relating to games. If a hardware problem is found or suspected, our student technicians will give you an idea as to where the problem lies. CRS can also help you set up your direct network connection or wireless for residence hall students.

CRS will install (you must have the original media and troubleshoot the following software products):

- Microsoft Windows XP / XP Home, 2000, ME, 98, Vista, 7
- Microsoft Publisher
- Adobe Acrobat Reader
- McAfee VirusScan software

**Please note that all Microsoft software must be purchased by the student prior to installation. An agreement between the University and Microsoft allows the university to sell Microsoft software products to University of Akron students through Computer Solutions at significantly reduced prices.

Location: The Computer Center, 185 Carroll St., Room 129; (330) 972-7626

Hours of Operation: Monday-Friday, 8:00 a.m.-5 p.m.

Technology Learning Support Services (TLSS) provides the campus community with support services for computing hardware and software. Walk-in Support Centers combined with Laptop checkout areas are conveniently located across campus.

Walk-in Zips Support Centers

Bierce 52C

Hours of operation during the Fall and Spring semesters:

- Monday – Thursday: 8 a.m. – 10 p.m.
- Friday: 8 a.m. – 9 p.m.
- Saturday: 10 a.m. – 4 p.m.
- Sunday: 1 p.m. – 10 p.m.

Summer hours are modified and are posted on the Web page.

The Zips Support Desk provides call in and email support: (330) 972-6888; and online chat support (support@uakron.edu) for all students, faculty, and staff.

Hours of operation during the Fall and Spring semesters:

- Monday – Thursday: 8 a.m. – 10 p.m.
- Friday: 8 a.m. – 9 p.m.
- Saturday: 10 a.m. – 4 p.m.
- Sunday: 1 p.m. – 10 p.m.

Summer hours are modified and are posted on the Web page.

Software Training Services develops Web-based tutorials and documentation for student self-service applications, the portal (ZipLine), and Springboard! For more information, visit Software Training Service’s Web site at http://www.uakron.edu/training.

Department of Instructional Services coordinates the activities of Computer Based Assessment and Evaluation, Design, and Development Services, Distance Learning Services, and Audio Visual Services. Access these services through the Instructional Services website at http://www.uakron.edu/its/instructional_services/

Computer Based Assessment & Evaluation supports learning and assessment by providing a variety of online testing, assessment, and survey services. Services offered by CBAE include:

- Design, develop, and deliver online tests
- Provide and support online testing in a proctored testing lab
- Score tests completed on bubble sheets.
- Administer placement testing for incoming university students.
- Provide support for online surveys.

The testing lab is located in Schrank Hall North, Room 152. For lab hours, to make a reservation, or for additional information visit the CBAE website at http://www.uakron.edu/testing.

Design and Development Services provides support for the design and development of web-based and multimedia instructional materials. Our team is composed of instructional, curriculum, graphics, and multimedia designers and producers.

- We provide support for traditional and online courses using the Springboard! enterprise Learning Management System.
- We support departments in the design and development of online programs and courses that provide access and interaction.
- We offer Web site design and other graphic design for a variety of applications.
- We support faculty in the design and development of Web-based and Web-enhanced course materials, including multimedia and assessment.
- We provide services for instructors in digital photography, high definition and conventional videography, video post-production, and image scanning.
- We offer live and on-demand video streaming and hosting.
- We support classroom technologies such as clicker response systems and lecture capture using CourseCast.
- We explore emerging technologies and how they can be used to enhance teaching and learning, and we offer training on a number of these technologies.

Distance Learning Services: Distance Learning Services provides synchronous videoconferencing and Web collaboration capabilities to the classroom environment. Students at the University are able to interact and share materials with students at one or more remote locations via classrooms equipped with state-of-the-art videoconferencing and Web collaboration technologies. In addition to accommodating traditional course offerings, Distance Learning Services also provides:

- A corporate videoconferencing suite ideal for group meetings and personal interviews.
- A relationship with a network of content service providers that specialize in events such as virtual field trips.
- Special event connections that support educational initiatives, i.e. work shops and professional development.

For further information, contact Design and Development Services at (330) 972-2149 or visit the website: http://www.uakron.edu/it/instructional_services.

Audio Visual Services: Audio Visual Services is located on the ground floor of Bierce Library, Room 75.

- Call (330) 972-7811 to order audio visual equipment. Staff will deliver equipment on campus, assist with the set up of the equipment and will help troubleshoot any technical problems.

Hours of operation during the Fall and Spring semesters:

- Monday-Thursday: 7:30 a.m. - 9 p.m.
- Friday: 7:30 a.m. - 5 p.m.

Please call (330) 972-7811 for summer hours.

Network Services provides network connectivity and remote access for faculty, staff and students. Network connections are available in the Residence Halls and the entire campus is covered with 802.11b wireless services. Remote access is provided by the use of VPN access. High speed cable modem service from the local area cable provider is also available at a reduced rate.

UA’s computer network, named UAnet, provides access to:

- ZipLINK – UA’s library catalog
- OhioLINK – the library catalogs of all State of Ohio universities and colleges
- Electronic Mail (e-mail)
- The Internet
- UAnet’s Web pages
- Network file storage and printing
RESEARCH CENTERS AND INSTITUTES

The University Research Council is responsible for encouraging, supporting, and making recommendations pertaining to sponsored and contractual research carried out at the University's departments, schools, centers, and institutes. The council consists of the Vice President for Research and Dean of the Graduate School, the Director of Research Services and Sponsored Programs, representatives of the Faculty Senate, various college deans and institute directors, and General Counsel. Sponsored research activities on campus are coordinated by the Vice President for Research and Dean of the Graduate School and the Director of Research Services and Sponsored Programs.

Akron Global Polymer Academy

Mark Foster, Ph.D., Director

The Akron Global Polymer Academy at The University of Akron assists the College of Polymer Science and Polymer Engineering in creating and disseminating knowledge about polymer science, polymer engineering, and Science, Technology, Engineering, and Mathematics (STEM) education by supporting initiatives in P-16 education and other distributive education ventures. Providing consulting and training services to the polymer industry world wide, the Akron Polymer Training Center is the Workforce Development division of the Akron Global Polymer Academy.

Ray C. Bliss Institute of Applied Politics

John C. Green, Ph.D., Director

The Ray C. Bliss Institute of Applied Politics is a non-partisan, public education and research adjunct of The University of Akron and its Department of Political Science. The broad purposes of the institute, in keeping with the career of its namesake, Ray C. Bliss, are to promote public understanding of politics, to foster useful relationships between applied politics and political science; to promote public comprehension of political organizations and the requirements for their effectiveness; and to improve understanding of continuity and change in American political institutions.

Institute for Biomedical Engineering Research

Daniel B. Sheffer, Ph.D., Director

This institute was established in 1979 to promote interdisciplinary studies in the rapidly growing areas of knowledge which overlap the fields of biology and medicine, on the one hand, and engineering and the physical sciences, on the other. It conducts seminars, courses and degree programs in biomedical engineering in association with the College of Engineering and individual departments. In addition to its research and educational functions, the institute provides a research service to local hospitals and industry, as well as to private and government agencies. The premise for this program is that the combined resources of the University, Northeastern Ohio Universities College of Medicine and affiliated organizations will often permit more cost-effective solutions than would be possible by an individual or group doing the research independently.

The work of the institute is carried out by faculty of the Department of Biomedical Engineering in association with “members” selected from the faculties of The University of Akron and Northeastern Ohio Universities Colleges of Medicine and Pharmacy, as well as from the ranks of area physicians, engineers and scientists. The institute and the department occupy the third floor of the Olson Research Center on the north edge of the campus.

Center for Advanced Vehicles and Energy Systems (CAVES)

The Center for Advanced Vehicles and Energy Systems (CAVES), established in 2005, focuses on research, development, and dissemination of advanced automotive technology and alternative energy systems and their enabling technologies. The Center efforts are geared toward product-oriented research, development, and commercialization of efficient cost-effective solutions to alternative transportation systems, advanced energy sources and storage, and their real-time control platform(s), in addition to providing research services to industry, private and government agencies. CAVES also provides knowledge dissemination through symposia, lectures, seminars, and project-oriented graduate and undergraduate design experiences.

The Electrical and Computer Engineering and Mechanical Engineering departments have in excess of ten faculty and a large number of graduate and undergraduate students, dedicated to providing research services in hybrid vehicle technology, energy systems, and related areas. CAVES activities are housed within a number of facilities, including the Power Electronics Research Laboratory, the Controls Research Laboratory, the Battery Research Facility, the Hybrid Electric Vehicle Facility, and the Pervasive Automation Laboratory, among others.

Over a dozen M.S. and Ph.D. students have graduated in the last five years in CAVES-related fields. These graduates are actively sought after in the utilities, automotive, and related industries.

Center for Applied Polymer Research

Crittenden J. Ohlemacher, Ph.D., Manager

Robert H. Seiple, M.S., Special Projects

Operating under the Institute of Polymer Science and Polymer Engineering, the Applied Polymer Research Center (APRC) provides technical services to thousands of companies. Industrial clients of all sizes gain access to top researchers, knowledge bases, and advanced equipment. With a full-time professional staff, the APRC is dedicated to providing timely and reliable contractual technical services for industrial and government clients. Key areas of technical service include: polymer characterization, additive identification, defect analysis, thermal analysis, dynamic mechanical thermal analysis (RPA, DMTA), chromatography and spectroscopy.

Center for Collaboration and Inquiry

Operated jointly by the Buchtel College of Arts and Sciences and the College of Education, the Center for Collaboration and Inquiry was created in 2002 to promote the practice, research, and dissemination of inquiry-based teaching and learning. The Center supplies the resources and assistance necessary for P-16 teachers to create effective learning environments and fosters collaborative research efforts between experts of both content and educational methods.

Center for Conflict Management and Homeland Security Policy Research

Robert M. Schwartz, Ph.D., Director

The Center for Conflict Management and Homeland Security Policy Research at The University of Akron is dedicated to create a supportive environment for research, academics, and outreach in Emergency Management and Homeland Security. This Center will support and encourage multidisciplinary endeavors in these fields that will make a positive contribution to society.

Center for Economic Education

Fred M. Carr, Ph.D., Director

The center exists to improve the economic literacy of individuals to help them function competently as citizens, producers and consumers.

The center conducts workshops, seminars and economic programs for teachers, students and interested groups. It provides consulting services in the area of economic education and acts as a clearinghouse for the gathering and dissemination of economic education materials and programs. It also fosters an understanding and appreciation of the American economic system.

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Center for Environmental Studies

Robert M. Schwartz, Ph.D., Director

The University of Akron has a long and proud history of the interdisciplinary study of conflict, because understanding the nature of conflict is the first step toward reducing conflict and violence at home, in our communities, workplaces, and schools. The Center for Conflict Management, jointly administered by the departments of Political Science and Sociology, seeks to build on that tradition by combining courses in several departments to enhance the capacity of students to effectively work toward reducing the harms associated with conflict and violence—from interpersonal to international.

For more information, contact the office, 202 Olm Hall, (330) 972-5855, wtypons@uakron.edu, or www.uakron.edu/centers/conflict.

Center for Conflict Management

William T. Lyons, Jr., Ph.D., Director

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Center for Family Studies
Richard Glotzer, Ph.D., Director
The Center for Family Studies, established in 1979, was designed to stimulate and encourage the interdisciplinary study of the family. It serves both the University and the community by fostering collaboration between faculty, students, practitioners and community leaders on curriculum development, educational conferences and seminars, research and training, and public policy relevant to important family issues. The Center is a member of the Sloan (Foundation) Work and Family Research Network and can supply current and credible information on work-family issues to its constituents.

The Center is represented by faculty from the University’s colleges and over 15 disciplines. It also includes leaders from various community systems, such as the schools, hospitals, courts, churches, mental health, social and health care agencies. In addition, the Center has a fellows program in which outstanding faculty and community leaders are named as either fellows, adjunct fellows or senior fellows.

The Center offers certificates in the following specialty areas: General Mediation, Divorce Mediation; and Home-Based Intervention. For more information, please refer to the descriptions of Interdisciplinary and Certificate Programs in this Bulletin or the General Bulletin. Any student, faculty member or community person interested in family issues is invited to call the director to learn how they can participate or learn more about the Center’s activities.

Center for Information Technologies and eBusiness
Bindiganavale S. Vijayaraman, Ph.D., Director
The Center for Information Technologies and eBusiness (CITE) is a multi-disciplinary center within the College of Business Administration. CITE provides an important resource to the students, faculty, and international students to provide educational research and networking opportunities. CITE was created in 2000 with the mission to teach students and develop faculty in the principles and practices of the related disciplines of Information Technology and electronic business. CITE is made up of an advisory board of Information Technology leaders from the Northeast Ohio region and the College of Business Administration faculty, staff and students. The objectives of CITE are to advance information technology (IT), information systems (IS), and eBusiness (EB) programs, research, best practices, and related activities at The University of Akron. Visit the CITE website at http://cite.uakron.edu for more information.

Center for Literacy
Lisa Lenhart, Ph.D., Director
The Center for Literacy furthers the mission of both the University of Akron and its College of Education through a variety of programs that support development of expertise and dissemination of knowledge about language learning. The Center brings preservice, inservice, and university teachers together with children and families in the greater Akron area through a wide range of literacy related projects. Further information about the Center for Literacy can be found at http://www.uakron.edu/education/community-engagement/literacy/.

Center for Organizational Development
Corrine Beller, Director
The Center for Organizational Development in the College of Business Administration was established to meet the training and development needs of the business community. The Center offers management development seminars, programs, conferences, and consulting services designed to enhance the skills of individuals and improve company productivity in a rapidly changing world. The Center specializes in offering dedicated supervisory training and management development programs that are custom designed to meet the specific needs of companies.

Center for Policy Studies
Richard Glotzer, Ph.D., Director
The Center for Policy Studies is a multidisciplinary group of faculty and staff who specialize in studies of public opinion and public policy. Center researchers seek to understand the nature and sources of mass attitudes toward policy issues. Center research also focuses on the causes and consequences of policy decisions. The faculty members who make up the Center study these issues from a domestic and international perspective. The Center also offers its expertise to the public for those who wish to commission studies of public opinion or policy issues relevant to the research specialties of the fellows of the Center.

Center for Public Service Research and Training
Peter J. Leahy, Ph.D., Director
The Center for Public Service Research and Training (CPSRT), established in 2002, is a division of the Institute for Health and Social Policy (IHSP), a multipurpose research institute of the University of Akron. CPSRT’s mission is to assist the local and regional community in policy analysis and evaluation, applied research, professional service and the resolution of social, economic and public management problems. CPSRT offers its services to governments of all levels, to community foundations, to human service agencies and to community organizations. Particular expertise is available in program evaluation and program improvement strategies, strategic program planning, strategic management, community needs assessment, community planning and the conceptualization and design of research projects.

CPSRT draws upon the full range of senior research associates, professional staff and related research centers available in the IHSP, as well as upon faculty and doctoral students from the Department of Public Administration and Urban Studies. In addition, the Center for Policy Studies (CPS), another division of the IHSP, CPSRT also offers clients a state of the art computer assisted telephone interviewing (CATI) facility, a state of the art focus group room and GIS mapping services.

Center for Statistical Consulting
Chand Midha, Ph.D., Director
The mission of the Center for Statistical Consulting in the Department of Statistics is to provide the university community and the community at large with professional assistance in the design and analysis of statistical problems for theses, dissertations, and research. The office is located in the College of Arts and Sciences Building, Room 118A. When requesting statistical consulting refer to the Center’s website at http://www.uakron.edu/statistics/about-us/, fill out the Request for Statistical Consulting form and e-mail it to the department on the available link. The department will contact you for an appointment.

Center for Urban and Higher Education
Bridgie A. Ford, Ph.D., Director
The Center for Urban and Higher Education is an education and research unit within the College of Education with the broad purpose of improving student learning pre-K through higher education. It serves both the University and the community by fostering collaborations among faculty, administrators, students, practitioners, and community leaders in educational conferences and seminars, research, evaluation, and training. The Center designs professional development and school improvement workshops to address the needs of public and private school districts and post-secondary institutions. The Center is located in the College of Education Building, Zook Hall. For more information and when requesting services, please visit the Center’s interactive website at www cuhe uakron.edu or e-mail cuhe1 uakron edu or call (330) 972-8183.

English Language Institute
Established in 1979, the English Language Institute (ELI), part of Buchtel College of Arts and Sciences, offers a program in English as a Second Language (ESL) instruction. Its English for Academic Purposes Program provides non-credit ESL courses to international students and nonnative residents who plan to pursue an undergraduate or graduate degree at The University of Akron or another U.S. university. The intensive, 20-hour per week program also serves individuals who wish to improve their English to meet their own professional and/or personal goals. ESL courses at four levels of English proficiency target language and academic skills needed for successful study at a U.S. university: reading, writing, speaking and listening. Students at all proficiency levels can take the TOEFL Test of English as a Foreign Language (with special permission), the TOEIC Language Proficiency Test (the U-ADEPT), which assesses the speaking
ability of prospective international teaching assistants at UA and determines their readiness to provide classroom-related services in their graduate departments. The ELI serves as a resource on issues relating to language proficiency for University faculty, staff, and students as well as for members of the local community. For more information, visit the ELI web site at www.uakron.edu/eli/, e-mail ua-eli@uakron.edu, or call 330-972-7544.

**Fisher Institute for Professional Selling**

Linda M. Orr, Ph.D., Interim Director

Established through a gift from Ronald and Diane Fisher in 1998, the Ronald R. and Diane C. Fisher Institute for Professional Selling has enabled The University of Akron to establish one of only 13 certified, professional sales programs in the world. It is currently number three in the United States and Canada. The mission of the Fisher Institute for Professional Selling is (1) to enhance the image of the sales profession and to promote professional selling and sales management as rewarding lifelong careers; (2) to provide world-class, high-quality excellence in sales education through our sales major, minor, and certificate programs; (3) to forge strong partnerships with the business community by providing them with top talent and outstanding training and consulting to their sales executives and their business needs; and (4) to conduct research that advances the field of sales. The sales function generates the revenue that enables the rest of the corporation to operate. Jobs are abundant in the field of sales. Current placement is 100% (compared to 37% in all other majors).

Visit the website at http://www.uakron.edu/cba/fisher for more information.

**William and Rita Fitzgerald Institute for Entrepreneurial Studies**

Steven Washington, Director

In 1995, a generous gift from William and Rita Fitzgerald created the Fitzgerald Institute for Entrepreneurial Studies in the College of Business Administration. The Institute was established to promote the principles of free enterprise and encourage entrepreneurial spirit and practices both within the University’s curriculum and throughout the business community. The Fitzgerald Institute focuses on the development of curriculum appropriate for both new ventures and the entrepreneurial development and growth of existing businesses. The Institute provides the needed link between the University and the community of entrepreneurs critical to business development in the future.

For information, contact the Institute, CBA 412, 330-972-7015.

**Institute for Global Business**

Akhlesh Chandra, Ph.D., Director

The University of Akron received special grant from the State of Ohio to expand its offerings of undergraduate and graduate degree programs in international business. As a result of the state grant the College of Business Administration created the Institute for Global Business, which coordinates both credit and noncredit programs in international business. The Institute also offers short courses and seminars to assist in improving international competitiveness of area business.

**Institute for Health and Social Policy**

Peter J. Leahy, Ph.D., Interim Director

Mission Statement: Improving Health and Social Services for Individuals and Communities through Research

The Institute for Health and Social Policy (IHSP), located in the Polsky Building, operates under the direction of the Buchtel College of Arts and Sciences. The Institute, which was established in 1998, is dedicated to the research of health and social services. IHSP values and encourages a multidisciplinary approach to research. IHSP offers graduate students an opportunity to work and learn from some of the top social science researchers in the country. IHSP provides full administrative support for as many as 48 projects per year - projects that are funded by federal, state, and local agencies. Since its opening the Institute’s staff and researchers have brought in more than $43 million in grants and contracts. Research staff members publish project results, give presentations locally, nationally, internationally, and belong to more than 60 professional organizations.

IHSP takes pride in the invaluable staff and dedicated researchers who have contributed to its founding and growth.

IHSP supports research and researchers with the following: analytical experience, research support, research co-op, technical support, facilities, compliance, and administrative/fiscal support.

**Institute of Polymer Science and Polymer Engineering**

Alamgir Karim, Ph.D., Interim Director

The Institute of Polymer Science and Polymer Engineering provides research support and technical service for the graduate research programs in the Department of Polymer Science and the Department of Polymer Engineering. The technical support staff provide instruction and service for students and faculty in laboratories dedicated to electron microscopy (SEM, TEM, EDS, EDX), polymer characterization (SEC, DSC, TGA, light scattering, FTIR, UV-Vis, X-ray, AFM, contact angle goniometer), polymer processing (mixing, extrusion, film formation, molding, filament winding, pultrusion, electrospinning), electronics and electrical repair, machining, glassblowing and a variety of analytical and processing equipment. In cooperation with the Department of Chemistry and Chemical Engineering, the University of Akron NMR Center maintains a satellite nuclear magnetic resonance laboratory equipped with 500 MHz solid-state and solution spectrometers supervised by a professional staff. The Polymer Blending and Compounding Center and the Applied Polymer Research Laboratory provide contract technical service for industry and government.

**Institute for Teaching and Learning**

Helen Qammar, Ph.D., Director

Mission

The Institute for Teaching and Learning at The University of Akron coordinates, promotes, and supports efforts to improve the success of our students both inside and outside the classroom, and to advance and disseminate scholarly investigations into the teaching and learning process as well as discipline-specific research activities involving students.

The ITL’s Responsibilities

- Consulting with colleges, departments, and individual faculty on teaching, learning, evaluation, and assessment issues
- Assisting faculty with service learning and undergraduate research experiences
- Developing and providing targeted professional development activities, information-gathering and sharing
- Documenting, publicizing, and celebrating teaching and learning innovation and excellence
- Providing information, advice, and leadership on teaching and learning matters
- Providing leadership and support for research on the scholarship of teaching and learning, service learning, pedagogy, and inclusive excellence

For more information, visit the ITL website at www.uakron.edu/itl or contact ITL at (330) 972-2574.

**Intellectual Property Law and Technology Center**

Jeffrey M. Samuels, J.D., Director

The Intellectual Property Law and Technology Center in the School of Law is one of approximately 14 such centers in the nation. The center exposes the community to critical thinking in the intellectual property law field, coordinates and implements the Law School intellectual property law curriculum, and hosts an annual Conference on Intellectual Property Law and Policy. The Center works with other schools within the University in the design and implementation of interdisciplinary courses relating to intellectual property law. Commencing the fall of 2005, the Center implemented a new Master of Laws in Intellectual Property Law Program. Beginning August 2011 the Center will administer a joint J.D./LL.M. program in Intellectual Property Law.

**Institute for Life-Span Development and Gerontology**

Harvey L. Sterns, Ph.D., Director

The Institute for Life-Span Development and Gerontology, founded in 1976, coordinates multidisciplinary credit certificate programs in gerontology at the undergraduate and graduate levels. There is a combined graduate certificate program with Kent State University. Combined, the two universities offer a diverse range of graduate courses with aging-related content and join faculty that are nationally and internationally recognized scholars in gerontology.

The Institute of Life-Span Development and Gerontology has grown into a campus-wide program involving more than 63 faculty in over 20 different departments, representing six colleges. Students in the certificate programs carry out field placements at numerous community service settings. There are over 30 courses at the undergraduate and graduate levels. Research, education, training and service support has been received from the U.S. Administration on Aging, National Institute on Aging, U.S. Department of Education, Office of Special Education and Rehabilitation Services, National Institute on Disability and Rehabilitation Research, AARP Andrus Foundation, Ohio Department of Aging, and Area Agency on Aging 10B. The Institute has served as a major site for the Rehabilitation Research and Training Center Consor- tiuim on Aging and Developmental Disabilities involving seven universities in six states. Examples of outreach activities include The Tri-County Senior Olympics.
Microscale Physiochemical Engineering Center (MPEC)

George G. Chase, Ph.D., Director

The Microscale Physiochemical Engineering Center (MPEC) was established in 1996 by faculty with a common research interest in materials composed of very small particles and fibers. These particles and fibers can be used in applications including heterogeneous catalysts, fluid/solid separations, paper/pulp processing, soil remediation, waste water decontamination, and solid transport.

The unique feature of MPEC is the ability to form multi-disciplinary teams of faculty and graduate students to solve specific industrial problems. The Center promotes networking, provides a forum for industrial-university cooperation, and is a consortium of industrial sponsors for fundamental and applied research in microscale physiochemical engineering.

Nursing Center for Community Health

Annette Mitzel, MSN, RN, Director

The Nursing Center for Community Health is a part of the University of Akron’s College of Nursing. It is an education and practice center for College of Nursing faculty and students as well as faculty and students from other health care disciplines on campus.

The Center opened in 1982 as one of the first academic nurse-managed centers in the United States. College of Nursing faculty and students provide non-emergency, episodic health care and health education to community residents who do not have health insurance.

Nutrition Center

The University of Akron Nutrition Center is a comprehensive center for the study and delivery of effective nutrition interventions. It provides the needed link between UA nutrition expertise and the extensive preventative health care needs of the campus and surrounding community. The center serves as an educational resource for faculty, staff, students and the community, provides nutrition services and conducts research in chronic disease treatment, wellness and disease prevention, nutrition information technology, sports nutrition, food safety and sanitation, and community nutrition.

Taylor Institute for Direct Marketing

Michael Kormushoff, Jr., Director

The Taylor Institute for Direct Marketing in the College of Business Administration is the future of direct interactive marketing. With dedicated faculty and staff and a state of the art facility featuring laboratories in telecommunications, TV infomercials, direct response, eMarketing, and marketing analytics, the Taylor Institute is able to provide students with leading-edge skills and practical experiences.

For more information contact Matthew P. Maloney, Marketing and Business Development Manager, at (330) 972-6902 or mmaloney@uakron.edu.

Training Center for Law Enforcement and Criminal Justice

Michael Jalbert, Interim Director

The Training Center for Law Enforcement and Criminal Justice provides Basic Peace Officer Training Academies, Police Refresher Training, Firearms Requalification, and In-service Seminars.

Training Center for Fire and Hazardous Materials

Captain Philip W. McLean, Director of Training

The Training Center for Fire and Hazardous Materials brings the University, government and industry together into one comprehensive regional center to integrate educational programs, fire and hazardous materials training and other applications of fire and safety technology. The Center is chartered under the Division of EMS and offers all State Certified Classes for firefighter certification. The Center employs 100 certified Emergency Services Instructors to fill any training requirement for municipal and business and industry. The center coordinates seminars and workshops presented by the Federal Emergency Management Agency (FEMA), the National Fire Academy, the Division of State Fire Marshal, and other related organizations. Training in all phases of hazardous materials containment and fire prevention and control is provided under contract to various municipalities, industries and agencies. The programs are supported by the faculty of the Fire Protection Technology degree program and the Emergency Management degree program in association with other state and nationally recognized professionals. The Training Center serves a multi-county area, having partnerships with the Medina County Career Center and Cuyahoga Valley Career Center and offering all levels of Fire Classes at the Medina County University Center.

University of Akron Magnetic Resonance Center (UA/MRC)

Peter Rinaldi, Ph.D., Director

The MRC provides UA students and faculty, and the industrial and external academic scientific community, with access to routine and state-of-the-art magnetic resonance facilities and technical expertise. These capabilities include instruments for solution and solid state NMR, electron paramagnetic resonance; and the expertise of technical staff with experience in using these instruments for problem solving in chemistry, biological sciences, and polymer science and polymer engineering. Students and faculty are trained in the use of the instruments and NMR techniques in general through an ongoing educational process. The center has instruments in The Knight Chemical and Goodyear Polymer buildings.

Workforce Development and Continuing Education

Daniel L. Hickey, Director

The mission of Workforce Development and Continuing Education is to serve the people of Northeastern Ohio by offering courses and programs that increase access to The University of Akron, linking it with community, business and industrial workforce needs.

Workforce Development and Continuing Education at The University of Akron provides a wide range of educational, technical, and research services that enhance the effectiveness and quality of workforce learning. In addition, Workforce Development and Continuing Education provides services that require the special expertise of the faculty and staff to better serve the economic and social development of Northeastern Ohio. Grant monies may be available to help with costs.

Student Engagement and Success

Counseling Center

The Counseling Center provides psychological counseling, career planning, educational counseling, testing, outreach, and consulting services to the University community. The Center is staffed by a culturally diverse group of psychologists and psychology trainees. Counseling services are free and confidential to enrolled students. There is a fee for testing services. The Center is located in Simmons Hall, 306. Phone numbers are: Counseling Services (330) 972-7082, and Testing Services (330) 972-7084. Visit our website at http://www.uakron.edu/counseling.

Counseling Services

- Short-term personal counseling and psychotherapy addresses many areas including stress, loneliness, anxiety, and depression; alcohol and drug use; relationships (family, partners, friends), sexual assault; oppression, cultural identity and self-esteem. Biofeedback services are also available for stress management. ULeline is an informative mental health and wellness link on the Web page.
- Career counseling helps students decide on a major and career direction. Students identify interests, values, abilities and goals and relate these to the world of work. Testing and occupational information is available through counseling, workshops, and on website.
- Educational counseling helps students develop educational goals and motivation, as well as effective study skills. A streaming study skills Web video is on the Web page.
- College Survival Kit workshops cover many topics including improving academic performance, career planning, increasing wellness, and personal issues; as well as providing support groups for students of diverse cultures. Brochures are available.

Testing Services

- Numerous testing programs including, CLEP college entrance examinations, career assessments, personality assessments, academic placement testing, on-campus academic testing and learning disorder assessments are available.

Outreach and Consulting Service

- The Center regularly provides speakers for classes, residence halls, student organizations, and administrative offices. Consultation is available for emergency and crisis situations.

Career Center

The Career Center’s mission is to provide career services to all students and alumni of The University of Akron. Career Services for students and alumni include
opportunities to participate in on-campus interviews with representatives from business, industry, education, and branches of the government. Numerous educational outreach are provided throughout the campus community which include a wide variety of topics such as resume writing, job search skills, dress for success, etiquette dining, and mock interviews. In addition, the Career Center offers leadership opportunities for students and sponsors career expos in collaboration with academic colleges, giving students the opportunity to network with hundreds of potential employers. The Career Center maintains a career resource library that enables students and alumni to utilize computers, employer literature, videotapes, job search information, job openings, and career-related books and periodicals. Career consultations are available and may be scheduled by contacting the Career Center. The Career Center is located in Simmons Hall, Room 301 and can be contacted at (330) 972-7747 or via the web at http://www.uakron.edu/career.

The Career Center also houses the Office of Student Employment. Student Employment helps students find part-time job opportunities both on and off campus. The Office of Student Employment can be reached at (330) 972-7405.

Student Health Services

Student Health Services, located in the Student Union, is the primary care center on campus. Located on the third floor, this facility offers various food venues, ballroom and meeting rooms, theater, gaming facilities for campus, U.S. mail, and United Parcel Service (UPS); literature distribution; and class support files.

The Donfred H. Gardner Theatre

Located on the second floor, screens second-run movies as well as occasional first-run sneak previews. The theater also hosts special events and performances.

The Information Center

Located on the second floor, operates seven days a week. The Information Center staff can answer questions regarding department and student organizations, on-campus events, and the Roo Express. Laptops can be checked out for use in the Union at the Information Center. Please call (330) 972-4636 if you need a question answered.

Room Reservations

Can be obtained in the Student Union. Call (330) 972-8889 to reserve the ballroom and meeting rooms located in the Student Union.

Computer Solutions

Located on the third level, is The University of Akron's computer technology store. As an education reseller, personal computer hardware, peripherals, and software are available at educational pricing. The store is a service for students, faculty and staff. Computer Solutions is an authorized reseller of Apple and Dell products.

The Game Room

Located on the first floor, has a pool hall, bowling lanes and video gaming. The bowling lanes feature Extreme glow-in-the-dark bowling. Bowling and Billiards physical education classes are conducted in the Game Room.

Off-Campus Student Services

Off-Campus Student Services resource center and administrative offices are located in the Student Union, near the commuter lounge. The center provides up-to-date information on apartments and housing around town and transportation options to get to campus including carpooling. Educational programs are designed by the center to meet the needs of students living off campus. Much of the general information is posted to the website at www.uakron.edu/offcampus. For additional information students may stop in for assistance during posted hours or reach the center by phone at (330) 972-8690.

Student Judicial Affairs

Student Judicial Affairs is the department that receives and reviews referrals that allege violations of the University's Code of Student Conduct. The University of Akron has the responsibility to protect the rights, health and safety of our academic community and to ensure that the members of our community may pursue their educational goals without undue interference. The development and enforcement of standards of conduct for students is an educational endeavor, which fosters students' personal and social development. Students are expected to abide by applicable federal, state, and local laws and may be held accountable for any violations in which they are involved. Confidentiality is maintained and records of proceedings are released in accordance with the Family Educational Rights and Privacy Act (FERPA). All hearings follow written procedure and respect the rights of the individuals involved. By becoming familiar with the definition of student misconduct, students can be aware of their rights and responsibilities as a student at The University of Akron and have a successful, rewarding experience.

Students are advised to become aware of the disciplinary procedures published in the University Rules and Regulations Concerning Campus Conduct and Student Discipline Procedures (Code of Student Conduct). The Code of Student Conduct, can be accessed by visiting www.uakron.edu/sja or visiting Student Judicial Affairs, Student Union 216. For more information regarding the Code of Student Conduct, please contact Student Judicial Affairs at sja@uakron.edu or (330) 972-6380.

The Student Union

The Student Union, located in the center of campus, houses numerous functions of student life and student engagement, and serves the students, faculty, and staff. This facility offers various food venues, ballroom and meeting rooms, theater, game room, student organization offices, Student Judicial Affairs, Computer Solutions—the computer technology store, ZipCard office, DocuZip copy center, bank, Information Center, Barnes & Noble Bookstore, Planet Underground, and Starbucks Coffeehouse. Visit our website at www.uakron.edu/studentunion.

Food Areas. On the first floor is Zane's convenience store, which has a variety of items, including sundry items for the busy student. On the second level are Subway, Auntie Anne's, Sizzlin' Zone, the Union Market, and Starbucks.

• DocuZip Copy Center, located on the second level, offers the following services: copying, including color, oversized and reduced copies; binding of materials; mailing facilities for campus, U.S. mail, and United Parcel Service (UPS); literature distribution; and class support files.

• Barnes & Noble Bookstore is located on the first level. The primary purpose of the Bookstore is to make available books and supplies required for coursework. In addition, the store also carries a wide range of classroom supplies, paperbacks, engineering and art supplies, photo supplies, greeting cards, University memorabilia and clothing.

• The Donfred H. Gardner Theatre, located on the second floor, screens second-run movies as well as occasional first-run sneak previews. The theater also hosts special events and performances.

• The Information Center, located on the second floor, is operated seven days a week. The Information Center staff can answer questions regarding department and student organizations, on-campus events, and the Roo Express. Laptops can be checked out for use in the Union at the Information Center. Please call (330) 972-4636 if you need a question answered.

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• The Game Room, located on the first floor, has a pool hall, bowling lanes and video gaming. The bowling lanes feature Extreme glow-in-the-dark bowling. Bowling and Billiards physical education classes are conducted in the Game Room.

Student Services Center

The Student Services Center's primary purpose is to act as the customer service arm of the Registrar, Financial Aid, and Student Accounts offices. Students needing assistance in any of these areas should first seek help from the Student Services Center rather than from the specific offices. Center staff are cross-trained in all of these service areas, and our goal is to assist students in one-stop. Quite often student issues involve more than one office, and cross-trained Center staff are able to help answer questions without passing students from person to person or from office to office.

The Student Services Center is located on the first floor of Simmons Hall.

Office of Accessibility

The University welcomes students with disabilities. The mission of the Office of Accessibility is to provide students with full access to and the opportunity for full participation in the academic environment. We are advocates of social justice for students with disabilities and work to end oppression by examining the social, cultural and institutional barriers to inclusion of all students. We embrace the diversity of our student body and celebrate a culturally sensitive and accessible campus through outreach, partnership, and advocacy with many university departments. Our goal is to provide reasonable accommodations and a supportive, well-resourced environment to students with disabilities in order to promote student success in the university environment. For more information, call (330) 972-7928 or (330) 972-5764 (TDD), see our Web site at www.uakron.edu/accessibility, or visit Simmons Hall Room 105.

Center for Child Development

The University of Akron Center for Child Development provides a variety of early childhood programs which are open to students, faculty, staff, and the community. The trained teaching staff provides a stimulating learning environment and opportunities for growth in all areas of development—social, emotional, physical and intellectual. The Center for Child Development is open year round between 7:30 a.m. and 6:00 p.m. Monday through Friday. The program offers hourly flextime and half-day programs for children three to five years old and toilet trained. Full-day sessions are available year round for children 18 months to five years old.

A summer program is also offered for school-aged children. This program is offered from 7:30 a.m. until 6:00 p.m.

For more information call the Center for Child Development, 330-972-8210.

Student Health Services

Student Health Services, located in Suite 260 of the Student Recreation and Wellness Center, assists students in achieving their educational and personal goals by addressing their health care concerns while they are enrolled at The University of Akron. The student who becomes seriously ill or suffers a serious injury on campus should be taken to an emergency room at one of the local hospitals without delay. Those persons present in this kind of emergency should call University Police or 911 immediately. The University assumes no legal responsibility or obligation for the expenses of such transportation or for medical services at the hospital.

Student Health and Accident Insurance, designed specifically for students, is available to students enrolled for six or more credit hours. The student insurance provides coverage for such items as hospitalization, surgery, and in-hospital medical care. More information on the student health insurance plan is contained in brochures available at Student Health Services or online at www.learniainsurance.com.

For more information regarding Student Health Services contact (330) 972-7808 or visit the website at http://www.uakron.edu/healthservices/index.htm.

Student Judicial Affairs

Student Conduct is the department that receives and reviews referrals that allege violations of the University’s Code of Student Conduct. The University of Akron has the responsibility to protect the rights, health and safety of our academic community and to ensure that the members of our community may pursue their educational goals without undue interference. The development and enforcement of standards of conduct for students is an educational endeavor, which fosters students’ personal and social development. Students are expected to abide by applicable federal, state, and local laws and may be held accountable for any violations in which they are involved. Confidentiality is maintained and records of proceedings are released in accordance with the Family Educational Rights and Privacy Act (FERPA). All hearings follow written procedure and respect the rights of the individuals involved. By becoming familiar with the definition of student misconduct, students can be aware of their rights and responsibilities as a student at The University of Akron and have a successful, rewarding experience.

Students are advised to become aware of the disciplinary procedures published in the University Rules and Regulations Concerning Campus Conduct and Student Discipline Procedures (Code of Student Conduct). The Code of Student Conduct can be accessed by visiting www.uakron.edu/sja or visiting Student Judicial Affairs, Student Union 216. For more information regarding the Code of Student Conduct, please contact Student Judicial Affairs at sja@uakron.edu or (330) 972-6380.
Campus Safety and Security Information

Safety and Security
This information is provided as part of The University of Akron’s commitment to safety and security on campus and is in compliance with the Federal Crime Awareness and Campus Security Act of 1990.

The Campus
The University employs many people to keep the campus safe and secure. The Division of Public Safety provides for student and employee safety and security through the departments of University Police and Environmental and Occupational Health and Safety. The Division of Student Engagement and Success is responsible for security and safety policies governing residence halls, fraternities, and sororities and for teaching students about security and crime prevention.

It is the intent of the University to continue and enhance current safety and security education and awareness programs throughout the year. The purpose of these programs is to assure that the campus community frequently receives information and instruction on University crime and safety policies and procedures, and on drug and alcohol control and prevention.

A safe campus can be achieved only with the cooperation of the entire campus community. The University hopes students will read and become familiar with this material and be responsible for their own safety and the security of others.

University Police
Campus law enforcement is primarily the responsibility of The University of Akron Department of Police. University police provide 24-hour-a-day patrol protection to the campus, parking lots, residence halls, and on-campus fraternity and sorority houses. The police station is located in the Physical Facilities Operation Center at the corner of Hill and South Forge streets and is staffed 24 hours a day. The University’s 40 police officers are commissioned by the State of Ohio with full law enforcement authority and responsibilities identical to the local police or sheriff. The UA Police Department works closely with the Akron Police Department and other law enforcement agencies. Reports are exchanged every business day so that both agencies receive pertinent information. Information is shared through personal contacts and by phone and radio. University and City of Akron police regularly work together at large campus events such as athletic competitions and dances.

UA Police officers have met or exceeded the training standards of the Ohio Peace Officers Training Council. They also receive ongoing in-service and specialized training in first aid, CPR, firearms, defensive tactics, legal updates, and other skills.

UA Police officers enforce laws regulating underage drinking, the use of controlled substances, weapons, and all other incidents requiring police assistance. They also are responsible for public safety services such as crime reports, medical emergencies, fire emergencies, and traffic accidents.

Incidents which may not rise to the level of a violation of law are referred to Student Judicial Affairs. The Code of Student Conduct explains the University’s disciplinary process and is available through Student Judicial Affairs.

It is the goal of every member of the University Police Department to promote, preserve, and deliver feelings of safety and security through quality services to the members of the University community.

Drug and Alcohol Prevention
The issue of drug and alcohol abuse concerns the entire University community as well as our surrounding neighborhoods. The federal Drug Free Schools and Communities Act Amendments of 1989 require schools, colleges, and universities receiving federal financial assistance to implement and enforce drug and alcohol prevention programs for students and employees.

The University of Akron prohibits the illegal use, possession, sale, manufacture, or distribution of drugs and alcohol by all students and employees on University premises or as part of any University activity. Any misuse of substances by University students and employees that presents physical or psychological hazard to individuals also is prohibited.

It is the responsibility of The University of Akron to adopt and implement a drug prevention program for its students and employees. The University as an institution, and each of us as individuals, must eliminate the use of illicit drugs and alcohol that contribute to the unrecoverable loss of time, talent, and lives.

Crime Prevention
Through the Office of Community Policing/Crime Prevention, University police officers provide educational programs to students and employees on personal safety, sexual assault/acquaintance rape prevention, drug and alcohol abuse prevention, and related topics. The University Police Department welcomes the chance to talk with any campus group. Candid dialogue between UA Police and the public has created greater confidence in the community to report unlawful activities. These programs are scheduled when requested.

Potential illegal actions and on-campus emergencies can be confidentially reported by any student, faculty, or staff member. Complaints received by UA police which fall outside their jurisdiction will be referred to the appropriate agency, or the complainant will be provided a phone number where the complaint can be filed. Likewise, other agencies refer complaints to University Police when appropriate. The University Police encourage prompt reporting of crimes.

Security considerations in maintenance are a high priority. Police officers patrol parking lots 24 hours each day. UA police also offer assistance to motorists with battery jumps, inflating tires, unlocking vehicles, and obtaining fuel.

To request nonemergency assistance, call extension 2911. To schedule an appointment for an educational program, call extension 2911.

For emergencies, dial 911 from any campus telephone or 330/972-2911 from a cell phone.

Student Campus Patrol
A student escort service operates 5 p.m. to 1 a.m. seven days a week for the safety of anyone walking alone on campus during the evenings. Summer and break hours vary. By calling extension 7263, an escort will come to the student’s location and accompany him/her to any campus building or parking lot.

Employed and trained by The University of Akron Police Department, the campus patrol teams are easily identified by labeled blue jackets or maroon shirts. These teams assist the University police in patrolling campus parking lots and other campus areas and report suspicious individuals or activities directly to the police dispatch center.

Emergency Phones
Yellow or red emergency phones are directly connected to the UA Police Department. These phones are strategically located throughout campus pedestrian walkways and inside parking decks. Police respond to the activation of any emergency phone receiver, even if no words are spoken.

Outdoor security phones are at the main entrances of all campus residence halls. UA Police and other campus numbers can be dialed on these phones.

If using an off-campus phone, dial 330-972 before the campus extension.

Campus Buildings
Most University academic facilities are open to the public from 7 a.m. until the latest evening classes let out. Administrative buildings are generally locked at 6 p.m. When the University is closed, all buildings are locked and may be opened only by authorized personnel.

Health and Safety
Members of the Department of Environmental and Occupational Health and Safety routinely inspect the campus for environmental and safety concerns. The Department of Physical Facilities maintains University buildings and grounds and regularly inspects facilities and promptly makes repairs to ensure safety and security. University Police work with both units to respond to reports of potential safety and security hazards, such as broken windows and locks. UA police also work with physical facilities personnel to help maintain adequate exterior lighting and safe landscaping practices.

Personal Responsibility
The cooperation and involvement of students, faculty, and staff in any campus safety program is absolutely necessary. All must assume responsibility for their own safety and security of their property by following simple, common sense precautions. For example, although the campus is well-lighted, everyone should confine their movements to well-traveled areas. There is safety in numbers, and everyone should walk with a companion or with a group at night. Valuables should be marked with a personal identification number in case of loss or theft. Bicycles should be properly secured when not in use. Automobiles should be locked at all times. Valuables and purses should never be lying in view in a car but locked in the car trunk for safekeeping. Protect your identity and personal information.

Crime Statistics
The University of Akron Police Department complies with reporting standards set by the United States Department of Education guidelines. Our crime statistics can be found at our police department website: www.uakron.edu/safety/annual-safety-report. A hard copy of crime statistics can be obtained at The University of Akron’s Police Department located at 146 Hill St., Akron, OH 44325-0402.
EMERGENCY PHONE NUMBERS
Call extension 911 on campus to reach UA police immediately.

- Police ................................................................. 2911
- Campus Patrol .................................................... 7263
- (Police Nonemergency) .......................................... 2911
- Environmental and Occupational Health and Safety .... 6866
- Fire ................................................................. 911
- EMS/Medical ..................................................... 911
- Electrical/Plumbing .......................................... 7415
- Hazardous Materials .......................................... 2911
- Closing Information ........................................... 7669

Emergency numbers are monitored 24 hours a day. If calling from an off-campus phone, dial 330-972 and then the four-digit number you wish to reach. Use 911 for emergencies when dialing from all campus extensions.

Graduate School

George R. Newkome, Ph.D., Vice President for Research and Dean
Mark B. Tausig, Ph.D., Associate Dean

OBJECTIVES

The purpose of the Graduate School is to provide a quality program of education by the following means:

- Advanced courses in various fields of knowledge beyond the baccalaureate level.
- Opportunities to develop and apply research techniques and to use the resources appropriate to various graduate programs.
- Advancement of student’s knowledge for the benefit of mankind through the efforts of its faculty and students.

Nature of Graduate Education

The Graduate School provides a qualified student with education which may be required for the full development of scholarly and professional capacities, subject to the criteria developed by graduate departments.

Graduate education involves the extension of knowledge. However, it is by no means a mere continuation of undergraduate study. At its best, graduate education is characterized by an able and enthusiastic advanced student who joins faculty leaders to form a community of scholars dedicated to the common pursuit of truth. Critical analysis, independence of thought, originality of method, intensity of purpose, freedom from bias, thoroughness of inquiry, keenness of perception and vital creativity combine to produce in the successful student both the professional competence and the breadth of understanding essential to leadership in many areas of human endeavor.

History of the Graduate School

Graduate study began a few years after Buchtel College opened its doors, and the first earned master’s degree was conferred in 1882. The College of Education awarded its first master’s degree in 1924, the Colleges of Engineering and Busi- ness Administration in 1959, the College of Fine and Applied Arts in 1967 and the College of Nursing in 1979. The School of Speech-Language Pathology and Audiology (previously the Department of Speech and later, the School of Communicative Disorders), now housed in the College of Fine and Applied Arts, was formerly a part of the Buchtel College of Arts and Sciences and conferred a master’s degree in 1963. The first earned doctoral degrees were conferred in 1959. Professor Charles Bulger was appointed first dean of graduate work in 1933, and he continued in that capacity until 1950. Professor Ernest H. Cherington, Jr. served as director of graduate studies from 1955 to 1960 and as dean of the Graduate Division from its establishment in 1960 to 1967. Dr. Arthur K. Brinnnall was appointed dean of Graduate Studies and Research in 1967 being succeeded in 1968 by Dr. Edwin L. Lively. Dr. Claibourn Griffin succeeded Dr. Lively in 1974 and served in that capacity until 1977. Dr. Joseph M. Walton, associate dean of Graduate Studies and Research, was administrative head of the Graduate School during the 1977-78 academic year. Dr. Alan N. Gent was appointed dean of Graduate Studies and Research in 1978 and served in that capacity until 1986. Dr. Joseph M. Walton served as acting dean of Graduate Studies and Research from 1986 until 1989. In 1989 Dr. Patricia L. Canell became dean of the Graduate School. Dr. Charles M. Dye was named interim dean in 1993 and became the dean of the Graduate School in 1995 until his retirement in July 2000. Dr. George R. Newkome was appointed Vice President for Research and Dean of the Graduate School in January 2001.

The administrative functions of the Graduate School include establishment of suitable entrance requirements, admission of qualified students, maintenance of high-quality instruction and approval of graduate requirements for advanced degrees.

Graduate Programs

A qualified student who has completed the baccalaureate program with sufficiently high grades may continue studies through the University’s Graduate School in a program leading to the master’s degree as well as to the doctoral degree. An undergraduate student who qualifies may enroll in certain graduate-level classes and apply the credits earned to the total required for the baccalaureate degree. To receive graduate credit for the courses, however, the student must first be admitted to the Graduate School.

The Graduate School offers programs of advanced study leading to the degree of Doctor of Philosophy in chemistry, counseling psychology, elementary education, engineering (biomedical, chemical, civil electrical, engineering applied mathematics, mechanical, and polymer), guidance and counseling, history, integrated bio-science, nursing, polymer science, psychology, secondary education, sociology, and urban studies and public affairs. The Doctor of Education degree is offered in educational leadership. The Doctor of Philosophy programs in nursing and sociology are joint programs with Kent State University. The Doctor of Audiology (Au.D.) Program is a joint degree program administered by The University of Akron and Kent State University. The Doctor of Philosophy program in urban studies and public affairs is a joint program with Cleveland State University. Further, the school also
Graduate Faculty and the Graduate Council*

The graduate faculty is comprised of those members of the faculty who hold appointments at the rank of assistant professor or above and teach graduate courses, supervise theses and dissertations and are generally responsible for the content in the graduate programs at the University. They are appointed by the dean of the Graduate School after recommendation by the department, college dean and Graduate Council. Guidelines for recommendation and appointment include the following:

- quality and experience in upperlevel and graduate-level teaching,
- possession of terminal degree in field,
- scholarly publication record,
- activity in research, and
- activity in profession or discipline.

The purpose of the graduate faculty is to encourage and contribute to the advancement of knowledge through instruction and research of highest quality, and to foster a spirit of inquiry and a high value on scholarship throughout the University. The graduate faculty recommends a student who has been nominated by the student's college faculty for the appropriate master's or doctoral degree.

Graduate Council is elected by the graduate faculty. Membership in the council presently includes two members from the College of Engineering, two members from the College of Business Administration, two members from the College of Education, four members from the Buchtel College of Arts and Sciences, one member from the College of Creative and Professional Arts, one member from the College of Health Sciences and Human Services, one member from the College of Nursing, one member from the College of Polymer Science and Polymer Engineering, and one student member elected yearly by the Graduate Student Council. Members serve three-year terms and may not succeed themselves. The dean of the Graduate School serves as chair of both the graduate faculty and the Graduate Council.

The functions of the council include examination of proposed graduate programs and course offerings, recommendation of policy for all phases of graduate education, recommendation of persons for membership in the graduate faculty and advising and counseling the dean in administrative matters.

*An exclusive listing of graduate faculty and Graduate Council can be found in the “Directory” of the Graduate Bulletin.

Graduate Student Government

All registered graduate students at the University are constituents of the Graduate Student Government (GSG). The government council consists of elected representatives from each of the graduate departments, an executive board of officers, and a faculty advisor.

The objectives of GSG are to govern graduate student affairs, represent graduate student sentiment, and promote interdepartmental social exchange and interaction between students. These objectives are met by appointing members to participate in various administrative committee meetings, such as the Faculty Senate, Graduate Council and Board of Trustees meetings.

Anyone wishing more information or anyone who wants to air a complaint, problem or suggestion concerning graduate students may contact the Graduate School or attend the GSG meetings, where all graduate students are welcome.

Other Graduate Student Organizations

Chi Sigma Iota-Alpha Upsilon Chapter
Counseling Psychology Graduate Student Organization
Graduate Nursing Student Association
Industrial/Organizational Psychology Graduate Students
Master of Social Work Student Association
Minority Graduate Student Council
Polymer Engineering Student Organization
Polymer Science Graduate Student Organization
Public Administration and Urban Studies Student Association
Student Association for Graduates in Education (SAGE)
Nonaccredited American School Graduates

A student holding a baccalaureate degree from a non-accredited American college or university, is required to complete at least 10 semester credits of postbaccalaureate work at a 3.00 level before being considered for admission to the Graduate School. The accreditation status of the school at the time of the student’s graduation shall apply. The student should consult with the department chair in the major field to develop a postbaccalaureate program.

Transfer Students

A graduate student matriculated in the Graduate School of another college or university who wishes to transfer to The University of Akron to continue graduate education must be in good standing at the other school.

Entrance Qualifying Examinations

The use of examinations to determine admissibility to enter a graduate program or eligibility to continue in one is the prerogative of the departments offering graduate programs. The department has the right to select the examination and minimum acceptable level of performance. Information and procedure may be obtained from the chair of the appropriate department.

Classification

All students are identified by the Graduate School as being in one of the following categories. Any change must be arranged through the Graduate School.

- **Full Admission** may be given to any applicant who desires to pursue a graduate degree and has a baccalaureate degree from an accredited college or university with an overall grade-point average of 2.75 or better or 3.00 for the last two years (64 semester credits or equivalent); or holds an advanced degree from an accredited college or university or equivalent, plus satisfactory evidence of competence in English.

- **Conditional Admission** may be granted to a person who has not yet attained the minimum acceptable level of performance. Information and procedure may be obtained from the chair of the appropriate department.

- **Provisional Admission** may be granted to a person who has not met all of the requirements for full admission (2.74-2.5 overall GPA or 2.75 over the last two years). This admission status permits a student to take up to 15 semester credits of graduate coursework. Graduate courses taken under this admission status may be applied to a graduate degree program, but only when all requirements for full admission have been met.

- **Deferred Admission** may be granted if the applicant’s record does not meet provisional admission standards. After completion of a postbaccalaureate program of study, with an appropriate GPA, as prescribed by the department (usually two to five courses), the student may be reconsidered for provisional admission to the Graduate School. Graduate-level coursework cannot be taken by a student under the deferred admission status.

- **Conditional Admission** may be granted to a person who has not yet attained the required proficiency in English. This proficiency can be demonstrated by an official TOEFL score of at least 550 (213 on the computer-based TOEFL) or by the successful completion of courses offered by the University’s English Language Institute (ELI). Students may not enroll in graduate courses until the English proficiency requirement has been satisfied. Note: Some academic departments require higher TOEFL scores.

- **Non-Degree Admission** may be granted to a person who wishes to take particular courses but who is not working toward a graduate degree. This admission status permits a student to take unlimited credits of graduate coursework. Graduate courses taken under this admission status may be applied later to a graduate degree program, but only when all requirements for full admission have been met.

- **Special Workshop status** is for a person permitted to take workshops for graduate credit without being admitted to Graduate School. Such permission is granted by the workshop director upon receipt of a signed statement of possession of a baccalaureate degree by the applicant, and terminates upon completion of this workshop. A student admitted to special workshop status must apply through regular channels for any other category. A maximum of six workshop credits may be applied to degree work at a later date if the applicant is given full admission to the Graduate School.

- **Transient status** may be given to a person who is a regularly enrolled graduate student in good standing in a degree program at another accredited university and has written permission to enroll at The University of Akron. Such permission is valid only for the courses and semester specified, with a maximum of 10 semester credits allowable, and is subject to the approval of the instructor, department chair, and Graduate School. A transient student is subject to the same rules and regulations as a regularly enrolled student of the University.

- **Undergraduate status** is for an undergraduate student at the University who may be granted permission to take one or more graduate-level courses if all the following conditions are met:
  - senior standing (at least 96 credits completed);
  - overall grade-point average of 2.75 or better through preceding term (if a student does not have a 3.00 or better in the major field, special justification will be required from the department);
  - written approval is given by the instructor of the course and the student’s advisor.

These courses may later be applied to a degree program if not used to satisfy baccalaureate degree requirements. The maximum number of graduate credits that may be taken by an undergraduate and applied later toward a graduate degree is 12. Graduate tuition and fees will be charged for all graduate courses taken by an undergraduate.

- **Academic Probation status** refers to any student whose cumulative graduate grade point average falls below 3.00 and is no longer in good academic standing. Full-time students placed on academic probation are expected to return to good academic standing (overall GPA of 3.00 or above) after two consecutive semesters (excluding summers). Part-time students are expected to return to good academic standing (overall GPA of 3.00 or above) within the attempting of 15 additional graduate credits. Failure to return to good academic standing may result in academic dismissal.

- **Academic Dismissal status** refers to any student who fails to make satisfactory progress toward declared goals or who accumulates six semester credits of “C+” or below. The accumulation of six semester credits of “F” will result in mandatory dismissal. A student who is dismissed from the Graduate School may not be readmitted for one calendar year and then only if evidence for expecting satisfactory performance is submitted and found to be acceptable.

- **Postdoctoral status** is divided into three categories:
  - a Fellow is a person holding an earned doctorate who is engaged in advanced research. A fellow shall be considered a guest of the University and provided space and use of facilities within limits of practical need of the graduate student. Fellowships and fees shall be collected if a guest is allowed under sponsoring contract for any courses the fellow may choose to take; and
  - a Special is a person holding an earned doctorate who desires an additional graduate degree. A special may be admitted to any program upon submission of application forms, application fee (if new student) and an official transcript from the institution awarding the doctorate. This student will be treated as a regular student subject to registration fees and program degree requirements; and
  - a Guest is a person holding an earned doctorate who desires to attend courses and seminars relevant to individual work or interest without registering or receiving grades. A written application should be submitted to the dean of the Graduate School for each course to be taken, and approval of the instructor, department chair, and college dean shall be obtained. A guest is welcome to register for any course or seminar provided space is available. Normally, space and facilities for research cannot be provided for a postdoctoral guest but special requests will be considered. Requests should be submitted, in writing, to the dean of the Graduate School who will review such requests with the appropriate college dean and department chair.

**Sixty-Plus (60+)** Program

Developed in accordance with State Law 3345.27 passed in 1976 and amended in March 1999, the Sixty-Plus Program provides residents 60 and older the opportunity to audit credit classes or take courses for credit on a space-available, non-tuition basis.

To qualify for the Sixty-Plus Program, the prospective student must be 60 years of age or older and have resided in the State of Ohio for at least one year. Sixty-Plus students are exempt from payment of tuition and general service fees but are expected to pay for any books, special fees, laboratory or instructional fees and parking, if needed. Auditing allows students to attend classes, but college credit is not awarded.

Sixty-Plus participants may enroll for 11 or fewer credits unless request to enroll in a greater number of credits is approved by the Senior Vice President and Provost. Participants in this program may be prohibited from enrolling in certain courses or classes for which special course or training prerequisites apply or in which physical demands upon students are inappropriate for imposition upon persons 60 years of age or older, or in which the number of participating regular students is insufficient to cover the University’s or college’s course-related expenses as determined by the University.

Space availability is determined after the degree-seeking students have registered. Sixty-Plus registrations are held immediately before the start of each term and participants must register in person.

Sixty-Plus participants are subject to the same disciplinary and/or governance rules affecting all students.

A Sixty-Plus student will be issued a Student ID Card which will permit them to use specific University facilities and services and obtain student rates for purchases of goods and services.

To be eligible to enroll in a course for credit, the student’s family income must be less than 200 percent of the Federal poverty guidelines as revised annually by the U.S. Secretary of Health and Human Services for a family size equal to the size of the family of the person whose income is being determined.

**Course Load**

A full load of coursework at the graduate level is normally 9-15 semester credits including audit. Full-time status is defined as a minimum of 9 semester credits; or
as defined by the Internal Revenue Service for those students with graduate assistantships.

Registration
The responsibility for being properly registered lies with the student, who should consult with the assigned advisor in preparing a program of courses and research. A schedule of courses, hours, class location and registration procedures is obtainable from the registrar.

Cross Registration
Under specific circumstances a graduate student may take one or more graduate courses at Cleveland State University, Kent State University, The University of Akron, Ohio University, or Youngstown State University without registering as a transient student. The course for which a student wishes to register should contribute to the student’s program of study and be unavailable when needed to complete the student’s program at the home institution. The student must be in good standing (GPA > 3.0) and within the time limits for degree completion. The graduate program unit at the student’s home institution will establish a graduate special topics or independent study course identification capable of being “tagged” by the home university with a title that will correspond to the course title at the host university and with the initials of that university; i.e., CSU, KSU, or YSU. Registration for such a course is controlled by the home department and will be permitted only upon receipt of an approved Cross Registration form. Cross Registration forms can be obtained online at http://www.uakron.edu/gradsch/current-students/cursfoms.dot.

Financial Assistance
The University awards a number of graduate assistantships to qualified students. These assistantships provide stipends of $6,000 to $22,000 plus remission of tuition and some fees and are available in all departments with graduate degree programs. A graduate assistant renders service to the University through teaching and/or research. For information and applications, contact the department chair or school director. Partial tuition scholarships may be available for first-time graduate students on a limited basis. A number of fellowships sponsored by industry and government agencies are available in some departments. For information, contact the chair of the department.

Information about student loans can be obtained from the Office of Student Financial Aid.

Additional information concerning financial aid policies is available in the Graduate Assistant Handbook which can be obtained online at http://www.uakron.edu/gradsch/current-students/.

International Students
The University of Akron welcomes international students and seeks to make their educational experience pleasant and meaningful. Currently, over 1,200 international students from over 80 countries pursue studies and research at The University of Akron.

Admission
International students may apply to begin their graduate studies for the Fall, Spring, or Summer Sessions. Students should submit their applications at least six months in advance of the date they wish to begin studying. Graduate students applying for assistantships should submit applications nine months before the term begins for best consideration. The following procedures should be followed:

- Access the online graduate application through the Graduate School website at http://www.uakron.edu/gradsch. A nonrefundable application fee of $40 must also be submitted.
  - An official transcript and degree from all institutions and universities attended. Original records in languages other than English must be accompanied by exact English translations and certified by the school, U.S. consulate, or other legal certifying authority.
  - Proof of adequate financial support. An international student should submit applications nine months before the term begins for best consideration. The following procedures should be followed:
    - Access the online graduate application through the Graduate School website at http://www.uakron.edu/gradsch. A nonrefundable application fee of $40 must also be submitted.
    - An official transcript and degree from all institutions and universities attended. Original records in languages other than English must be accompanied by exact English translations and certified by the school, U.S. consulate, or other legal certifying authority.
  - Proof of adequate financial support. An international student should submit to the Office of International Programs, The University of Akron, Polsky Building, Room 483, Akron, OH 44325-3101, the Declaration and Certification of Finances (DCF) and an original statement from the bank showing availability of sufficient funds to cover the cost of the first year of study. The Office of International Programs will prepare the Certificate of Eligibility (I-20A/B or DS-2019) upon receipt of adequate financial support and admission to the University.
  - International applicants, U.S. citizens, and Permanent Residents whose native language is not English must submit evidence that they have a sufficient level of English to undertake graduate studies at The University of Akron. After submitting acceptable academic credentials and proof of English proficiency in writing, writing samples, and, if applicable, a TOEFL score, an applicant will be notified of acceptance to graduate study and the manner in which financial aid may be obtained.
  - International applicants, U.S. citizens, and Permanent Residents whose native language is not English must submit evidence that they have a sufficient level of English to undertake graduate studies at The University of Akron. After submitting acceptable academic credentials and proof of English proficiency in writing, writing samples, and, if applicable, a TOEFL score, an applicant will be notified of acceptance to graduate study and the manner in which financial aid may be obtained.

Costs, Financial Aid, and Medical Insurance
Information on estimated expenses for international graduate students on F-1/J-1 visas can be found on the form “Declaration and Certification of Finances” (DCF), which can be downloaded at http://www.uakron.edu/oip/immigration/forms.dot. Annual tuition and living expenses for the 2011-2012 academic year will be approximately $26,000. Tuition is subject to change.

Graduate students may request financial aid through fellowships and graduate assistantships. More detailed information can be found on the Graduate School website.

The University of Akron requires that all international students carry major medical insurance that meets minimum established requirements. Such coverage must be effective throughout the students’ studies at The University of Akron. International students will not be permitted to register without proof of such coverage.

Immigration Information for Graduate Students on F-1/J-1 Visas
Information on estimated expenses for international graduate students on F-1/J-1 visas can be found on the form “Declaration and Certification of Finances” (DCF), which can be downloaded at http://www.uakron.edu/oip/immigration/forms.dot. Before the Certificate of Eligibility (I-20 or DS-2019) can be issued, the DCF Form must be completed and returned to the Office of International Program. (or e-mailed to immigration@uakron.edu), along with financial documentation as specified on the form and a copy of the biographical page of the passport. The DCF form also indicates the additional cost for an F-1 or J-1 student’s dependents, should they accompany or join the student here. Students who bring dependents must also submit a copy of the biographical page of each dependent. According to U.S. government regulations, financial documents must demonstrate that the student has enough funds immediately available to meet all expenses of the first year of the program, and that adequate funding will be available for each subsequent year of study. Documents must be dated within one year from teh start date of the student’s program.

Once the student has been admitted, has submitted the DCF form and a copy of the passport, and his/her financial documents are sufficient, the Office of Interna-
ational Programs will issue the Certificate of Eligibility II-20 or DS-2019 needed for the student to apply for an F-1 or J-1 visa. A Certificate of Eligibility (I-20 or DS-2019) will not be issued for online programs which do not require the student’s physical presence on The University of Akron campus.

A student on an F-1 or J-1 visa transferring to The University of Akron from another U.S. college/university, without leaving the U.S., will be eligible for transfer only if he/she maintains valid nonimmigrant status. The I-20 or DS-2019 will be issued upon submission of the documents proving valid status, meeting the requirements mentioned above, and the release of the SEVIS record to The University of Akron. A new I-20m or DS-2019 must be obtained before

**International Student Orientation**

The required International Student Orientation takes place two weeks before Fall classes begin, the week before Spring classes begin, and the Friday before each summer session. The cost is $100 (cost subject to change). The fee will be automatically assessed to student’s account during the first semester of enrollment.

**International Transfer Credits**

Transfer credit from foreign institutions is awarded at the discretion of the academic department with the final approval from the Graduate School. Transfer course work is only accepted from institutions that are recognized by the institution's governing academic body (i.e. Ministry of Education). The student must have earned a minimum of a “B” (or its equivalent) to be eligible for transfer credit.

**Teaching Assistants**

Applicants whose native language is not English and who expect to become teaching assistants, are also required to achieve a minimum score of 50 on the Test of Spoken English (TSE, Revised 1995), a minimum score of “Pass” on the U-ADEPT, or a 23 or greater on the speaking component of the internet-based TOEFL. This exam must be taken prior to functioning as a teaching assistant. Those for whom English is not the native language and who expect to become teaching assistants must demonstrate proficiency in English through departmental certification. Neither English proficiency testing nor departmental certification is required for research, instructional support, or administrative assistants.

**Note:** International students are encouraged to contact the Office of International Programs directly with questions about housing, climate, insurance, or immigration support, or administrative assistants.

**International Students are encouraged to contact the Office of International Programs directly with questions about housing, climate, insurance, or immigration support, or administrative assistants.**

**Grades**

A student admitted to graduate study under any status at the University is expected to maintain a minimum 3.00 grade-point average (4.00=’A’) at all times. A minimum grade-point average of 3.00 is required for graduation. No more than six semester credits of `C`, `C+`, and `C-` may be counted toward the degree. Grades of `D+`, `D`, and `D-` are treated as `F` grades. No grades below `C-` may be counted toward a degree.

**Official academic records for graduate students are maintained with a grade-point system as follows:**

<table>
<thead>
<tr>
<th>Grade</th>
<th>Quality Points</th>
<th>Key</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>4.0</td>
<td></td>
</tr>
<tr>
<td>A-</td>
<td>3.7</td>
<td></td>
</tr>
<tr>
<td>B+</td>
<td>3.3</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>3.0</td>
<td></td>
</tr>
<tr>
<td>B-</td>
<td>2.7</td>
<td></td>
</tr>
<tr>
<td>C+</td>
<td>2.3</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>2.0</td>
<td></td>
</tr>
<tr>
<td>C-</td>
<td>1.7</td>
<td></td>
</tr>
<tr>
<td>D+</td>
<td>0.0</td>
<td>Failure</td>
</tr>
<tr>
<td>D</td>
<td>0.0</td>
<td>Credit</td>
</tr>
<tr>
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<td>No credit</td>
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<tr>
<td>CR</td>
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<tr>
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<tr>
<td>AUD</td>
<td>0.0</td>
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</tr>
</tbody>
</table>

The following grades may also appear on the term grade reports or on the official academic record. There are no grade points associated with these grades.

I – Incomplete: Indicates that the student has done passing work in the course but that some portion of the work is, for good and acceptable reason, not complete at the end of the term. Failure to make up the omitted work satisfactorily by the end of the following term, not including summer sessions, converts the “I” to an “F.” When the work is satisfactorily completed within the allotted time the “I” is converted to whatever grade the student has earned. *

IP – In Progress: Indicates that the student has not completed the scheduled course work during the term because of the nature of the course does not permit completion within a single term, such as work toward a thesis.

PI – Permanent Incomplete: Indicates that the student’s instructor and the instructor’s dean have for special reason authorized the change of an incomplete (“I”) or an in progress (“IP”) to a permanent incomplete (“PI”).

WD – Withdraw: Indicates that the student registered for the course but withdrew officially sometime after the second week of the term.

NGR – No Grade Reported: Indicates that, at the time grades were processed for the present issue of the record, no grade had been reported by the instructor.

INV – Invalid: Indicates the grade reported by the instructor for the course was improperly noted and thus unacceptable for proper processing.

*If instructors wish to extend the “I” grade beyond the following term for which the student is registered, prior to the end of the term they must notify the Office of the Registrar in writing the extension and indicate the date of its termination. It is the responsibility of the student to make arrangements to make up the incomplete work. The faculty member should submit the new grade to the Office of the Registrar in writing.

**Academic Reassessment**

A student who meets all the criteria described below may petition the Vice President for Research and Dean of the Graduate School to remove from his/her graduate cumulative grade point average all those grades earned under the student’s prior enrollment at The University of Akron.

- Degree seeking graduate student
- Previous graduate enrollment at The University of Akron
- Not enrolled at The University of Akron for at least five years prior to current enrollment
- Maintain a current graduate grade point average of at least 3.00 or better for the first 15 hours of re-enrollment credit

If the student’s petition is granted, the following will apply to the reassessment policy:

- This policy only applies to the student’s graduate grade point average.
- All University of Akron grades will remain on the student’s official, permanent academic record (transcript); this process will affect the cumulative graduate grade point average only. It will not remove evidence/documentation of the student’s overall academic history at the university.
- No grades/credits from the student’s prior graduate enrollment at the university may be counted toward the subsequent degree program requirements. Degree requirements may only be met by courses included in the calculation of the student’s cumulative graduate grade point average at The University of Akron. Thus, the student who successfully petitions for cumulative graduate grade point average recalculation under this policy automatically forfeits the right to use any of the excluded course work toward the current degree requirements.

A student may exercise this graduate reassessment option only once, regardless of the number of times the student enters/attends a graduate degree program at The University of Akron.

**Repeating Courses**

Any graduate course may be repeated once for credit; however, the degree requirements shall be increased by the credit hour value of each course repeated. The hours and grades of both the original and the repeated section shall be used in computing the grade-point average. Required courses in which a “D” or “F” was received must be repeated.

**Audit Policy**

A student choosing to audit a course must be admitted and indicate audit at the time of registration. The student pays the enrollment fee and may be expected to do all the work prescribed for students taking the course for credit, except that of taking the examination. Any faculty member may initiate withdrawal for a student not meeting these expectations.

**Thesis and Dissertation Credits**

Course number 699 will only be used for courses which indicate credit is being given for a master’s thesis. 899 will only be used for courses which indicate credit is being given for a doctoral dissertation. No credit for 699 or 899 will be given unless the thesis or dissertation is completed.

**Colloquia, Seminars and Workshops**

**Colloquium (credit/noncredit grading)**- A course that normally involves guests, faculty or graduate students as speakers. The intent of the course is to introduce a broad range of topics using resource personnel. Normally, assignments are limited to class participation.

**Seminar (letter grades)**- A course that normally involves group discussion or other activities based on assigned material. Grades are awarded based on a combination of assignments, tests and class participation.

**Workshop (credit/noncredit grading)**- A course that normally operates over a shorter period than a semester or a summer session. Workshops focus on a particular aspect or aspects of a field of study, require a combination of assignments, tests and class participation, and may or may not be permitted to satisfy degree requirements.
Probation and Dismissal
Any student whose cumulative grade-point average falls below 3.00 will be placed on probation and is no longer in good standing. In consultation with the college or department, as appropriate, the dean of the Graduate School shall dismiss full-time students who do not return to good academic standing within two consecutive semesters (excluding summer) and part-time students who do not return to good academic standing within the attempting of 15 additional credits. For the purpose of administration of the full-time and part-time provisions of this policy, full-time and part-time status are determined by the semester in which the student goes on probation. Full-time enrollment constitutes nine or more graduate credits; part-time is less than nine graduate credits.

The dean of the Graduate School, with the approval of the relevant department chair, may also dismiss anyone who fails to make satisfactory progress toward declared goals or who accumulates six semester credits of “C+” or below. The accumulation of six semester credits of “F” will result in mandatory dismissal.

A student dismissed from the Graduate School for academic reasons may not be readmitted for one calendar year, and then only if evidence for expecting satisfactory performance is submitted and found to be acceptable.

Grades of “D+,” “D,” and “D-” are treated as “F” grades. (See previous section on Grades.)

Commencement
Students earning graduate degrees are expected to participate in the commencement exercises. A degree candidate who has legitimate reasons for graduating “In Absentia” shall make a written request to the registrar within the established dates and pay the designated fee. Students must apply for advancement to candidacy in advance of completing degree requirements. The Advancement to Candidacy form also serves as the Graduation Application. The student will be placed on the graduation list for the degree and term he or she indicates on the form.

Students must submit an Advancement to Candidacy form to the departmental office by the following dates:
- December 1 for Spring Commencement
- April 2 for Summer Commencement
- July 2 for Fall Commencement

Academic Dishonesty
Students at The University of Akron are an essential part of the academic community, and enjoy substantial freedom within the framework of the educational objectives of the institution. The freedom necessary for learning in a community so rich in diversity and achieving success toward our educational objectives requires high standards of academic integrity. Academic dishonesty has no place in an institution of advanced learning. The University community is governed by the policies and regulations contained within the Code of Student Conduct available at www.uakron.edu/sja, in Student Union 216, or by contacting Student Judicial Affairs at 330-972-6380 or sja@uakron.edu.

The University of Akron considers academic integrity an essential part of each student’s personal and intellectual growth. Instances of academic dishonesty are addressed consistently. All members of the community contribute actively to building a strong reputation of academic excellence and integrity at The University of Akron.

It is each student’s responsibility to know what constitutes academic dishonesty and to seek clarification directly from the instructor if necessary. Examples of academic dishonesty include, but are not limited to:
- Submission of an assignment as the student’s original work that is entirely or partly the work of another person.
- Failure to appropriately cite references from published or unpublished works or print/non-print materials, including work found on the World Wide Web.
- Unauthorized copying of an assignment in computer programming, or the unauthorized examination or view of the computer, specifically during examinations.
- Possession and/or unauthorized use of tests, notes, books, calculators or formulas stored in calculators not authorized by the instructor during an examination.
- Providing and/or receiving information from another student other than the instructor, by any verbal or written means.
- Observing or assisting another student’s work.
- Violation of the procedures prescribed by the professor to protect the integrity of the examination.
- Cooperation with a person involved in academic misconduct.

An incident of academic misconduct may be resolved and a sanction assessed in a meeting between the faculty member and student. If the student and faculty member agree on the facts of the incident and the proposed sanction, the matter can be resolved informally. Prior to an informal resolution the faculty member shall confer with Student Judicial Affairs to determine whether any prior academic misconduct has occurred. If the student and faculty member disagree about the facts of the incident or the proposed sanction, then the matter shall be referred to Student Judicial Affairs. When the matter is referred to Student Judicial Affairs a meeting will occur, and if the evidence indicates it is more likely than not that an academic misconduct violation has occurred the department will follow procedures that can be found in the Code of Student Conduct at www.uakron.edu/sja.

Graduate Student Grievance
Specific procedures are set forth that provide graduate students with a formal channel of appeal and redress of grievances arising out of their academic and/or employment relationship with the University. Discussion of these procedures can be found in the Appendix of this Bulletin.

Ohio Residency Requirements
Payment of a non-resident surcharge is required of any student who does not qualify as a permanent resident of Ohio as defined by Section 3333-1-10 of the Ohio Administrative Code.

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

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

B. Definitions
For purposes of this rule:
1. “Resident” shall mean anyone who maintains a 12-month place or places of residence in Ohio, who is qualified as a resident to vote in Ohio and receive state public assistance, and who may be subjected to tax liability under Section 5747.02 of the Revised Code, provided such person has not, within the time prescribed by this rule, declared himself or herself to be or allowed himself or herself to remain a resident of any other state or nation for any of these or other purposes.

2. “Financial support” as used in this rule, shall not include grants, scholarships, and awards from persons or entities which are not related to the recipient.

3. An “institution of higher education” shall have the same meaning as “state institution of higher education” as that term is defined in section 3345.01 of the Revised Code, and shall also include private medical and dental colleges which receive direct subsidy from the state of Ohio.

4. “Domicile” as used in this rule is a person’s permanent place of abode so long as the person has the legal ability under federal and state law to reside permanently at that abode. For the purpose of this rule, only one (1) domicile may be maintained at a given time.

5. “Dependent” shall mean a student who was claimed by at least one parent or guardian as a dependent on that person’s internal revenue service tax filing for the previous tax year.

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

7. “Community Service Position” shall mean a position volunteering or working for: (a) VISTA, Americorps, city year, the peace corps, or any similar program as determined by the Ohio Board of Regents or (b) An elected or appointed public official for a period of time not exceeding twenty-four consecutive months.

C. Residency for Subsidy and Tuition Surcharge Purposes
The following persons shall be classified as residents of the state of Ohio for subsidy and tuition surcharge purposes:

1. A student whose spouse or 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 student of a parent or legal guardian or the spouse of a person who, as of the first day of a term enrollment, has accepted full-time, self-sustaining employment and established domicile in the state of Ohio for reasons other than gaining the benefit of favorable tuition rates. Documentation of full-time employment and domicile shall include both of the following documents:

*Grades of “D+,” “D,” and “D-” are treated as “F” grades. (See previous section on Grades.)
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F. Procedures

1. A dependent person classified as a resident of Ohio for these purposes (under the provisions of Section C.1. of this rule) and who is enrolled in an institution of higher education shall be considered a resident during continuous full-time enrollment and until his or her completion of any one academic degree program.

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

3. For students who qualify for residency status under C.3. of this rule, residency status is lost immediately if the employed person upon whose resident status was based accepts employment and establishes domicile outside Ohio less than twelve months after accepting employment and establishing domicile in Ohio. Any person once classified as a nonresident, upon the completion of twelve consecutive months of residency, must apply to the institution he or she attended for reclassification as a resident of Ohio for these purposes. If such person in fact wants to be reclassified as a resident. Should such person present clear and convincing proof that no part of his or her financial support is or in the preceding twelve consecutive months has been provided directly or indirectly by persons or entities who are not residents of Ohio for all other legal purposes, such person shall be reclassified as a resident. Evidentiary determinations under this rule shall be made by the institution which may require, among other things, the submission of documentation regarding the sources of a student's actual financial support.

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

E. Exceptions to the general rule of residency for subsidy and tuition surcharge purposes

1. A person who is a member of the Ohio national guard and who is domiciled in Ohio while the person is in Ohio national guard service.

2. A person who enters and currently remains upon active duty status in the United States military service while a resident of Ohio for any other purpose other than tax liability, voting or receipt of public assistance (see paragraph (D)(2)(a) of this rule).

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

4. In considering removal of any one academic degree program.

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

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

Fees

All fees reflect changes in 2011-2012 and are subject to change without notice. Application Fee (this fee is not refundable under any circumstances)

Domestic

$30.00

International

$40.00

Domestic Student Reapplication Fee

$25.00

International Student Reapplication Fee

$25.00

Retroactive Admission Term Request

$25.00

Retroactive Continuous Enrollment Requirement Fee

$400.00/hr per semester (assessed to doctoral students who are not in compliance with the University's continuous enrollment policy requiring a minimum enrollment of at least one credit hour for each fall and spring semester)

*Graduate Application Fee is deferred for federally funded TRIO program alumni.

Tuition Fees

Resident student per credit

$391.00

CBA student per credit

$428.50

Nurse Anesthesia student per credit

$471.35

Non-resident student per credit

$869.50

Non-resident CBA student per credit

$707.00

Non-resident Nurse Anesthesia student per credit

$749.85

*Plus Administrative, Library, Technology, and Facilities Fees

General Fee

Per credit hour

$15.00 per credit

Maximum of

$180.00 per semester

Administrative Fee*

Graduate, transient students

$12.00 per term

Facilities Fee

Per credit hour

$18.55

Maximum of

$222.60 per semester

Technology Fee

Per credit hour

$16.25

Library Fee

Per credit hour

$3.00

Engineering Infrastructure Fee

Per credit hour (all Engineering courses)

$15.00

International Executive MBA Program

All inclusive tuition, fees, travel, and program costs:

Tuition Deposit (Due July 15)

$5,000.00

First Semester

$15,000.00

Second Semester

$10,000.00

Third Semester

$10,000.00

Application Fee

$120.00

Waiver Exam Fee

$100.00 per exam

Master of Public Health Program

Tuition

$530.00 per credit hour

Non-resident surcharge

$278.50 per credit hour

Parking (if enrolled in more than five credit hours)

$150.00 per semester

*Graduate Application Fee is deferred for federally funded TRIO program alumni.
### Master of Fine Arts
- **Tuition**: $504.00 per credit hour
- **Non-resident surcharge**: $278.50 per credit hour
- **Parking (if enrolled in more than five credit hours)**: $150.00 per semester

*Plus Administrative, Library, Technology, and Facilities Fees

### Joint Ph.D. in Nursing Program (UA and KSU)
- **Tuition**: $448.00 per credit hour
- **Non-resident surcharge**: $310.00 per credit hour
- **Dissertation fee:**
  - Dissertation I (1-15 credits per semester; maximum 30 cr.): $179.00 per credit hour
  - Dissertation II (flat rate): $15.00
- **Doctor of Audiology (Au.D.) (UA and KSU)**
- **Tuition**: $452.00 per credit hour
- **Non-resident surcharge**: $342.00 per credit hour

### Transportation Fee (Parking Permit and Roo Express Shuttle Service)
(assessed to students enrolled in more than five credits on the Akron Campus)
- **Per semester, Fall and Spring**: $150.00
- **Summer**: $170.00
- **One day only permit**: $6.00 per day

### Student Judicial Affairs Fees
**Administrative Fees (Finding of Responsibility/Informal Warning):**
- Agreement reached during Fact Finding: $25.00
- Agreement reached during Hearing Board (HB) Process: $50.00

**Workshop Referrals:**
- Discussing Our Choices Workshop: $50.00

**Disciplinary Fines:**
- **Substance Abuse Violations**
  - Alcohol use/possession/distribution: $50.00
  - Second offense: $75.00
  - Third (+) offense: $125.00
- **Drug-controlled substance use/possession**
  - First offense: $75.00
  - Second offense: $125.00
  - Third (+) offense: $250.00

- **Serious Violations of the Code of Student Conduct**
  - Violent/threatening behavior: $150.00
  - Theft: $150.00
  - Weapons: $200.00
  - Drug sales/distribution - first offense: $150.00
  - Drug sales/distribution - second offense: $300.00

*Restitution for lost/stolen/damaged while in possession (max) is cost plus 20%

**Other Fees**
- Course materials fees – assessed for selected courses to cover the cost of instructional materials. Consult the appropriate college, department, or school regarding specific course material fees for classes.
- **The University of Akron Developed English Proficiency Test (U-ADEPT)**: $125.00
- **Miller Analogies Test (Counseling, Testing, and Career Center)**: $90.00
- **Late payment fee**: $50.00

*Administrative fee replaces those fees previously charged for schedule changes, transcripts, and for application for graduation.

### Financial Aid
Financial aid programs were developed by the federal and state governments as well as by institutions of higher education to assist students from families with limited resources to meet educational expenses. The primary purpose of financial aid is to ensure that no one is denied the opportunity of a college education because of financial need.

A graduate student who has already received a bachelor’s degree can apply for the Federal Subsidized and Unsubsidized Stafford Loans. The Federal Pell Grant, Ohio Instructional Grant and Federal Supplemental Educational Opportunity Grant cannot be received. Postbaccalaureate students may only apply for Subsidized and Unsubsidized Stafford Loans.

To apply for the Federal Subsidized and Unsubsidized Stafford Loans, the student must complete and submit the Free Application for Federal Student Assistance (FAFSA) or the Renewal Application to Federal Student Aid Programs. Applications are available in January for the following school year. Applications can be completed on the World Wide Web at [http://www.fafsa.ed.gov](http://www.fafsa.ed.gov). Inquiries may be directed to the Office of Student Financial Aid, Simmons Hall, 330-972-7032 or 1-800-621-3647.

### Payment Plan
A payment plan option is available to help those students who cannot pay full charges for tuition, on-campus housing, and/or the meal plan at the start of the semesters. Under the payment plan students agree to pay tuition and fees in installments over the semester. A down payment is required to start.

Three options are available to sign up for the payment plan:
- **Sign onto ZipLine -> Access my...Financials -> Sign up for Payment Plan**
- **Visit the Office of Student Accounts in Simmons Hall, Room 106**

- **Sign up by mail:** University of Akron, Office of the Cashier, P.O. Box 2260, Akron, Ohio 44309-2260. Enclose a signed Installment Payment Plan application along with the required down payment. Make sure the information is received by the Office of Student Accounts on or before the due date.

To enroll in the Payment Plan full-time students pay a down payment of $1,000 and part-time students pay a down payment of $500. Financial aid can be used to pay for a portion or all of the required down payment. A $30 application fee is charged for the Payment Plan. The fee will be part of the first installment. The Payment Plan covers only one term. Each time a student wishes to use the Installment Payment Plan he or she must re-enroll. The deadlines to enroll can be found at [http://www.uakron.edu/student-accounts/payments_and_billing/](http://www.uakron.edu/student-accounts/payments_and_billing/)

Questions concerning the Payment Plan can be directed to (330) 972-5100.

### Graduate Assistantships
Graduate assistantships may be available through various graduate degree-granting academic units. Graduate assistantships and other graduate awards are distributed to the colleges through the Graduate School; therefore, a student interested in a graduate assistantship should contact the appropriate academic department.

### International Students
A student in the United States on a student or other temporary visa is not eligible for any state or federal financial aid. Application for scholarships, short-term loans, graduate assistantships, and some types of employment may be made.

### Regulations Regarding Refunds
All fees are subject to change without notice. Students shall be charged fees and/or tuition and other fees in accordance with schedules adopted by the Board of Trustees. Students are advised to consult the website of the Office of Student Accounts/Bursar and this bulletin for tuition and fees. Registration does not automatically carry with it the right of a refund or reduction of indebtedness in cases of failure or inability to attend class or in cases of withdrawal. The student assumes the risk of all changes in business or personal affairs.

### Fees Subject to Refund
- **Ohio resident tuition and nonresident surcharge**
- **General service fee**
- **Facilities fee**
- **Technology fee**
- **Course materials fee**
- **Transportation fee (only if permit is returned)**
- **Library fee**
- **Residence hall fees (note: subject to special policy)**
- **Meal plans (note: subject to special policy)**
- **Administrative fee (note: only with complete withdrawal)**
- **Career advantage fee**
- **Developmental programs support fee**
- **Engineering infrastructure fee**

### Amount of Refund
Amount of refund is to be determined in accordance with the following regulations:

- **In full**
  - if the University cancels the course;
  - if the University does not permit the student to enroll or continue except for disciplinary reasons. No refund will be granted to a student dismissed or suspended for disciplinary reasons;
  - if the student dies before or during the term; is drafted into military service by the United States; is called to active duty; or if the student enlists in the National Guard or Reserve prior to the beginning of the term. Notice of induction or orders to active duty is required if the student is called to active duty. A student who enlists voluntarily for active duty should see “in part” below.

- **In part**
  - all refund calculations are determined by class length percentage, not by class meetings completed or class meeting percentage. Class length is defined as the number of days between and including the beginning and ending dates of any given term/session (including weekend days and holiday). The standard fifteen-week fall/spring/summer semester percentages which apply are:
    - If 66.67% of class completed: 100%
    - If 33.33% of class completed: 70%
    - If 20% of class completed: 50%
    - If 13.33% of class completed: 30%
    - If 13.33% of class completed: 20%
    - Greater than 33.33% of class completed: 0%
Refunds for course sections which have not been scheduled consistent with the standard 15 week fall/spring/summer semester scheduling pattern will also be calculated on a pro rata basis according to the number of days of the section (class, institute, workshop) which has passed prior to official withdrawal compared to the number of days said section has been scheduled to meet. Refunds will be determined as of the date of formal withdrawal unless proof is submitted that circumstances beyond control of the student, e.g., hospital confinement, prevented the filing of the official withdrawal earlier, in which case the refund will be determined as of the date of said circumstance. The student assumes responsibility for filing for a refund.

Refunds will be mailed as soon as possible. Refund checks are subject to deduction for any amount owed to The University of Akron by the student. Depending on the date of the withdrawal and the refund due, if any, a balance may still be owed on an installment payment plan contract.

No refund will be granted to a student dismissed or suspended for disciplinary reasons.

The University reserves the right to cancel a course for insufficient enrollment.

**Amount of Refund - Noncredit Courses**

If a noncredit course is canceled by The University of Akron, a full refund will be issued. Withdrawal requests received up to three business days prior to the first class meeting will result in a full refund, less a $15 processing charge, or an opportunity to transfer to another course. Thereafter, withdrawal requests received up to the beginning of the second class meeting will receive a 50 percent refund. No refunds are issued after the start of the second day of classes.

Refunds for noncredit courses are determined by the date the withdrawal request is received. The refund period cannot be extended if the student fails to attend the first class. Charge cards and refund checks will be processed promptly. Parking permits must be returned to the Workforce Development and Continuing Education Office to receive a refund.

The University reserves the right to cancel a course for insufficient enrollment.

**Payment of Tuition and Fees/Withdrawal**

Tuition and fees for the semester are to be paid or arranged for payment on or before published due dates. Students who receive financial assistance should be aware that they may be responsible for fees. Students will be responsible for assuring that their personal accounts are up-to-date. Payment plans are available for those students who wish to spread payments over an extended period. Students with accounts that are not fully paid or properly arranged for payment by the end of the semester may be prevented from registering for subsequent coursework. If a student enrolls in classes and then decides not to attend, it is still the student’s responsibility to drop his or her classes and to notify the University in order to prevent unnecessary charges.

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**SECTION 3. Academic Requirements**

### MASTER’S DEGREE REQUIREMENTS

#### Admission

When a student is admitted to graduate study, an advisor is appointed by the chair of the major department. A student who is academically qualified in general but deficient in course preparation may be required to make up the deficiencies at the postbaccalaureate level. This may be recommended prior to beginning graduate work, or in some cases, can be done simultaneously.

#### Residence Requirements

There are no formal residence requirements for the master’s degree. A student may meet the degree requirements of the Graduate School and the department through either full- or part-time study.

#### Continuous Enrollment Requirements

There is no formal Graduate School continuous enrollment requirement for the master’s degree. Individual master’s programs, however, may require continuous enrollment. Students should consult their advisors about this requirement.

#### Time Limit

All requirements must be completed within six years after beginning graduate-level coursework at The University of Akron or elsewhere. An extension of up to one year may be granted in unusual circumstances by the Graduate School upon written request by the student and recommendation by the advisor and department chair.

#### Credits

A minimum of 30 semester credits of graduate work is required in all master’s degree programs. This includes thesis credit. Some departments require more (see departmental requirements). A minimum of two-thirds of the total graduate credits required in any master’s program must be completed at the University. A maximum of six workshop credits may be applied to a master’s degree. Such credits must be relevant to the degree program, recommended by the student’s advisor and approved by the dean of the Graduate School.

It should be noted that the requirements listed by department elsewhere in this section refer to the minimum necessary for a degree. It is entirely within the prerogative of the department to assign additional credits of coursework or other requirements in the interest of graduating a fully qualified student.

No graduate credit may be received for courses taken by examination or for 500-numbered courses previously taken at the 400-number course level as an undergraduate without advance approval from the dean of the Graduate School. “Repeat for change of grade” is not available at the graduate level.

#### Transfer Credits

Up to one-third of the total credits required for a master’s degree may be transferred from an accredited college or university, including The University of Akron. Departments and colleges may set more restrictive limits. All transfer credit must be at the “A” or “B” level (4.00 to 3.00) in graduate courses. The credits must be relevant to the student’s program as determined by the student’s academic department. A University of Akron student who seeks to enroll in courses elsewhere for transfer credit here must receive prior approval.

A student seeking to transfer credit must have full admission and be in good standing at The University of Akron and at the school at which the credits were earned. Transfer credit shall not be recorded until a student has completed 12 semester credits at The University of Akron with a grade-point average of 3.00 or better. Transfer credit from other institutions shall not be computed as part of a student’s University of Akron grade point average.

Individual course transfer of credit must fall within the six-year time limit to complete degree requirements. A block transfer of credit may be requested if a student has a prior graduate degree from an accredited college or university, including The University of Akron. A block transfer of credit does not apply toward the student’s six-year time limit to complete the degree.
Optional Department Requirements
Each department may set special requirements with regard to entrance examinations, qualifying examinations, foreign language, required courses and thesis. Details are available from the chair of the major department.

Advancement to Candidacy
A student should apply for advancement to candidacy after completion of one-half of the credits required for the degree in his or her program but no later than prior to the final semester of the graduate program. A student must be fully admitted and in good standing to be advanced to candidacy. Advancement to Candidacy forms can be obtained online at http://www.uakron.edu/gradsch/current-students/courses/candidacy_forms.dot, from the academic department, or from the Graduate School.

Students must submit an Advancement to Candidacy form to the departmental office by the following dates:
- September 15 for Spring Commencement
- February 15 for Summer Commencement
- May 15 for Fall Commencement

Graduation
To be cleared for graduation, a candidate must have completed coursework with a minimum cumulative graduate grade-point average of 3.00, submitted an advancement to candidacy application; paid all applicable fees; and met any other applicable department and University requirements.

If a thesis is required, a candidate must meet the preliminary and final thesis deadlines; submit one original, signed thesis signature page to the Graduate School; and submit one electronic copy of the thesis to OhioLINK. A manual entitled Guidelines for Preparing a Thesis or Dissertation can be obtained online at http://www.uakron.edu/gradsch/current-students/gdnhes/diss.dot.

DOCTORAL DEGREE REQUIREMENTS*
A master’s degree is not a prerequisite for the doctorate; however, the first year of study after the baccalaureate will be substantially the same for both the master’s and doctoral student. Some programs admit students to doctoral programs directly after the bachelor's degree; others require a master’s degree. No specific number or sequence of courses constitutes a doctoral program or assures attainment of the degree. A formal degree program consists of a combination of courses, seminars and individual study and research that meet the minimum requirements of the Graduate School and those of the committee for each individual student.

Admission
Usually, a student is not officially considered as a doctoral student until completion of a master’s program or its equivalent and approval for further study. Departments offering doctoral degree programs review each candidate carefully before recommending admission.

A minimum grade-point average of 3.00 is required for graduation of a candidate for all doctoral degrees.

Residence Requirements
A doctoral student may meet the degree requirements of the Graduate School and department by full-time study or a combination of full- and part-time study. The minimum residence requirement for a doctoral candidate in all programs is at least two consecutive semesters of full-time study and involvement in departmental activities. Full-time study is defined as 9-15 semester credits, except for graduate teaching and research assistants for whom full-time study is specified by the assistantship agreements. The summer sessions may count as one semester, provided that the candidate is enrolled for a minimum total of six semester credit hours per combined summer term. Individual programs may have additional residence requirements such as credits or courses to be completed, proper time to fulfill the residence requirement, and the extent to which a resident may hold outside employment.

Before a doctoral student begins residency, the student's advisor and the student shall prepare a statement indicating the manner in which the residence requirement will be met. Any special conditions must be detailed and will require the approval of the student’s committee, the department faculty member approved to direct doctoral dissertations, the college dean and the dean of the Graduate School.

Continuous Enrollment Requirement
All students admitted to doctoral programs must register for a minimum of one graduate credit as approved, their advisors during each Fall and Spring semester. Individual departments may exceed this minimum requirement. Doctoral students shall consult their advisors about additional requirements. Master’s programs may require continuing enrollment. Students should consult their advisors about this requirement.

Time Limit
All doctoral requirements must be completed within 10 years of starting coursework at The University of Akron or elsewhere. This refers to graduate work after receipt of a master’s degree or the completion of 30 semester credits. Extensions of up to one year may be granted by Graduate School under unusual circumstances upon written request by the student and recommendation by the advisor and department chair.

Credits
A doctorate is conferred in recognition of high attainment and productive scholarship in some special field of learning as evidenced by the satisfactory completion of a prescribed program of study and research; and the successful passing of examinations covering the special field of study and the general field of which this subject is a part. Consequently, the emphasis is on mastery of the subject rather than a set number of credits. Doctoral programs generally encompass the equivalent of at least three years of full-time study at the graduate level. A minimum of 50 percent of the total credits above the baccalaureate required in each student’s doctoral program must be completed at the University. A maximum of six workshop credits may be applied to a doctoral degree. Such credits must be relevant to the degree program, recommended by the student’s advisor and approved by the dean of the Graduate School.

No graduate credit may be received for courses taken by examination or for 400-numbered courses previously taken at the 400-number course level as an undergraduate without advance approval from the dean of the Graduate School. “Repeat for change of grade” is not available at the graduate level.

Transfer Credits
Up to one-half of the total credits above the baccalaureate required in a doctoral program may be transferred from an accredited college or university, including The University of Akron. Departments and colleges may set more restrictive limits. All transfer credit must be at the “A” or “B” level (4.00 to 3.00) in graduate courses. The credits must be relevant to the student’s academic program as determined by the student’s academic department. A University of Akron student who seeks to enroll in courses elsewhere for transfer credit here must receive prior approval.

A student seeking to transfer credit must have full admission and be in good standing at The University of Akron and at the school at which the credits were earned. Transfer credit shall not be recorded until a student has completed 12 semester credits at The University of Akron with a grade-point average of 2.00 or better. Transfer credits transferred from other institutions cannot be computed as part of a student’s University of Akron grade point average.

Individual course transfer or credit may fall within the ten-year time limit to complete degree requirements. A block transfer of credit may be requested if a student holds a prior graduate degree from an accredited college or university, including The University of Akron. No more than 30 semester credits may be transferred from a single master’s degree. A block transfer of credit does not apply toward the student’s ten-year time limit to complete the degree.

Language Requirements*
There is no University-wide foreign language requirement for the doctoral degree. The student is required to demonstrate one of the following skills depending upon the particular program.

- Plan A: Reading knowledge, with the aid of a dictionary, of two approved foreign languages. At the discretion of the department an average of “B” in the second year of college-level courses in a language will be accepted as evidence of proficiency in reading knowledge for that language. English may be considered as one of the approved foreign languages for a student whose first language is not English; and demonstrated competence in research technique (e.g., statistics and/or computers) may be substituted for one of the two foreign languages. Under the last option, each department should define competence and publicize.

- Plan B: Comprehensive knowledge of one approved foreign language, including reading without the aid of a dictionary and such additional requirements as the department may impose.

- Plan C: In certain doctoral programs (counseling and guidance, elementary education, engineering, psychology, secondary education, urban studies and public affairs) the demonstration of competence in appropriate research skills may serve as a substitute for the foreign language requirements.

*The Doctor of Audiology (Au.D.) does not have a foreign language requirement.
Optional Department Requirements
Each department may determine requirements for a doctoral student with regard to entrance examinations, qualifying examinations, preliminary or comprehensive examinations and course sequences.

Advancement to Candidacy
A student should apply for advancement to candidacy after completion of one-half of the credits required for the degree in his or her program but no later than prior to the final semester of the graduate program. A student must be fully admitted and in good standing to be advanced to candidacy. Advancement to Candidacy forms can be obtained online at http://www.uakron.edu/gradscish/current-students/currentforms.dot, from the academic department, or from the Graduate School.

Students must submit an Advancement to Candidacy form to the departmental office by the following dates:

- September 15 for Spring Commencement
- February 15 for Summer Commencement
- May 15 for Fall Commencement

Dissertation and Oral Defense*
The ability to do independent research and demonstrate competence in scholarly exposition must be demonstrated by the preparation of a dissertation on some topic related to the major subject. It should represent a significant contribution to knowledge, be presented in a scholarly manner, reveal the candidate's ability to do independent research and indicate experience in research techniques.

A doctoral dissertation committee supervises and approves the dissertation and administers an oral examination upon the dissertation and related areas of study. This examination is open to the graduate faculty. The dissertation and oral examination must be approved by the committee before the dissertation is submitted to the Graduate School.

To be eligible to graduate during any given term, a candidate must meet both the preliminary and final dissertation submission deadlines. Each candidate is responsible for consulting the Schedule of Classes, their advisor/department, or the Graduate School to determine these deadlines.

A draft copy of the dissertation is due in the Graduate School prior to the preliminary deadline. The candidate must submit one original, signed dissertation signature page to the Graduate School; submitted one electronic copy of the dissertation to OhioLINK. A manual entitled Guidelines for Preparing a Thesis or Dissertation can be obtained online at http://www.uakron.edu/gradscish/current-students/guidepreparethesddiss.dot and the dissertation must conform to these instructions.

*The Doctor of Audiology (Au.D.) does not require a dissertation.

Graduation
To be cleared for graduation, a candidate must have completed the academic program with a minimum cumulative graduate grade-point average of 3.00; been advanced to candidacy; met the preliminary and final dissertation deadlines; submitted one original, signed dissertation signature page to the Graduate School; submitted one electronic copy of the dissertation to OhioLINK; passed an oral examination; paid all applicable fees; and met any other applicable department and University requirements.

SECTION 4. Graduate Studies

Buchtel College of Arts and Sciences

Chand Midha, Ph.D., Dean
Charles B. Monroe, Ph.D., Associate Dean
Richard W. Stratton, Ph.D., Acting Assistant Dean for Assessment and Fiscal Affairs
Linda M. Subich, Ph.D., Associate Dean
Joseph Wilder, Ph.D., Associate Dean
John Zipp, Ph.D., Associate Dean

Mission Statement
The mission of the Buchtel College of Arts and Sciences is to provide high quality education in humanities, social sciences, and natural sciences. These varied disciplines constitute the foundation of a liberal arts education.

The College strives to foster excellence in teaching, scholarship, and service in a positive environment that will enhance lifelong learning and student accomplishment.

The College develops independent learning, critical thinking, personal responsibility, and leadership to prepare graduates to fulfill their career objectives in an environment of societal and cultural change.

Organization
The Buchtel College of Arts and Sciences has three administrative divisions: Humanities, Natural Sciences, and Social Sciences. The Humanities Division includes the departments of Anthropology and Classical Studies; English; Modern Languages; and Philosophy. In these disciplines students learn about the evolution of diverse civilizations, their languages, literatures, cultures, and their contributions to our accumulated wisdom.

The Natural Sciences Division includes the departments of Biology, Chemistry, Computer Science, Geology and Environmental Science, Physics, Theoretical and Applied Mathematics, and Statistics. Students will explore physical and biological aspects of their world and learn to understand mathematics, the language of science. Their investigations will range from the characterization of molecules to mapping the expanse of the universe. They will learn about 3.5 billion years of Earth’s history and the science that will create the technologies of the future.

The Social Sciences Division includes the departments of Economics, Geography and Planning, History, Political Science, Psychology, Public Administration and Urban Studies (graduate only), and Sociology. In these disciplines students observe individuals, closely knit organizations, whole cultures developing over the centuries (sometimes at peace and sometimes at war), the economic and geographical realities affecting these populations, and the ways societies organize themselves for harmony, protection, and prosperity.

DOCTOR OF PHILOSOPHY DEGREE
The following programs leading to the Doctor of Philosophy degrees are offered in the Buchtel College of Arts and Sciences: the Doctor of Philosophy in Chemistry, the Doctor of Philosophy in Counseling Psychology, the Doctor of Philosophy in History, the Doctor of Philosophy in Integrated Bioscience, and the Doctor of Philosophy in Psychology. The Doctor of Philosophy in Sociology is offered jointly with Kent State University and the Doctor of Philosophy in Urban Studies and Public Affairs with Cleveland State University.

Doctor of Philosophy in Chemistry
(315000PHD)
The Doctor of Philosophy in Chemistry is granted for high scholarly achievement in analytical, inorganic, organic, physical or biochemistry. Students with either a baccalaureate or master’s degree may be admitted to the program. They must satisfy the following requirements to receive the degree:

- Complete a course of study designed in consultation with an advisor or advisory committee. This consists of the completion of at least 90 credits beyond the baccalaureate degree, including 24 credits of appropriate coursework.
• Complete monthly cumulative exam requirement.
• Complete oral exam requirement.
• Complete seminar requirement.
• Defend dissertation in an oral examination.
• Complete all general requirements for the doctor of philosophy degree.

**Admission Requirements**

In addition to submission of the graduate application and official transcripts applicants must submit three letters of recommendation and a statement of purpose. Application materials should be submitted by June 1 for fall enrollment and by November 15 for spring enrollment.

**Interdisciplinary Option in Chemical Physics**

The faculty in the Departments of Chemistry and Physics jointly offer an option leading to a Ph.D. in Chemistry for students who elect the interdisciplinary field of chemical physics.

**Admission Requirements**

Applicants for the Chemical Physics Option may be admitted with either a baccalaureate or a master’s degree, in either chemistry or physics. All applicants must have their graduate application and credentials evaluated by the Chemistry Department. All admission requirements for the Doctor of Philosophy in Chemistry, as given in this Graduate Bulletin, shall apply to applicants for admission to the Chemical Physics Option.

Graduate students in good standing in the Physics Department may apply for admission as above. Successful applicants should have some advanced chemistry course work (200-level and above) and endorsement by the chair of the Physics Department.

**Degree Requirements**

The applicable degree requirements for the Chemical Physics option are those of the Doctor of Philosophy in Chemistry, as stated in the Graduate Bulletin. These degree requirements consist of the following:

- complete a course of study designed in consultation with an advisor or advisory committee, consisting of at least 90 credits beyond the baccalaureate degree, including 24 credits of appropriate chemistry coursework and approved physics electives;
- complete the requirements of the monthly cumulative exams, the oral exam, and the seminar;
- defend the dissertation in an oral examination;
- complete all general requirements for the Doctor of Philosophy degree.

Students entering with the endorsement of the Physics Department must choose an advisor in the Physics Department holding a joint appointment in Chemistry; other students must select as research advisor a participating faculty member in the Chemistry Department. Students entering the program with principle preparation in physics may be required to audit certain undergraduate prerequisites for chemistry graduate courses, and visa versa for students whose principle preparation is in chemistry.

**Doctor of Philosophy in Integrated Bioscience**

(31001PHD)

The Departments of Biology, Theoretical and Applied Mathematics, Biomedical Engineering, Chemical and Biomolecular Engineering, Chemistry, Civil Engineering, Computer Science, Geology, Physics, and Polymer Science and Polymer Engineering offer an interdisciplinary Ph.D. program in Integrated Bioscience. Students admitted to the program take three core courses in Integrated Bioscience and then take a mixture of courses from the various participating departments. Students are required to incorporate an integrative aspect to their biologically-based research project that will incorporate approaches from multiple disciplines, and all students will have advisors on their committees that include faculty from two or more of the participating departments.

This program is designed to train students to understand modern biology in the context of integrated biological systems. This program will combine modern biology, bioengineering, bioinformatics, biochemistry, and biopolymers with the central unifying theme of connection across levels of biological organization. The program is composed of six areas of excellence: (1) molecular cell biology and genetics; (2) physiology and organismal biology; (3) ecology and evolutionary biology; (4) biochemistry and biopolymers; (5) bioinformatics and computational biology; and (6) bioengineering. Integrating information drawn from these areas of excellence will provide students with high-demand, specific skills as well as allow them to develop integrative thinking and problem-solving expertise that will be critical for progressing in the ever-expanding realm of biosciences.

**Admission Requirements**

The applicant must meet the University admission requirements and have an undergraduate degree from an accredited institution. Applicants must submit GRE scores, although not required it is highly recommended that applicants also submit subject GRE in the field of undergraduate degree, three letters of recommendation, statement of career goals and research interests, and note up to five faculty (rank-ordered) which they would be interested in having as their faculty advisor(s). Applicants are encouraged to contact their prospective Ph.D. advisors prior to submitting their formal applications. International students should contact The University of Akron Graduate School for specific admission requirements. Applications will be ranked according to:

- Academic background as evidenced by grade point average of at least 3.0
- GRE scores
- Letters of recommendation (three preferred)
- Willingness of one or more potential advisors to take student on as an advisee

Applications are accepted on a rolling basis. Review of applications begins in mid-January for fall enrollment.

**Doctor of Philosophy in Counseling Psychology**

(376000PHD)

The University of Akron offers a doctoral program in Counseling Psychology. The Collaborative Program in Counseling Psychology allows the student a choice of entry points through the Psychology Department of the Buchtel College of Arts and Sciences or through the Counseling Department of the College of Education. The Collaborative Program in Counseling Psychology is accredited by the American Psychological Association. Students in both departments are expected to attain a level of broad scientific competence in the core areas of psychology; the biological, social, cognitive-affective, and individual bases of human behavior. Practicum and internship experiences are also required of all students and range from skill building in basic psychological assessment and counseling, to actual work with clients, to a year-long, full-time internship in an applied service setting. Pertinent information regarding the emphasis, orientation, and coursework for the Psychology Department entry point is included below. Students receive exposure to both colleges through shared course work and faculty involvement with exams and dissertations.

The Department of Psychology offers a five-year Counseling Psychology program leading to a doctoral degree and, in general, is geared toward students who hold a B.A. in psychology with cumulative undergraduate grade point average of 3.0 or above and a grade point average of 3.25 or above on all psychology coursework. Program emphasis is strongly placed on a scientist-practitioner model of training. Beyond the basic core areas of psychology, students are expected to establish specific competencies in the areas of theory, research, and practice of Counseling Psychology. Academic preparation includes theories of psychotherapy, supervision, diversity issues in counseling psychology, vocational psychology, testing theory and practice, research and statistics, and professional issues. Research analysis is greatly encouraged. Graduates typically seek out academic teaching, research and training positions, as well as positions in counseling centers and other mental health agencies.

Admission to the Collaborative Program in Counseling Psychology is handled through the department associated with the student’s chosen entry point. Students must fulfill both Departmental and Graduate School admission requirements. The following application materials must be submitted by the December 1 application deadline:

- Graduate School application
- Brief statement of professional goals and reasons for choosing the field of counseling psychology and The University of Akron.
- Official transcripts of all undergraduate and graduate (if applicable) coursework from each institution attended
- Official reports of the GRE General Test
- Minimum of three letters of recommendation attesting to success in the field and probable academic success at the doctoral level.

Departures from the described program for Psychology Department entry may be made only with the approval of the counseling psychology program faculty.

**Requirements**

The curriculum reflects the interdepartmental blend of the Collaborative Program in Counseling Psychology. Electives and other classes are to be planned along with the student’s advisor.

**Credits**

- Psychology core courses (610, 620, 630, 640, 650) 10
- Counseling psychology core courses (710, 709, 710, 711, 712, 713, 714, 717) 33
- Practicum sequence (672 [2+2+2+2], 873 [2+2+2+2], 796 [4+4], 796 [4+4]) 32
- History, measurement, and developmental coursework (718, 722, 750) 8
– Electives (minimum) 6
– Statistics (601, 602) 8
– A statistics sequence that may be substituted for the doctoral language requirement 8
– Thesis credits (minimum) 1
– Dissertation credits (minimum) 12

• A thesis or thesis waiver completed as specified in the Graduate Student Manual of the Department of Psychology.
• The comprehensive written examination is prepared, administered and graded by program faculty. At least one faculty member from each department participates in the oral portion of the comprehensive examination.
• Dissertation – at least one faculty member from each department is required on the student’s dissertation committee.
• Internship – 2,000 hours postmaster’s over no more than two years. The internship site must be approved in advance by the Collaborative Program Internship Committee.
• Students must maintain a 3.50 GPA in their content courses each year in the Department of Psychology.

Doctor of Philosophy in History (340000PHD)
The Doctor of Philosophy in History is granted primarily for high scholarly achievement in four fields of study selected by the student and for demonstrated ability to pursue independent research. Each student must:
• Fulfill admission requirements of the Graduate School.
The Graduate Committee of the History Department will consider an applicant for admission if a person has a Master’s degree or the equivalent and a grade-point average of 3.5 or better at the M.A. level from an accredited institution. Those holding a Master’s degree from The University of Akron or other accredited institution should not assume that they will automatically be admitted to doctoral studies. In addition to the application made to the Graduate School of The University of Akron, the student must submit to the History Department the following materials:
– a personal statement of reasons for wishing to undertake doctoral study and the fields of study the student wishes to pursue;
– three letters of recommendation from former professors;
– a writing sample, preferably a seminar paper or other comparable scholarly work;
– scores on the Graduate Record Examination, General Aptitude Test;
– evidence of a reading knowledge of one foreign language or knowledge of an acceptable cognate field. Those whose native language is not English must demonstrate proficiency in English.
Application materials must be received by February 1 if seeking departmentally-funded fellowship. Applicants not seeking departmentally-funded fellowship must have application materials submitted by June 1.
The History Department does not encourage applications for the doctoral program from students who have received both B.A. and M.A. degrees from The University of Akron. Special circumstances may warrant consideration, however, and the Graduate Committee reserves the right to judge applications on their own merit.
• Complete studies selected by the student in consultation with an advisory committee, including:
– completion of 60 credits beyond master’s degree requirements, including dissertation credit. Courses at the 500-level in the student’s major and dissertation fields will not be counted toward the degree, and only 9 hours of 500-level courses in the student’s secondary fields will be counted;
– demonstration of competency in four fields of study selected from the following areas in which the student will be expected to pass written and oral comprehensive exams: ancient, medieval, early modern Europe to 1789, modern Europe since 1750, America to 1877 United States since 1877 Latin America, Far East, Africa, Middle East, South Asia, and History of Science. These four fields must include at least one each in American, European, and non-western history. The student’s dissertation will fall within one of the four chosen fields;
– satisfactory performance in written and oral comprehensive examinations;
– defense of the dissertation in an oral examination.
• A reading knowledge of two foreign languages will be required. With the approval of the student’s doctoral committee and the Graduate Committee, the student may substitute a cognate field for one of the two required languages when it seems appropriate for the student’s general program.
• Complete all general requirements for the Doctor of Philosophy degree.

Doctor of Philosophy in Psychology (375002PHD: Industrial Organizational)
(375006PHD: Adult Development and Aging)
The Department of Psychology offers a doctoral degree in psychology with specialization in either industrial/organizational psychology or adult development and aging.
A degree will be awarded to a student who, besides fulfilling the general requirements, has met the following specific requirements:
• Fulfill admission requirements of the Graduate School and department requirements as follows:
  – completion of master’s degree including 30 graduate credits;
  – attainment of a graduate grade-point average (GPA) of 3.25;
  – completion of Graduate Record Examination General Test;
  – securing of three letters of recommendation from persons familiar with applicant’s academic work;
  – submission of a brief personal statement of professional goals and reasons for choosing the field of I/O or Adult Development and Aging and The University of Akron;
• Application materials must be received by January 15.
  – a minimum of 94 graduate credits including a 30-credit master’s program. A student may be required to complete additional credits beyond the 94 minimum credit requirement;
  – completion of Ph.D. core courses in the student’s specialty area: industrial/organizational or adult development and aging. Core courses are specified in the Department of Psychology Graduate Student Manual. The student is required to maintain at least a 3.5 GPA in core courses and overall courses;
  – completion of additional required and elective courses to be planned in consultation with the student’s faculty advisor and subject to approval by the industrial/organizational or adult development and aging committees.
  – Written comprehensive examinations:
    – satisfactory performance on doctoral written and oral comprehensive examinations in the student’s major area of industrial/organizational psychology or adult development and aging (refer to the department’s graduate student manual).
  – Dissertation research:
    – completion of 3750:899 Doctoral Dissertation; (minimum 12 credits);
    – satisfactory performance on final examination and defense of dissertation research;
  – Other requirements:
    – refer to the department’s graduate student manual for other requirements or guidelines;
    – complete and fulfill general doctoral degree requirements of the Graduate School.
Doctoral language requirements or appropriate alternative research skills and techniques may be prescribed by the student’s advisory committee, depending upon the career plans of the student and upon the academic and/or scientific requirements of the dissertation.
The Psychology departments at The University of Akron and Cleveland State University offer a joint doctoral program in the Psychology of Adult Development and Aging. Students admitted to the program are required to take approximately equal amounts of coursework at each institution. The coursework covers the areas of research methods/design, foundation courses in adult biobehavioral functioning, adult psychosocial functioning, and advanced research seminars. The doctoral degree will require a minimum of 94 credit hours of coursework comprised of 78 classroom hours from the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>3750:601</td>
<td>Psychological Research Using Quantitative and Computer Methods I</td>
</tr>
<tr>
<td>3750:602</td>
<td>Psychological Research Using Quantitative and Computer Methods II</td>
</tr>
<tr>
<td>3750:640</td>
<td>Core IV: Biopsychology</td>
</tr>
<tr>
<td>3750:727</td>
<td>Psychology of Adulthood and Aging</td>
</tr>
<tr>
<td>3750:790</td>
<td>Industrial Gerontology</td>
</tr>
<tr>
<td>3750:754</td>
<td>Research Methods in Psychology</td>
</tr>
<tr>
<td>3750:780</td>
<td>Graduate Seminar in Psychology: Additional Research Methods Courses (Multivariate Methods, Factor Analysis, Structural Equation Modeling)</td>
</tr>
<tr>
<td>3750:731</td>
<td>Perception, Attention, and Aging</td>
</tr>
<tr>
<td>3750:732</td>
<td>Cognition and Aging</td>
</tr>
<tr>
<td>3750:736</td>
<td>Psychopharmacology in Adulthood</td>
</tr>
<tr>
<td>3750:728</td>
<td>Social Aging</td>
</tr>
</tbody>
</table>
Doctor of Philosophy in Sociology Akron-Kent Joint Ph.D. Program (385000PHD)

The University of Akron and Kent State University departments of sociology offer a joint program leading to the Ph.D. in Sociology. Faculty and students in the joint doctoral program are for all intents and purposes involved in a single graduate program. Course work is offered at both campuses, and faculty from both campuses serve on student committees and research projects.

Admission to the Program

Our program seeks to admit students who expect to complete a Ph.D. at the University of Akron. We encourage applications from students who have only completed a bachelor’s degree as well as from those who have completed a master’s degree elsewhere. The curriculum in this program is structured to serve full-time students, and we presume that all students admitted intend to complete a doctorate. For students admitted without a master’s degree, the master’s degree in Sociology is awarded during the completion of doctoral program requirements. We recommend that students who are not interested in receiving a Ph.D. or who are interested in a part-time program of study consider applying to sociology programs that focus on awarding master’s degrees and which better able serve the needs of part-time students.

Specific criteria considered for admission include:

- Fulfill the admission requirements of the Graduate School and department requirements;
- Attainment of an undergraduate grade point average (GPA) of 3.0 or a graduate GPA of 3.5;
- Completion of Graduate Record Examination General Test;
- Submission of a writing sample; preferably a course paper or comparable piece of scholarly work;
- Submission of a personal statement indicating reasons for pursuing a graduate degree in sociology at The University of Akron;
- Submission of three letters of recommendation from persons familiar with the applicant’s academic work;
- Applicants whose native language is not English must also score at least 577 (paper-based) or 233 (computer-based) on the Test of English as a Foreign Language.

Application materials must be received by January 15 for those applicants seeking funding. Applicants not seeking funding must have application materials submitted by March 1.

Please note that the admissions committee is unable to consider incomplete applications. We encourage interested applicants to visit the department’s website for further information about the program and the application process.

Degree Requirements

In addition to meeting the general requirements of the Graduate School, a student working toward the Doctor of Philosophy in Sociology must meet the following requirements:

- Professional Development Coursework:
  - 3850:628 Professional and Ethical Issues in Sociology (3 credit hours)
  - 3850:700 College Teaching of Sociology (3 credit hours)
- Research Methods and Statistics Coursework:
  - 3850:629 Quantitative Methods in Sociology (4 credit hours)
  - 3850:604 Multivariate Techniques in Sociology (4 credit hours)
  - 3850:709 Advanced Data Analysis (4 credit hours)
  - 3850:714 Qualitative Methodology (4 credit hours)
- Sociological Theory Coursework:
  - 3850:722 Early Sociological Thought (3 credit hours)
  - 3850:723 Contemporary Sociological Thought (3 credit hours)
- If admitted with an MA: 32 credit hours of elective coursework;
- If admitted without an MA: 26 credit hours of elective coursework plus successful completion of six thesis credit hours. Completion of thesis hours requires the writing and defense of a thesis proposal as well as a final thesis document and oral defense of document;
- Successful completion of comprehensive examinations in major and minor specialty areas (from departmental list);
- Successful completion of dissertation document, oral defense of document, and 30 dissertation credit hours;
- Complete and fulfill general doctoral degree requirements of the Graduate School.

Doctor of Philosophy in Urban Studies and Public Affairs (398006PHD)

(Admissions currently suspended)

The Department of Public Administration and Urban Studies offers a program leading to the Ph.D. in Urban Studies and Public Affairs. This is a joint program with Cleveland State University Levin School of Urban Studies. Students admitted to the program may take courses at either campus and all doctoral committees contain members from both universities.

The program is designed to educate scholars interested in university or professional careers in the fields of public administration and urban affairs with particular emphases on public administration, urban policy, and policy analysis and evaluation.

Admission

Admission to the Ph.D. program involves faculty consideration of all of the following criteria which, taken together, present evidence of the likelihood of success in advanced study:

- Completion of a master’s degree.
- Grade Point Average GPA from master’s degree above 3.5. However, having a GPA above 3.5 is not in itself sufficient for admission.
- Submission of official test results on the verbal and quantitative portion of the Graduate Record Examination General Test. Official results from other, equivalent standardized tests used for graduate admissions may be substituted.
- Three letters of recommendation from persons familiar with the applicant’s recent performance and abilities.
- A sample of the student’s academic work. This should be a thesis or final project paper from the master’s degree program.
- A personal statement from the applicant detailing the intended area of specialization and career aspirations. An applicant will be admitted only if faculty resources are available in the area of specialization detailed by the applicant.
- Those applicants for whom English is not their native tongue must demonstrate proficiency in the English language by scoring a minimum of 570 on the Test of English as a Foreign Language (TOEFL), submitting an acceptable score on the Test of Written English (TWE) and by scoring a minimum of 220 on the Test of Spoken English (TSE).

Application materials must be submitted at least six weeks prior to the term for which enrollment is sought. For applicants seeking a graduate assistantship, application materials must be submitted by April 1 for fall enrollment and November 15 for spring enrollment.

Degree Requirements

A minimum of 64 credit hours are required to complete this degree. A required core of methods and foundational courses totaling 25 credit hours, a field study or specialization area of 27 credit hours, and 12 credit hours of dissertation. The department offers two specializations: Public Administration and Applied Policy.

- Core Requirements (25 credits):
  - 3860:700 Advanced Research Methods I
  - 3860:701 Advanced Research Methods II
  - 3860:706 Economics of Urban Policy
  - 3860:708 Urban Policy: The Historical Perspective
  - 3860:710 Qualitative Research Methods
  - 3860:716 Theoretical Foundations for Public Affairs
  - 3860:740 Survey Research Methods
  - 3860:780 Ph.D. Colloquium
  - 3860:795 Pro-Seminar

Refer to the Departmental Graduate Student Handbook for detailed description of requirements or contact the Ph.D. Coordinator for further information.

MASTER’S DEGREES

Programs of advanced study leading to the master’s degree are offered by the departments of biology, chemistry, computer science, economics, English, geography and planning, geology (earth science), history, mathematics, modern languages (Spanish, physics, political science, psychology, sociology, statistics and public administration and urban studies. Before undertaking such a program, the student must show that the general requirements for admission to the Graduate School have been met, and the standard requirements for an undergraduate major in the area of the proposed graduate specialty have been met or that the student has performed work which the department approves as equivalent to an undergraduate major.
**Chemistry (315000MS)**

**Master of Science**

**Admission Requirements**

- A minimum grade point average of 3.00 (4.00=A) and 3.00 average in Biology (minimum 32 semester hours or equivalent).
- Competence in Chemistry and Mathematics is expected.
- Entering students must provide scores from any one or more of the following standardized tests: General GRE, Biology-specific GRE, or MCAT. Students are expected to score above the 25th percentile to be competitive for admission (provisional or full). Full admission is required for a teaching assistantship or tuition waiver.
- A letter of interest from the prospective advisor in the Biology department is required.
- Foreign students, in addition to the above requirements, must have a score of 220 or more on the TOEFL and one of the following: a) >=23 on the “S” portion of the TOEFL, b) >=60 on the Test of Spoken English (TSE), or c) a passing score on the U-Adopt test.

Applications are accepted on a rolling basis. Review begins in January/February for fall enrollment.

**Computer Science**

**Master of Science – Computer Science (346000MS: Non-thesis Option)**

**Admission Requirements**

All applicants for admission to the graduate program in computer science must meet the university requirements for graduate admission as published in the Graduate Bulletin. In addition to these requirements, the applicant must also:

- submit three letters of recommendation from individuals capable of evaluating the applicant’s potential for success in the program;
- submit a statement of purpose;
- submit a statement of resume;
- have earned a baccalaureate degree in computer science or a related discipline from an accredited college or university with a GPA of 3.00 or higher in computer science and related courses;
- demonstrate knowledge of at least one high-level programming language and, demonstrate proficiency in data structures, computer organization and operating systems.

A student deficient in one or more of these areas may be granted provisional admission.

Application materials must be submitted by March 15 for fall and summer enrollment and by October 15 for spring enrollment. Applications submitted after these deadlines may be considered.

**Degree Requirements**

The curriculum has been designed to follow the guidelines and recommendations of the Association for Computing Machinery for Master’s Programs in Computer Science. Most full-time degree candidates admitted into the program will complete the degree requirements in two years. The thesis option requires 30 semester hours of graduate work while the nonthesis option requires 39. With prior consent, up to 6 credits of approved graduate-level coursework outside the department may be substituted for elective courses in both the thesis and non-thesis options. The grade point average of all Computer Science courses and pre-approved electives taken at The University of Akron must not be less than 3.0.

- Core Courses (required of all students):
  - 3460:535 Algorithms
  - 3460:635 Advanced Algorithms
  - 3460:621 Research Methodology
  - Two courses from Software, Languages and Systems: 3460:626, 630, 641, 653, 655, 665, 677, and 680.
  - Two courses from Applications: 3460:645, 658, 660, and 676.

Note: 689 may be counted for requirement area (3) or (4) upon the approval of the department.

**Thesis Option** (30 credits of graduate work)

24 credits in approved coursework, at least 15 credits of which must be taken at the 600 level. In addition, 3 credits in 3460:698 Master’s Research and 3 credits in 3460:699 Master’s Thesis. The thesis must be of publishable quality and must be successfully presented at a public defense moderated by three full time Graduate Faculty (two of which must be from Computer Science).

**Non-thesis Option** (39 credits of graduate work)

39 credits in approved coursework, at least 21 credits of which must be taken at the 600 level.

**Cooperative Education Program in Computer Science (346008MS: Non-thesis Option)**

**Admission Requirements**

Arrangements for student entry into the program are on an individual basis, and must be initiated by the student. The Cooperative Education Program is an optional program available only to full-time Computer Science students at The University of Akron who have satisfactorily met the following requirements:

- completion of at least 18 credits in computer science applicable to the master’s degree with a grade point average of at least 3.0 out of 4.0;
- acceptance by a cooperative education coordinator or director following interviews;
- a transfer student must have completed at least 9 credits in computer science at The University of Akron with a grade point average of at least 3.0 out of 4.0.

**Degree Requirements**

- Thesis option – six credits.
- Participation in departmental seminars.

**Biology (310000MS)**

**Admission Requirements**

- A minimum grade point average of 3.00 (4.00=A) and 3.00 average in Biology (minimum 32 semester hours or equivalent)
- Competence in Chemistry and Mathematics is expected.
- Entering students must provide scores from any one or more of the following standardized tests: General GRE, Biology-specific GRE, or MCAT. Students are expected to score above the 25th percentile to be competitive for admission (provisional or full). Full admission is required for a teaching assistantship or tuition waiver.
- A letter of interest from the prospective advisor in the Biology department is required.
- Foreign students, in addition to the above requirements, must have a score of 220 or more on the TOEFL and one of the following: a) >=23 on the “S” portion of the TOEFL, b) >=60 on the Test of Spoken English (TSE), or c) a passing score on the U-Adopt test.

Applications are accepted on a rolling basis. Review begins in January/February for fall enrollment.

**Thesis Option I**

The program is primarily for the students who will pursue a research career, including the student who intends to extend to a doctoral program in the biological sciences.

- Course work in addition to the master’s research and seminars (must be approved by the student’s advisory committee) – 24 credits.
- Research and thesis – minimum of 12 credits.
- Participation in seminars – a maximum of four credits.
- A minor may be taken in approved graduate courses including education. Summer study at a biological station is available.

**Thesis Option II**

This program is intended for Medical Doctors and Doctors of Osteopathic Medicine who have graduated from an accredited U.S. medical school.

- Course work in addition to the master’s research and seminars (must be approved by the graduate advisor) – 16 credits (no transfer credits are allowed for this option).
- Research and thesis – minimum of 12 credits.
- Participation in seminars – a maximum of two credits.

**Required Courses for Both Options:**

At least two courses of the following six listed below are required.

- 3100:616 Graduate Evolutionary Biology
- 3100:617 Advanced Ecology
- 3100:625 Basic DNA Techniques
- 3100:626 Techniques in Molecular Biology
- 3100:633 Integrative Stress Physiology
- 3100:617 Advanced Ecology

**Nonthesis Option**

This program is designed exclusively for secondary school teachers for whom the M.S. probably will be a terminal degree and who do not need research experience. The program is open only to applicants possessing a teaching certificate or those coregistering with the College of Education and showing normal progress towards qualifying for a certificate.

The requirements are the same as the research option except that no thesis and research is undertaken, but a total of 40 credits of approved coursework (including a maximum of four credits for seminar participation) is required.

For additional details concerning admission standards, degree requirements and selection of options, refer to the Department of Biology Graduate Student Guide.
A student who desires to participate in the program will fill out an application and submit it to the cooperative education office. The student will then meet with a member of the cooperative education staff to discuss the availability of prospective employers. During this interview, the student will be asked to sign a Student Agreement which will become effective upon employment. Employment must be coordinated or have approval of the department and the cooperative education director. The University does not guarantee employment for the student. The student will be expected to remain with the employer during the time period specified by the Student Agreement.

Registration

While no academic credits are assigned, each student must register for 3000:501 Cooperative Education in the same manner that a student registers for any other University course. See department advisor before enrolling for this course.

A cooperative program fee for each work period is charged. Upon completion of a work period, a statement will appear on each student’s official transcript listing the course number, title and name of the employer. In the place of a letter grade, “credit” or “no credit” will be given, depending on the student’s satisfactory or unsatisfactory completion of the following:
- work performance as evaluated by the employer;
- progress report written by the student during the work period;
- written work report as approved by the department chair and cooperative education staff.

Usually, work progresses satisfactorily on the job and a grade of “credit” is assigned at the end of the semester. If all the above conditions are not met, a grade of “no credit” will be submitted.

Economics

Master of Arts (3250000MA)

Admission Requirements

For full admission students require Intermediate Microeconomics, Intermediate Macroeconomics, Calculus I, and Statistics. The academic background of each applicant will be reviewed by the Director of Graduate Studies to determine whether background deficiencies exist for his/her planned program of study. Exceptional departures from these requirements may be approved with the permission of the Director of Graduate Studies and Department Chair. All applicants must submit at least two letters of recommendation (preferably from academics) and a statement of purpose. International applicants must also submit scores from the GRE.

Applications should be submitted at least six weeks prior to the term for which enrollment is sought. Applicants seeking financial support must submit application materials by February 15 for fall enrollment and by November 15 for spring enrollment.

Thesis Option

A minimum of 30 credits of coursework including a thesis equivalent to six credits is required. At least 21 credits must be at the 600 level in economics. Thesis must be written in an area of specialization in which the individual has at least two courses.

Nonthesis Option

A minimum of 30 credits of coursework is required. At least 21 credits must be at the 600 level in economics. Required courses for both options:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>3250:602</td>
<td>Macroeconomic Analysis I</td>
<td>3</td>
</tr>
<tr>
<td>3250:611</td>
<td>Microeconomic Theory I</td>
<td>3</td>
</tr>
<tr>
<td>3250:620</td>
<td>Applications of Mathematical Models to Economics</td>
<td>3</td>
</tr>
<tr>
<td>3250:626</td>
<td>Statistics for Econometrics</td>
<td>3</td>
</tr>
<tr>
<td>3250:627</td>
<td>Econometrics</td>
<td>3</td>
</tr>
</tbody>
</table>

Courses taken outside the department must be approved (in writing) by the student’s advisor prior to enrollment.

English

Master of Arts – Literature Track

Graduation Requirement: Candidates for graduation must see the Department of English Graduate Coordinator to complete the departmental Graduate Student Survey.

Nonthesis Option

A minimum of 36 credits is required, of which 24 must be at the 600 level and 24 must be in literature or literary theory.

Required Courses for Both Options

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>3300:656</td>
<td>Chaucer†</td>
<td></td>
</tr>
<tr>
<td>3300:615</td>
<td>Shakespearean Drama†</td>
<td></td>
</tr>
<tr>
<td>3300:666</td>
<td>Literary Criticism</td>
<td></td>
</tr>
<tr>
<td>3300:570</td>
<td>History of the English Language†</td>
<td></td>
</tr>
<tr>
<td>3300:670</td>
<td>Modern Linguistics†</td>
<td></td>
</tr>
</tbody>
</table>

At least one course in four of the following five categories is required:

- British English
- American English
- Up to 1660
- 1660-1900
- 1900-present

Graduation Requirement: Candidates for graduation must see the Department of English Graduate Coordinator to complete the departmental Graduate Student Survey.

Master of Arts – Composition Track

(3300001MA: Non-thesis Option)

(3300001MAT: Thesis Option)

The Composition Track is intended for students interested in teaching English in secondary schools, two-year colleges, and four-year colleges. The degree is also appropriate for those planning to enter a doctoral program in composition and rhetoric. The program does not lead to state certification for teaching; students should consult the Department of Cumcilar and Instructional Studies for requirements for state certification to teach in the public schools.

Admission Requirements

In addition to the graduate application and official transcripts, applicants must submit a statement of purpose. Applications are accepted on a rolling basis.

Thesis Option

A minimum of 33 credits is required (27 credits of coursework and 6 hours of thesis). Of the 27 credits of coursework, 18 must be in composition studies (including courses in composition, rhetoric, and linguistics). Of the 27 credits of coursework, 18 must be at the 600 level.

Graduation Requirement: Candidates for graduation must see the Department of English Graduate Coordinator to complete the departmental Graduate Student Survey.

Nonthesis Option

A minimum of 36 credits is required, only 6 of which may be individual reading. At least 24 credits required in composition studies (including courses in composition, rhetoric, and linguistics). Of the 36 credits of coursework, 21 must be at the 600 level.

Required courses for both options:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>3300:650</td>
<td>The New Rhetorics</td>
<td></td>
</tr>
<tr>
<td>3300:673</td>
<td>Theories of Composition</td>
<td></td>
</tr>
<tr>
<td>3300:674</td>
<td>Research Methodologies in Composition</td>
<td></td>
</tr>
</tbody>
</table>

Students must also choose one of the following two courses:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>3300:589</td>
<td>Grammatical Structures of Modern English</td>
<td></td>
</tr>
<tr>
<td>3300:670</td>
<td>Modern Linguistics</td>
<td></td>
</tr>
</tbody>
</table>

And one of the following three courses:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>3300:579</td>
<td>Management Reports</td>
<td></td>
</tr>
<tr>
<td>3300:625</td>
<td>Autobiographical Writing</td>
<td></td>
</tr>
<tr>
<td>3300:679</td>
<td>Scholarly Writing</td>
<td></td>
</tr>
</tbody>
</table>

Optional courses:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>3300:660</td>
<td>Cultural Studies: Theory and Practice</td>
<td></td>
</tr>
<tr>
<td>3300:689</td>
<td>Contemporary Reading Theory</td>
<td></td>
</tr>
<tr>
<td>3300:689</td>
<td>Composition and Rhetoric</td>
<td></td>
</tr>
<tr>
<td>3300:689</td>
<td>Literature and Composition</td>
<td></td>
</tr>
</tbody>
</table>

Graduation Requirement: Candidates for graduation must see the Department of English Graduate Coordinator to complete the departmental Graduate Student Survey.

†Unless the student has passed a comparable course at the undergraduate level with a grade of “B” or better.
Master of Fine Arts in Creative Writing (335007MFA)
The University of Akron, Cleveland State University, Kent State University, and Youngstown State University offer jointly the MFA in Creative Writing. This degree provides students with opportunities to develop their skills in writing fiction, poetry, drama, and creative non-fiction. It is the terminal degree. Through extensive practice in workshops and craft and theory courses, students will develop their creative writing abilities while also studying literature and completing a relevant internship.

Admission Requirements
Students must be accepted by the Graduate School at The University of Akron or one of the other three participating universities. They must also submit three letters of recommendation, transcripts, and a writing portfolio. The portfolio will be reviewed by an admissions committee of members from all four universities. Application materials must be submitted by February 1.

Degree Requirements
Students must complete the following courses among the participating universities by taking classes restricted to graduate students only, except as noted below:
• Writing Workshops - 15 credits
• Craft and Theory Courses - 9 credits (at least three and no more than six in the student's primary genre of concentration)
• Literature Courses - 6 credits
• Internship - 3 credits
• Thesis - 6 credits
• Electives - 9 credits, up to six of which may be from advisor-approved courses not solely restricted to graduate students

A total of 48 credit hours is required for the MFA in Creative Writing.

Up to nine credits from previously uncompleted graduate degrees may be accepted for transfer credit in the NEOMFA program.

Master of Science in Geography/Geographic Information Sciences (335010MS: Thesis Option) (335000MS: Nonthesis Option)

Admission Requirements
In addition to the graduate application and official transcripts applicants must submit two letters of recommendation and a statement of purpose. Applications are accepted on a rolling basis.

Thesis Option
• Core Requirements (18 credits)
  3350.581 Research Methods in Geography and Planning
  3350.583 Spatial Analysis
  3350.596 Field Research Methods
  3350.687 History of Geographic Thought
  3350.600, 601 Seminar (6 credits)
• Geotechniques Requirements (9 credits)
  3350.505 Geographic Information Systems
  3350.540 Cartography
  3350.547 Remote Sensing
• Geotechniques Electives (9 credits)
  3350.507 Advanced Geographic Information Systems
  3350.541 Global Positioning Systems (GPS)
  3350.542 Cartographic Theory and Design
  3350.544 Applications in Cartography and GIS
  3350.545 GIS Database Design
  3350.546 GIS Programming and Customization
  3350.549 Advanced Remote Sensing
• Geography and Planning Electives (9 credits)
  Graduate courses from the Department of Geography and Planning
  Any course taken outside the department must be approved in advance by the student's graduate advisor or department chair
  No more than three credits of 3350.698 Independent Reading and Research
• Thesis
  At least 9 credits and no more than 15 credits of 3350.699.

Nonthesis Option
• Core Requirements (18 credits)
  3350.581 Research Methods in Geography and Planning
  3350.583 Spatial Analysis
  3350.596 Field Research Methods
  3350.687 History of Geographic Thought
  3350.600, 601 Seminar (6 credits)
• Geotechniques Requirements (9 credits)
  3350.505 Geographic Information Systems
  3350.540 Cartography
  3350.547 Remote Sensing
• Geotechniques Electives (9 credits)
  3350.507 Advanced Geographic Information Systems
  3350.541 Global Positioning Systems (GPS)
  3350.542 Cartographic Theory and Design
  3350.544 Applications in Cartography and GIS
  3350.545 GIS Database Design
  3350.546 GIS Programming and Customization
  3350.549 Advanced Remote Sensing
• Geography and Planning Electives (9 credits)
  Graduate courses from the Department of Geography and Planning
  Any course taken outside the department must be approved in advance by the student's graduate advisor or department chair
  No more than three credits of 3350.698 Independent Reading and Research

Master of Arts (Geography/Urban Planning) (335011MA: Thesis Option) (335003MA: Nonthesis Option)

Admission Requirements
In addition to the graduate application and official transcripts applicants must submit two letters of recommendation and a statement of purpose. Applications are accepted on a rolling basis.

Thesis Option
• Core Requirements (30 credits)
  3350.505 Geographic Information Systems
  3350.532 Land Use Planning Law

Nonthesis Option
• Core Requirements (21 credits)
  3350.505 Geographic Information Systems
  3350.581 Research Methods in Geography and Planning
  3350.583 Spatial Analysis
  3350.596 Field Research Methods
  3350.687 History of Geographic Thought
  3350.600, 601 Seminar (6 credits)
• Geography and Planning Electives (24 credits)
  Graduate courses from the Department of Geography and Planning
  Any course taken outside the department must be approved in advance by the student's graduate advisor or department chair
  No more than three credits of 3350.698 Independent Reading and Research

Graduate Studies
The academic background of each incoming graduate student will be reviewed during at least one semester of calculus, physics and chemistry. All courses should include courses in introductory chemistry, physics, biology, calculus or equivalents; including at least one semester of calculus, physics and chemistry. All courses should be taught for science/mathematics/engineering majors.

The academic background of each incoming graduate student will be reviewed during the student’s first semester by the graduate advisor, thesis advisor, and department chair to determine whether background deficiencies exist for higher planned program of study.

**Earth Science (337001MS)**

Equivalents of the current geology courses for the University’s B.A. in geology are required. Course program will be selected to provide the student with a well-rounded background in lithosphere, hydrosphere and atmosphere. Those who will be teachers must take 5500:780 Seminar in Curricular and Instructional Studies: Earth Science, or equivalent.

**Geophysics (337002MS)**

Equivalents of the geology, cognate science and mathematics requirements for the University’s B.S. in geophysics are required.

**Engineering Geology (337003MS)**

This program is for the graduate engineer and geologist who wishes to broaden expertise in the other field. The entering student who has some deficiencies in either engineering or geology may have to satisfy one or more of the following requirements while proceeding with graduate studies. A committee of engineering geology faculty will determine appropriate coursework on an individual basis.

- **Nonthesis Option**
  - Core Requirements (30 credits)
    - 3350:505 Geographic Information Systems
    - 3350:532 Land Use Planning Law
    - 3350:537 Planning Analysis and Projection Methods
    - 3350:538 Land Use Planning Methods
    - 3350:539 History of Urban Design and Planning
    - 3350:581 Research Methods in Geography and Planning
    - 3350:582 Spacial Analysis
    - 3350:630 Planning Theory
    - 3350:631 Facilities Planning
    - 3350:660, 661 Seminar (3 credits)
  - Geography and Planning Electives (15 credits)
    - Graduate courses from the Department of Geography and Planning
  - Thesis
  - At least 9 credits and no more than 15 credits of 3350:699.

- **Thesis**
  - Core Requirements (30 credits)
    - 3350:505 Geographic Information Systems
    - 3350:532 Land Use Planning Law
    - 3350:537 Planning Analysis and Projection Methods
    - 3350:538 Land Use Planning Methods
    - 3350:539 History of Urban Design and Planning
    - 3350:581 Research Methods in Geography and Planning
    - 3350:582 Spacial Analysis
    - 3350:630 Planning Theory
    - 3350:631 Facilities Planning
    - 3350:660, 661 Seminar (3 credits)
  - Geography and Planning Electives (15 credits)
    - Graduate courses from the Department of Geography and Planning
  - Thesis
  - At least 9 credits and no more than 15 credits of 3350:699.

**History**

**Master of Arts (340000MA)**

**Admission Requirements**

Students applying for admission to the M.A. program must have a minimum undergraduate grade-point average of 3.0. The applicant’s average in history courses should be substantially higher. Applicants must also have completed at least 24 semester or 36 quarter hours in history courses at the undergraduate level. An application to the M.A. program consists of the following:

- an application form;
- a letter of intent, stating the applicant’s reasons for wishing to pursue graduate work and the fields of history which the applicant intends to study;
- scores on the Graduate Record Examination, General Aptitude Test;
- a writing sample, preferably a research paper from a history class;
- three letters of recommendation, preferably from faculty who know the applicant well.

Applicants whose native language is not English must also score at least 580 on the Test of English as a Spoken Language (TOEFL), at least 240 on the Test of English as a Spoken Language (TSE), and take the Test of Written English (TWE).

Application materials must be received by February 1 if seeking departmentally-based funding. Applicants not seeking departmentally-based funding must have application materials submitted by June 1.

**Degree Requirements**

- Satisfactory completion of a minimum of 30 credits of graduate study in history, of which only six may be in individual reading.
- Concentrated study of three fields, two of which must be chosen from the following:
  - Ancient
  - Medieval
  - Europe, Renaissance to 1750
  - History of Science
  - Public History
  - World History

The third field must be chosen from the above history fields or from an approved cognate discipline.
Notes:

Graduate coursework will include:

- have a minimum of 16 credits in 300- and 400-level classes.
- Methods or for the field distribution requirement specified above.
- required for the History major. Cognate credit, however, shall not be substituted for either Historical

Bachelor of Arts in History

at assistantship only in these last two years and must be registered for at least nine

ter's degree in the last two years. A student will be eligible for a graduate

A student will formally apply to the program through the Graduate

School. Upon acceptance, a student will be cleared to complete the remaining elec-
tives of the bachelor’s degree and 30 credits of graduate coursework for the mas-

Core Requirements:

– a minimum of 32 credits of history courses, which include:

Field I United States and Canada
Field II Europe
Field III Ancient, Asia, Latin America, Africa

Electives:

– at least six credits from each of the following fields:

Notes:

*Courses in World Civilizations as well as Humanities in the Western Tradition (3400:211) and
Humans in the World since 1300 (3400:211) may not be used to meet major requirements in
History.

**With the approval of the Department of History undergraduate adviser a History major may apply up

to six credits of coursework in related disciplines (cognate courses) toward the 32 credits

required for the History major. Cognate credit, however, shall not be substituted for either Historical

Methods or for the field distribution requirement specified above.

***Transfer students must take a minimum of 14 credits of history coursework at UA and must

have a minimum of 16 credits in 300- and 400-level classes.

Graduate coursework will include:

– In the fourth year:

3400:689 Historiography (fall semester) plus any two courses which offer credit at
both the 400- and 500-level but will receive credit for them at both the under-
graduate and graduate levels.

– In the fifth year:

Option I: Three reading seminars, one followed by a writing seminar, with
the writing seminar paper read and approved by two faculty members.

Option II: Two reading-writing seminar sequences under different professors
with the writing seminar paper of the student’s choice read and approved by
two faculty members.

Option III: Two reading seminars, one writing seminar, and a thesis which must be
read and approved by two faculty members.

(Students intending to go on to the doctoral program should select Option II or
Option III, preferably Option III)

To complete the program a student must:

– Finish all undergraduate General Education requirements;

– Complete the second year (or its equivalent) of a foreign language;

– Earn 32 undergraduate credits in history;

– Earn 30 graduate credits in history (not including 3400:690 Teaching Practicum);

– Pass written comprehensive examinations in at least two fields from the fol-

lowing list:

<table>
<thead>
<tr>
<th>Field</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ancient America</td>
<td>18</td>
</tr>
<tr>
<td>Medieval</td>
<td>18</td>
</tr>
<tr>
<td>Europe, Renaissance to 1815</td>
<td>18</td>
</tr>
<tr>
<td>History of Science</td>
<td>18</td>
</tr>
<tr>
<td>Public History</td>
<td>18</td>
</tr>
<tr>
<td>South Asia</td>
<td>6</td>
</tr>
<tr>
<td>Africa</td>
<td></td>
</tr>
<tr>
<td>Middle East</td>
<td>6</td>
</tr>
<tr>
<td>World History</td>
<td></td>
</tr>
</tbody>
</table>

– Earn at least seven credits in a third field from the list above or in a cognate
field approved by the director of graduate studies.

Physics

Admission Requirements

In addition to the graduate application and official transcripts applicants must submit
three letters of recommendation and a statement of purpose, including a resume. Application materials should be submitted by March 15 for fall enrollment. Applications are accepted on a rolling basis for spring enrollment.

Master of Science

(365000MS)

– Complete a minimum of 30 graduate credits of approved courses in physics. Up
to six credits of graduate-level electives outside the department may be included in the program. There is no foreign language requirement for this degree.

– A cumulative grade-point average of 3.00 or better for all graduate-level courses applicable to the degree.

– Complete an approved program of courses which includes the following required courses:

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>3650.551</td>
<td>Advanced Laboratory I</td>
<td>3</td>
</tr>
<tr>
<td>3650.615</td>
<td>Electromagnetic Theory I</td>
<td>3</td>
</tr>
<tr>
<td>3650.625</td>
<td>Quantum Mechanics I</td>
<td>3</td>
</tr>
<tr>
<td>3650.641</td>
<td>Lagrangian Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>3650.661</td>
<td>Statistical Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>3650.685</td>
<td>Solid-State Physics I</td>
<td>3</td>
</tr>
<tr>
<td>3650.581.2</td>
<td>Methods of Mathematical Physics I, II</td>
<td>6</td>
</tr>
<tr>
<td>3650.616</td>
<td>Electromagnetic Theory II</td>
<td>3</td>
</tr>
<tr>
<td>3650.626</td>
<td>Quantum Mechanics II</td>
<td>3</td>
</tr>
<tr>
<td>3650.552</td>
<td>Advanced Laboratory II</td>
<td>3</td>
</tr>
</tbody>
</table>

A student preparing for further graduate work in a physical science or for acade-
ic or industrial employment should include the following courses in the graduate program:

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>3650.551</td>
<td>Advanced Laboratory I</td>
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<td>Statistical Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>3650.685</td>
<td>Solid-State Physics I</td>
<td>3</td>
</tr>
</tbody>
</table>

A student must complete at least one of the following two options:

Option A: A formal report, based on an original research project, submitted in a form suitable for publication and approved by a physics faculty committee.

Option B: A master’s thesis.

– Graduate research participation is strongly encouraged. Up to five credits may be earned in 3650.697 Graduate Research, upon the completion of a graduate research project. One additional credit may, upon approval by the department, be permitted in 3650.697 Master’s Thesis for the completion of a master’s the-
sis based on such research. A successful thesis may thus account for up to six of the total of 30 graduate credits required.

Interdisciplinary Option: Chemical Physics

The faculties in the Departments of Physics and Chemistry offer a cooperative option leading to the Ph.D. in chemistry for those graduate students wishing to specialize in the interdisciplinary field of chemical physics.

Admission Requirements

Applicants may be admitted with either a baccalaureate or a master’s degree in either chemistry or physics. Students pursuing this option are subject to all admis-
sion and degree requirements for the Ph.D. in chemistry, as outlined in page 29 of this Graduate Bulletin. The Chemical Physics option is described in detail on page 30.

Students entering the Chemistry Ph.D. program under the auspices of the Physics Department will be expected to have taken some advanced undergraduate chem-
istory course work (200-level and above), and must be recommended by the chair of the Physics Department. These students must select as research advisor a faculty member in the Physics Department holding a joint appointment in Chemistry. Students with principle preparation in physics may be required to audit certain undergraduate prerequisites for graduate chemistry courses.

**Political Science**

**Master of Arts (370000MA)**

**Admission Requirements**

Admission is open to students who have completed a four-year undergraduate degree with a minimum cumulative grade point average of 3.0 and who fulfill the admission requirements of the Graduate School. Three letters of recommendation (at least two from a faculty member who has worked with the student in the past two years, if applicable) and a personal statement outlining the expected fit between the student’s skills and objectives and the department’s programs and resources are required. The Graduate Record Examination (GRE) or equivalent entrance examination is required. Applications are accepted on a rolling basis.

The Master of Arts in Political Science allows students to focus their study in one of three concentrations: American Institutions, Criminal Justice, or International Studies.

Students may also work toward certificates in Applied Politics in conjunction with their graduate studies in Political Science.

**Degree Requirements**

- Complete 30 credits of graduate work, including 24 credits at the 600 level, as follows:
  - Four required core courses:
    - 3700:600 Scope and Theory of Political Science 3
    - 3700:601 Research Methods in Political Science 3
    - 3700:602 Foundations of Political Science 3
    - 3700:603 Scholarly Writing and Professional Development in Political Science 3
  - Four additional departmental seminars, 12 credits (neither independent research, MA seminar, nor internship is considered a graduate seminar).
  - Six additional credits at the graduate level.
  - Pass a comprehensive written examination covering one concentration: American Institutions, Criminal Justice, or International Studies.
  - Complete the following writing requirement:
    - An Essay of Distinction is a single, article-length, scholarly research paper. This writing requirement will encourage our students to learn how to participate in the debates central to our discipline and complete the program with a superb writing sample that can serve as a foundation for continued graduate work, a conference presentation, a published article, or a deliverable policy analysis.

To complete an Essay of Distinction, students are also required to orally defend their paper to their Faculty Advisory Committee (FAC). All FAC members must approve the topic and pass the paper and oral defense.

**Master of Applied Politics (370005MAP)**

The Master of Applied Politics, in cooperation with the Ray C. Bliss Institute of Applied Politics, is one of the few programs in the United States focusing on practical politics. It is designed for students interested in efforts to influence political decisions. This includes activities to capture elective public office in partisan and nonpartisan contexts, influencing legislation, and political organization.

**Admission Requirements**

Admission is open to students who have completed a four-year undergraduate degree and who fulfill the admission requirements of the Graduate School. Three letters of recommendation (at least one from a faculty member who has worked with the student in the past two years, if applicable) and a personal statement outlining the expected fit between the student’s skills and objectives and the department’s programs and resources are required. No specific field of undergraduate major is required for admission. The Graduate Record Examination (GRE) or equivalent entrance examination is required. The program is designed to accommodate students taking course work on a part-time basis. Applications are accepted on a rolling basis.

**Degree Requirements**

- Complete 39 credits of graduate work, including the following:
  - Core courses - 18 credits:
    - 3700:570 Campaign Management I 3
    - 3700:571 Campaign Management II 3
    - 3700:600 Scope and Theory of Political Science 3
    - 3700:601 Research Methods in Political Science 3
    - 3700:672 Seminar: Political Influence and Organizations 3
    - 3700:695 Internship in Government and Politics 3
  - Six credits from the following:
    - 3700:540 Survey Research Methods 3
    - 3700:572 Campaign Finance 3
    - 3700:574 Political Opinion, Behavior, and Electoral Politics 3
    - 3700:577 Lobbying 3
    - 3700:655 Campaign and Election Law 3
    - 7600:575 Political Communication 3
- Fifteen credits of additional course work from above or from approved courses in Political Science, Communication, Public Administration, or other departments.
- Prepare an applied politics portfolio containing:
  - At least two major papers prepared for required courses.
- An applied politics capstone project assigned by the student’s advisor.
- Pass an oral defense of the applied politics portfolio.

**J.D./Master of Applied Politics**

**Admission Requirements**

This joint J.D./Master of Applied Politics degree combines the two degrees while allowing students to complete requirements with fewer credits than taking the degrees separately. To be accepted into the program, a student must meet the admission requirements of the School of Law, the Graduate School, and the Department of Political Science.

**Degree Requirements**

Students must complete the following:

- J.D. required courses - 44 credits
- MAP required courses - 24 credits (18 credits core courses; 6 credits required electives)
- Joint Law School/Political Science Course - 3 credits
- 3700:655/9200:655 Campaign and Election Law 3
- J.D. Elective Courses - 32 credits
- At least three credits from the following courses:
  - 9200:623 Administrative Law 3
  - 9200:642 Alternative Dispute Resolution 3
  - 9200:644 First Amendment Law 3
  - 9200:645 Non-Profit Tax Entities 3
  - 9200:659 Negotiation 3
  - 9200:662 Media Law 3
  - 9200:664 Local Government Law 3
  - 9200:684 Selected Legal Problems 3 or 4
  - 9200:698 Individual Studies and Research 2-3
- MAP Electives - 6 credits
- Choose two from the following courses:
  - 3700:502 Politics and the Media 3
  - 3700:540 Survey Research Methods 3
  - 3700:572 Campaign Finance 3
  - 3700:574 Political Opinion, Behavior, and Electoral Politics 3
  - 3700:577 Lobbying 3
  - 3700:620 Seminar in Comparative Politics 3
  - 3700:630 Seminar in National Politics 3
  - 3700:688 Seminar in Public Policy Agendas and Decisions 3
  - 3700:690 Special Topics in Political Science (Applied Politics focus) 3
  - 3700:695 Internship in Government and Politics 3
- Pass an oral defense of the applied politics portfolio.

**Psychology**

**Master of Arts (370501MA: Counseling-Thesis Option)**

**Master of Arts (370501MA: Industrial/Organizational-Thesis Option)**

**Master of Arts (370502MA: Psychology-Nonthesis Option)**

**Master of Arts (370503MA: Industrial/Organizational-Nonthesis Option)**

**Admission Requirements**

Fulfill admission requirements of the Graduate School and the following departmental requirements:
- psychology major or minimally the equivalent of psychology undergraduate minor including a general or introductory course, statistics course, and experimental psychology course;
of six credit hours of thesis course work can be applied to a specialization.

• Course requirements:
  – completion of graduate psychology courses, including the M.A. core courses or equivalents, specialty area required courses, and electives as specified in the department’s graduate student manual;
  – a student is required to maintain at least a 3.0 grade-point average in M.A. content courses as well as overall.

• Other requirements:
  – refer to the Department of Psychology Graduate Student Manual for additional guidelines;
  – complete and fulfill general master’s degree requirements of the Graduate School.

Thesis Option
Completion of a minimum number of credits of graduate work, including thesis, as follows: Industrial/Organizational program, 39 credits.

Nonthesis Option
Completion of coursework, practicum and examinations (no thesis required), with a minimum number of credits of graduate work for each program as follows: Applied Development and Aging program, 37 credits; Counseling program, 44 credits; and Industrial/Organizational program, 41 credits.

Public Administration and Urban Studies

Master of Arts in Urban Studies (398000MA)
The master’s degree focus is on applied policy. Students receive a contextual grounding of analysis methods and organization implementation methodology for areas of specialization.

Admission Requirements
Admission is open to students who have completed an undergraduate (bachelor’s) degree. No specific field of undergraduate major is required for admission. The GPA requirements for consideration for full admission is an overall bachelor GPA of 2.8 or greater, or 3.05 for the last 60 credit hours. Provisional admission may be granted for those with an overall GPA between 2.5 and 2.79. Additionally, applicants must submit the following:

– For students who have an overall GPA below 3.0 a standardized test score from the GRE, GMAT, or LSAT.
– A copy of their current resume (especially important for in-service students to ascertain their professional experience).
– A personal essay explaining why they study and completion of a MA degree will help them with their personal or professional goals.

Admission decisions are made by the department committees as explained in the PAUS Master’s Handbook.

Applications are accepted on a rolling basis. For those students seeking a graduate assistantship application materials must be received by July 1 for fall enrollment, November 15 for spring enrollment, and April 1 for summer enrollment.

Degree Requirements
Satisfactory completion of a minimum of 48 credit hours of graduate study, including 30 credit hours of core classes, 15 credit hours of specialization courses, and three credit hours of internship (3980:695). Students with sufficient professional work experience may petition for a waiver of the internship course, and those students that are granted an internship waiver have a minimum of 45 credit hours for the degree. Procedures for an internship waiver are included in the PAUS Master’s Handbook.

• Core requirements (33 credit hours):
  3980:600 Basic Quantitative Research 3
  3980:601 Advanced Research and Statistical Methods 3
  3980:610 Legal Foundations of Public Administration 3
  3980:611 Introduction to the Profession of Public Administration 3
  3980:614 Ethics and Public Service (capstone class) 3
  3980:615 Public Organization Theory 3
  3980:616 Personnel Management in the Public Sector 3
  3980:640 Fiscal Analysis 3
  3980:642 Public Budgeting 3
  3980:643 Introduction to Public Policy 3
  3980:695 Internship 3

Specializations: Specializations represent career and/or academic fields of interest. Specializations for the MA are listed in the PAUS Master’s Handbook. Some specializations represent the inclusion of certificate programs on campus; some students may work with their advisors to craft a specialization that fits their needs and interests. Students should contact the department office to get a copy of the student handbook.

Thesis: Students are encouraged to consider the option of a thesis. A maximum of six credit hours of thesis course work can be applied to a specialization.

Other. Credit/Non-Credit courses do not count toward the minimum number of credit hours required for graduation.

Master of Public Administration (MPA) (398005MPA)
The Master of Public Administration (MPA) program has been accredited by the National Association of Schools of Public Affairs and Administration (NASPAA) through the 2010-2011 academic year. The MPA program is designed to prepare students for their public service careers in public management and administration, as well as the management of non-profit organizations.

Admission Requirements
Admission is open to students who have completed an undergraduate (bachelor’s) degree. No specific field or undergraduate major is required for admission. The GPA requirements for consideration for full admission is an overall bachelor GPA of 2.8 or greater or 3.05 for the last 60 credit hours. Provisional admission may be granted for those with an overall GPA between 2.5 and 2.79. Additionally, applicants must submit the following:

– For students who have an overall GPA below 3.0 a standardized test score from the GRE, GMAT, or LSAT, or MAT.
– A copy of their current resume (especially important for in-service students to ascertain their professional experience).
– A personal essay explaining why the study and completion of a MPA degree will help them with their personal or professional goals.

Admission decisions are made by the department committee as explained in the department handbook.

Applications are accepted on a rolling basis. For those students seeking a graduate assistantship application materials must be received by July 1 for fall enrollment, November 15 for spring enrollment, and April 1 for summer enrollment.

Degree Requirements
Satisfactory completion of a minimum of 48 credit hours of graduate study, including 30 credit hours of core classes, 15 credit hours of specialization courses, and three credit hours of internship (3980:695). Students with sufficient professional work experience may petition for a waiver of the internship course, and those students that are granted an internship waiver have a minimum of 45 credit hours for the degree. Procedures for an internship waiver are included in the PAUS Master’s Handbook.

• Core requirements (33 credit hours):
  3980:600 Basic Quantitative Research 3
  3980:601 Advanced Research and Statistical Methods 3
  3980:610 Legal Foundations of Public Administration 3
  3980:611 Introduction to the Profession of Public Administration 3
  3980:614 Ethics and Public Service (capstone class) 3
  3980:615 Public Organization Theory 3
  3980:616 Personnel Management in the Public Sector 3
  3980:640 Fiscal Analysis 3
  3980:642 Public Budgeting 3
  3980:643 Introduction to Public Policy 3
  3980:695 Internship 3

Specializations: Specializations represent career and/or academic fields of interest. Specializations for the MPA are listed in the Master’s handbook. Some specializations represent the inclusion of certificate programs on campus; some students may work with their advisors to craft a specialization that fits their needs and interests. Students should contact the department office to get a copy of the handbook.

Thesis: Students are encouraged to consider the option of a thesis. A maximum of six credit hours of thesis course work can be applied to a specialization.

Other. Credit/Non-Credit courses do not count toward the minimum number of credit hours required for graduation.

J.D./Master of Public Administration

The University offers a joint J.D. and Public Administration program. The title is J.D./M.P.A. To be accepted into the program, a student must meet the admission requirement of the School of Law, the Graduate School, and the Department of Public Administration and Urban Studies.

Degree Requirements
Seventy-six credits in law and 30 credits in public administration.

Under this program a student must take 43 credits of required law courses, 32 credits of law electives, and 30 credits of required public administration courses plus an internship of three credits. (Internship is required of any student without professional administrative experience.)

This program reduces the total existing credit hours of the School of Law and Public Administration by nine credit hours (from 85 to 76), while public administration requirements are reduced by 12 credit hours (from 42 to 30).
Public Health
(311500MPH)

The Consortium of Eastern Ohio Master of Public Health (CEOMPH) program is a partnership between The University of Akron, Cleveland State University, NorthEastern Ohio Universities College of Medicine and Pharmacy, Ohio University, and Youngstown State University. This nontraditional program is geared toward the working professional who would like to broaden his or her role in improving community health, enhance current job skills, or seek career advancement. Students are encouraged to move through the program as a cohort with core courses being taught on Saturday by interactive videoconferencing from one of our distance learning sites. Unique features of this program include the use of distance learning for the six core courses, including interactive videoconferencing and web-enhanced teaching. Elective courses may be taken at any of the partner universities. Core courses are taught on Saturday to accommodate working students. Student can choose electives toward their areas of interest. This MPH degree is a generalist degree. CEOMPH is accredited by the Council on Education and Public Health.

Mission Statement
The mission of the Consortium of Eastern Ohio Master of Public Health program is to provide accredited public health education designed for the working professional. It does this through a collaborative learning community, drawing on the collective resources of its five member institutions and partnering community agencies. The program strives to produce respected and competent professionals able to improve public health practice, especially in eastern Ohio.

Values
- Improving, preserving, and enhancing the health and well-being of the entire community.
- Engaging in collaborative behavior that models as well as educates.
- Achieving student excellence, including leadership, accountability, and ethical behavior.
- Protecting the environment, recognizing and reducing environmental health risks, and using resources prudently in our personal and professional lives.
- Promoting diversity in the public health workforce.
- Demonstrating cultural competence.
- Commitment to lifelong learning.

Goals
- Provide graduates with a foundation of public health skills and knowledge, including community assessment methods, analytic skills, research strategies, program implementation, evaluation, and policy development within an ethical and culturally sensitive perspective.
- Provide an MPH program that produces competent practitioners through collaboration among academicians, researchers, public health practitioners, and students from each member institution and the eastern Ohio community.
- Provide students with the knowledge and opportunities to apply public health concepts and skills to assess and improve the health status of residents of Ohio through research and service.
- Foster ongoing professional development of faculty and students and public health practitioners for the advancement of practice in the community.
- Assure at least an annual evaluation of overall program activity so that it continues to meet the needs of both students and the eastern Ohio community and is based on the most current concepts and skills in public health research and practice.

Admission
All application materials must be sent to Consortium of Eastern Ohio Master of Public Health office, 4209 State Route 44, PO. Box 95, Rootstown, Ohio 44272-0095.

Students must meet the following admission requirements:
- Submit completed application by January 15 of the year student is seeking to enter in the fall
- Possess a bachelor’s degree from an accredited college or university
- Provide official academic records from each institution of higher education attended. If the official record is not in English, an official translation must accompany the original language document.
- Minimum undergraduate GPA of 2.75 and minimum graduate GPA of 3.0 out of a 4.0 scale
- Three letters of recommendation from individuals familiar with applicant’s academic or professional background. Individuals who have not been involved in an academic institution for two years or more may submit letter of evaluation by supervisors from his/her place of employment. The letters should include an assessment of current work quality and ability to successfully complete graduate training. Letters should be addressed to the CEOMPH Admissions Committee at the above address.

- A cover letter (no more than two pages) explaining applicant’s educational and professional history; area of interest in public health, interest and motivation for seeking a MPH degree; and professional or academic plans upon completion of the program.
- Successful completion of a college level mathematics or statistics course and college level social or natural science course.
- GRE scores taken within the last five years (student may be exempt if he/she has a professional or academic master’s or doctoral degree).
- TOEFL scores taken within the last two years from graduates of foreign universities who are non-native English speakers. The minimum score must be 550 (paper-based) or 213 (computer-based) or 79-80 with read/speak/listen=17, write=14 (internet-based)
- Two years of work experience in a relevant field is highly recommended, but not required.
- $45 non-refundable application fee. Students with international credentials must pay a total of $90.
- International students must also complete an INTERNATIONAL STUDENT DOCUMENTATION PACKET and Declaration and Certification of Finances (DCF).

Curriculum
The MPH program contains five core areas basic to public health: social and behavioral sciences, epidemiology, biostatistics, health services administration, and environmental health sciences.

- Core courses:
  - 3115:601 Public Health Concepts
  - 3115:602 Social and Behavioral Sciences in Public Health
  - 3115:603 Epidemiology in Public Health
  - 3115:604 Biostatistics in Public Health
  - 3115:605 Health Services Administration in Public Health
  - 3115:606 Environmental Health Sciences in Public Health

- Elective courses (12 credits):
  - 3115:696 Practicum
  - 3115:695 Independent Study
  - 3115:680-689 Special Topics

- Total 42

A portfolio and exit presentation are also required of each student for graduation.

Sociology

Master of Arts
(385010MA: Thesis Option)
(385011MA: Nonthesis Option)

The University of Akron and Kent State University offer a joint graduate program in Sociology. Core coursework is offered at both campuses, faculty from both campuses serve on students’ committees and research projects.

It should be noted that the program seeks to admit students who expect to complete a Ph.D. at The University of Akron, and the curriculum is structured to serve full-time students. Thus, students generally complete the requirements for the master’s degree in the process of pursuing the doctorate. It is recommended that students who are not interested in receiving a Ph.D. or who are interested in a part-time program of study consider applying to sociology programs that focus on awarding master’s degrees and which are better able to serve the needs of part-time students.

Admission Requirements
The curriculum is designed for full-time admission only, and completed application materials must be received by January 15 for those applicants seeking financial support from the department. Applicants not seeking funding must have application materials submitted by March 1.

Specific criteria considered for admission include:
- Fulfill admission requirements of the Graduate School and department
• Undergraduate cumulative grade point average of 3.0
• GRE General Test
• Personal statement indicating reasons for pursuing a graduate degree in Sociology at The University of Akron
• Three letters of recommendation from persons familiar with the applicant’s academic work
• Applicants whose native language is not English must score at least 577 (paper-based) of 233 (computer-based) on the TOEFL.

Note: The admissions committee is unable to consider incomplete applications. Interested applicants are encouraged to visit the department website for further information about the program and the application process.

**Thesis Option**

In addition to meeting the general requirements of the Graduate School, a student working toward the M.A. in Sociology must fulfill the following requirements:

- Complete 36 credit hours of coursework (14 credits of required coursework, 15 credits of electives, and six credits of thesis) with at least a 3.0 grade point average. Only three credit hours taken at the 500-level, and only three credit hours of 897 or 898 can be counted toward the degree.
- Complete the following required courses:
  - 3850:604 Quantitative Methods in Sociology 4
  - 3850:626 Professional and Ethical Issues in Sociology 3
  - 3850:706 Multivariate Techniques in Sociology 4
  - 3850:722 Early Sociological Thought 3
- Complete six credit hours of thesis (3850:699). No more than six credits will count toward the degree.
- Completion of master’s thesis and successful oral defense of thesis.

**Nonthesis Option**

In rare circumstances it may be determined by the graduate faculty that the M.A. degree may be completed through the non-thesis option. This terminal degree will be completed through a process focused on intensive substantive training in a specialized area.

In addition to meeting the general requirements of the Graduate School, a student working toward a non-thesis M.A. in Sociology must fulfill the following requirements:

- Complete the following required courses with at least a 3.00 grade-point average:
  - 3850:604 Quantitative Methods in Sociology 4
  - 3850:626 Professional and Ethical Issues in Sociology 3
  - 3850:706 Multivariate Techniques in Sociology 4
  - 3850:722 Early Sociological Thought 3
- Completion of at least 2 additional credits of elective coursework. Only six credit hours taken at the 500-level and only three credit hours of 897 or 898 can be counted toward the degree. Twelve to 15 of these credits must be in a contracted specialty area defined in consultation with the student’s advisor and approved by the Graduate Studies Committee.
- Pass an oral examination on the specialty area.

**Spanish**

**Admission Requirements**

In addition to the graduate application three letters of recommendation and a statement of purpose must be submitted. Applicants must have a minimum score of Advanced Low on the Oral Proficiency Interview (score must be no more than two years old). Applications are accepted on a rolling basis.

**Master of Arts (358000MA)**

- Thirty-two semester credits of graduate coursework in Spanish.
- Proficiency level in listening comprehension, speaking, reading, and writing Spanish, and cultural and literary proficiency.
- Final research paper: the candidate will be required to submit a long essay in Spanish reflecting the results of a research project, and to make an oral defense of the essay.

**Statistics**

**Master of Science – Statistics (347000MS: Non-thesis Option)**

**Admission Requirements**

Entrance into the program will require the initial completion of the following prerequisites:

- Three semesters of calculus or equivalent

One semester of Linear Algebra or equivalent.
One semester of Applied Statistics or equivalent.

Applicants must also submit three letters of recommendation.

**Core curriculum:**

- 3470:580 Statistical Data Management 3
- 3470:651 Probability and Statistics 4
- 3470:652 Advanced Mathematical Statistics 3
- 3470:663 Experimental Design 3
- 3470:665 Regression 3
- Total 16

**Statistical Computer Science option (addition to existing master’s program)**

- Other required courses:
  - 3460:501 Fundamentals of Data Structures 3
  - 3460:506 Introduction to C and UNIX 3
  - 3460:575 Database Management 3
  - 3460:676 Data Mining 3
- Total 12

**Thesis requirements (30 credits of graduate work)**

In addition to the core curriculum, students must take three credits in 3470:689 Advanced Topics in Statistics, 2-4 credits in 3470:699 Master’s Thesis, and 7-9 credits of other approved graduate electives. Upon approval of the thesis by the student’s advisor and reader the thesis must be presented in a colloquium to faculty and students.

**Nonthesis requirements (33 credits of graduate work)**

In addition to the core curriculum, students must take three credits in 3470:689 Advanced Topics in Statistics, 2-4 credits in 3470:692 Statistics Masters Paper, and 10-12 other approved elective graduate credit hours must be completed. Upon approval of the Statistics Master’s Paper by the student’s advisor and reader, the paper must be presented in a colloquium to faculty and students. The Statistical Computer Science option requirements may be applied toward the elective courses.

**Theoretical and Applied Mathematics**

**Master of Science – Mathematics (345000MS: Non-thesis Option)**

**Admission Requirements**

In addition to the graduate application and official transcripts applicants must submit three letters of recommendation and a statement of purpose. Applications are accepted on a rolling basis.

**Goals:** The program is designed to give students a solid foundation in graduate-level mathematics, provide hands-on experience in problem-solving and the uses of technology, and to allow returning mathematics teachers to upgrade their qualifications.

**Admission:** Upon admission to the program, each student will undergo a review. If deficiencies in any mathematical area will add to the number of credits required for graduation. Core requirements already satisfied will be replaced by approved electives.

**Program Requirements:** A minimum of 30 graduate credits, after completion of any deficiency courses, are required.

- Core requirements (18-19 credits):
  - 3450:510 Advanced Linear Algebra 3
  - 3450:513 Theory of Numbers 3
  - 3450:512 Abstract Algebra II 3
  - 3450:522 Advanced Calculus II 3
  - 3450:621 Real Analysis 3
  - 3450:625 Analytic Function Theory 3
  - 3450:636 Advanced Combinatorics and Graph Theory 3
  - A statistics course selected from:
    - 3470:550 Probability 3
    - 3470:551 Theoretical Statistics I 3
    - 3470:561 Applied Statistics I 4
    - 3470:651 Probability and Statistics 4

**Thesis Option (minimum of 30 credits)**

In addition to the placement review and core requirements, at least six credits of electives approved by the graduate advisor, three credits in 3450:692 Seminar in Mathematics, and three credits in 3450:699 Master’s Thesis must be completed.
Nonthesis Option (minimum of 30 credits)

In addition to the placement review and core requirements, at least eleven (or twelve) credits of electives approved by the graduate advisor must be completed.

Master of Science – Applied Mathematics (345001MS: Non-thesis Option) (345001MST: Thesis Option)

Admission Requirements

In addition to the graduate application and official transcripts applicants must submit three letters of recommendation and a statement of purpose. Applications are accepted on a rolling basis.

Goals: This program is designed to train students in the formulation, analysis, and solution of mathematical models in a variety of application areas.

Administration: Upon admission to the program, each student will undergo a review process to determine competency in undergraduate core mathematical areas and background in at least one junior-level or higher course in engineering or physics. If necessary, the appropriate course(s) will be added to the required course list for the student.

Program Requirements: A minimum of 30 graduate credits, after the completion of deficiency courses, is required.

- Core Requirements (18 credits):
  - 3450:621 Real Analysis 3
  - 3450:627 Advanced Numerical Analysis I 3
  - 3450:633 Methods of Applied Mathematics I 3

- Group 1 - At least one course from this list must be taken:
  - 3450:625 Analytic Function Theory 3
  - 3450:628 Advanced Numerical Analysis II 3
  - 3450:632 Advanced Partial Differential Equations 3

- Group 2 - At least two courses from this list must be taken:
  - 3450:634 Methods of Applied Mathematics II 3
  - 3450:635 Optimization 3
  - 3450:730 Advanced Numerical Solution of Partial Differential Equations 3

Thesis Option

In addition to the placement review and core requirements, at least six credits of electives approved by the graduate advisor, three credits of 3450:692 Seminar in Mathematics, and three credits of 3450:699 Master’s Thesis must be completed.

Nonthesis Option

In addition to the placement review and core requirements, at least twelve credits of electives approved by the graduate advisor must be completed.

Coordinated Program (415001PHD)

Coordinated Engineering Applied Mathematics program for the Doctor of Philosophy in Engineering degree between the College of Engineering and the Department of Theoretical and Applied Mathematics

The faculty in the College of Engineering and the Department of Theoretical and Applied Mathematics have agreed to provide a coordinated program for those graduate students who elect the interdisciplinary field of Engineering Applied Mathematics.

Admission and Degree Requirements

Applicants for the Engineering Applied Mathematics Program must have their graduate application and credentials evaluated by one of the departments in the College of Engineering and the Department of Theoretical and Applied Mathematics. The Admission and Degree Requirements for the Doctor of Philosophy in Engineering, as given in the Graduate Bulletin (see page 42, College of Engineering), shall apply to all applicants for the Engineering Applied Mathematics Program.

BS/MS Program in Mathematics (345001MS) (345001MST: Thesis Option)

This is an accelerated five-year BS/MS program. After successfully completing this program, a student will receive a bachelor’s degree either in mathematics or applied mathematics as well as a master’s degree in applied mathematics. Under the supervision of a faculty advisor, a student in the program will finish the core course requirements and most of the electives for the bachelor’s degree in the first three years. During the third year of the baccalaureate degree a student will formally apply to the program through the Graduate School. Upon acceptance a student will be cleared to complete the remaining electives of the bachelor’s degree and 30 credits of graduate work for the master’s degree in the last two years. A student will be eligible for a graduate assistantship only in these last two years and must be registered for at least nine graduate credits in each of those semesters.

Graduate coursework will include the following courses:

- 3450:510 Advanced Linear Algebra 3
- 3450:513 Theory of Numbers 3
- 3450:512 Abstract Algebra II 3
- 3450:522 Advanced Calculus II 3
- 3450:621 Real Analysis 3
- 3450:625 Analytic Function Theory 3
- 3450:636 Advanced Combinatorics and Graph Theory 3
- 3450:692 Seminar in Mathematics 3
- 3470:550 Probability 3
- 3470:551 Theoretical Statistics 3
- 3470:561 Applied Statistics I 4
- 3470:651 Probability and Statistics 4
- 3450:699 Master’s Thesis (for thesis option) 3

A student must maintain a 3.0 or better grade point average to stay in the program. If a student is not able to do this, then he or she will have the option to complete the regular bachelor’s degree program instead of the five-year accelerated plan.

BS/MS Program in Applied Mathematics (345001MS)

This is an accelerated five-year BS/MS program. After successfully completing this program, a student will receive a bachelor’s degree in either mathematics or applied mathematics as well as a master’s degree in applied mathematics. Under the supervision of a faculty advisor, a student in the program will finish the core course requirements and most of the electives for the bachelor’s degree in the first three years. During the third year of the baccalaureate degree a student will formally apply to the program through the Graduate School. Upon acceptance a student will be cleared to complete the remaining electives of the bachelor’s degree and 30 credits of graduate work for the master’s degree in the last two years. A student will be eligible for a graduate assistantship only in these last two years and must be registered for at least nine graduate credits in each of those semesters.

Graduate coursework will include the following courses:

- 3450:621 Real Analysis 3
- 3450:627 Advanced Numerical Analysis I 3
- 3450:633 Methods of Applied Mathematics I 3
- 3450:692 Seminar in Mathematics 3
- 3450:699 Master’s Thesis (for thesis option) 3

At least one course from the following:

- 3450:625 Analytic Function Theory 3
- 3450:628 Advanced Numerical Analysis II 3
- 3450:632 Advanced Partial Differential Equations 3

At least two courses from the following:

- 3450:634 Methods of Applied Mathematics II 3
- 3450:635 Optimization 3
- 3450:730 Advanced Numerical Solution of Partial Differential Equations 3

Graduate Electives

A student must maintain a 3.0 or better grade point average to stay in the program. If a student is not able to do this, then he or she will have the option to complete the regular bachelor’s degree program instead of the five-year accelerated plan.
College of Engineering

George Haritos, Ph.D., Dean
Ajay Mahajan, Ph.D., Associate Dean for Research
Craig C. Menzemer, Ph.D., Associate Dean for Graduate Studies and Administration

Mission of the College

The College of Engineering at the University is committed to excellence in undergraduate and graduate education. The College of Engineering was founded in 1914 and is the second oldest college at the University. The College embraces the departments of Biomedical Engineering, Chemical Engineering, Civil Engineering, Electrical and Computer Engineering, and Mechanical Engineering. The current research focus of the College includes gas turbine technology, filtration technology, nanotechnology, lightweight automobile research, aero-propulsion technology, catalysis, industrial controls, computational mechanics, smart materials, composites and civil structures, and a variety of modeling and simulation issues of engineering problems. During the academic year 1969-70, the College adopted interdisciplinary procedures for the doctoral program offered by the College. The program is truly interdisciplinary in nature.

The mission of graduate education in the College of Engineering is to:

- Train engineers and scientists to solve state of the art technological issues.
- Train students to develop theory, methodology, and necessary experimental skills to investigate emerging issues in engineering and science that effect state and national interests.
- Provide excellence in presenting student findings via theses, doctoral dissertations, and research papers.
- Train students to be future educators where appropriate.
- Train students in industrial research where appropriate.
- Train students to work on interdisciplinary teams where appropriate.

As the state positions itself in the forefront of the technology, appropriately trained scientists and engineers are needed in all fields. Our graduate programs provide training that equips students with the maturity and ability to assume leadership roles in technological fields related to the field of engineering. In addition, our programs attract a variety of students from several industries and NASA Glenn Research Center in Northeast Ohio. The College is a partner of the Ohio Aerospace Institute (OAI).

DOCTOR OF PHILOSOPHY IN ENGINEERING DEGREE

The Doctor of Philosophy in Engineering is an interdisciplinary doctoral program offered on a collegiate basis; however, when making application a student must indicate a primary discipline (420000PHD Chemical Engineering; 430000PHD Civil Engineering; 440000PHD Electrical Engineering; 445000PHD Computer Engineering; 460000PHD Mechanical Engineering; or 480000PHD Biomedical Engineering).

Admission Requirements

Applicants for the Doctor of Philosophy in Engineering must hold a bachelor's degree from a program that is accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology at the time of graduation, or provide satisfactory evidence of an equivalent academic background to the Dean of the College of Engineering.

Applicants with a master of science degree must provide satisfactory evidence of an equivalent engineering baccalaureate background to the Dean of the College of Engineering.

Applicants must submit official undergraduate transcripts, undergraduate grade point average, three letters of recommendation, and official results of the verbal, quantitative, and analytical portions of the GRE. A statement of purpose should also be submitted. Personal statements or descriptions of post-baccalaureate experience that provide a rationale for the proposed graduate study may also be submitted.

The GRE minimum requirement for admission into a graduate program in the College of Engineering (both master's and doctoral) is 1150. The GRE score is derived by using the following formula: Quantitative Score + (100 x 4/G x Analytical Score). The GRE requirement may be waived for students holding degrees from ABET accredited programs if the department approves.

Applicants with a bachelor's degree must have a cumulative grade-point average of at least 3.0/4.0.

Applicants with a master's degree must have a cumulative graduate grade point average of at least 3.5/4.0.

Applicants whose native language is not English must have a TOEFL score of at least 550 (paper-based) or 213 on the computer-based TOEFL, and also must submit their score on the Test of Written English. Applicants to the Department of Biomedical Engineering must have a TOEFL score of 590 (paper-based) or 243 (computer-based).

Applicants not satisfying the requirements for Full Admission may be classified either as a Provisional Admission or as a Deferred Admission.

Applicants with a bachelor's degree in a discipline other than engineering shall have completed undergraduate coursework in calculus, differential equations, and have one year of classical physics. These students may be required to take additional bridge-up courses depending on their background. Necessary bridge-up coursework will be determined by the admitting department/program graduate committee.

Transfer Credits

A student who has a master's degree from another university or from one of the departments in the College of Engineering may, upon recommendation of the Interdisciplinary Doctoral Committee, transfer up to 24 credits of course work. The course comprising the transfer credits must be identified and itemized on the Plan of Study and must be substantiated by an official transcript from the educational institution that offered the courses.

A student who has completed a non-thesis master's degree, or has graduate credits but has not completed the degree requirements for the master's degree, can transfer a maximum of 24 credits of course work toward the doctoral course requirements.

No more than six credit hours of research or complete thesis credits can be transferred.

Degree Requirements

The University's Academic Requirements (See Academic Requirements in this Graduate Bulletin) for the Doctoral Degree and the following College of Engineering's academic requirements for the Doctoral Degree must be satisfied:

- An entering doctoral student will have the chair of the Interdisciplinary Doctoral Committee (IDC) in his/her home department/program.
- Student's plan of study should include 96 credit hours and be in accordance with the guidelines established by the student's admitting department/program.
- A Plan of Study will be established by the IDC satisfying guidelines established by the home department/program.
- Identify an interdisciplinary field of study, a dissertation director, and an Interdisciplinary Doctoral Committee before completion of 18 credits of coursework.
- Pass a departmental Qualifying Examination. The purpose of the qualifying examination is to determine admissibility to the doctoral program and any technical weakness.
- Satisfy the language requirement specified by the Interdisciplinary Doctoral Committee.
- Pass a Candidacy Examination. The purpose of the candidacy examination is to test the student's ability to conduct independent research.
- Present an acceptable Dissertation Proposal that describes the proposed research to the Interdisciplinary Doctoral Committee.
- Present and successfully (no "fail" votes) defend the dissertation to the Interdisciplinary Doctoral Committee.

A copy of the Ph.D. in Engineering Program Procedures may be obtained from the office of the Dean of the College of Engineering.

Doctoral Student's Responsibilities

Doctoral students are completely responsible for all aspects of their graduate education. Specifically, these responsibilities include:

- Understanding, adhering to, and implementing the procedures of the Graduate School, as described in the University of Akron Graduate Bulletin, and the Interdisciplinary Doctoral Procedures of the College of Engineering.
- Selecting an interdisciplinary program, Dissertation Director, and Interdisciplinary Doctoral Committee.
- Arranging, through the Dissertation Director, all Interdisciplinary Doctoral Committee meetings.
- Initiating, through the Dissertation Director, the forms that monitor their progress toward the doctoral degree.
- Proposing and executing an accepted Plan of Study.
- Proposing a Research Proposal and executing the proposed research.
- Preparing a scientifically acceptable and comprehensive dissertation whose format meets all the accepted standards of the Interdisciplinary Doctoral Committee, the College of Engineering, and the Graduate School.

Interdisciplinary Fields of Study

The proposal to establish a doctoral program in the College of Engineering, which was approved by the Board of Trustees of The University of Akron and the Ohio...
Board of Regents in 1967-68, defines the four undergraduate departments (as of 1999, a Biomedical Engineering undergraduate program was approved by the Ohio Board of Regents), Chemical, Civil, Electrical, and Mechanical, as the basic disciplines for the interdisciplinary programs in Environmental Engineering, Materials Engineering, Mechanics, Systems Engineering, and Transport Processes. The objectives of the proposal were to allow doctoral students access to the infrastructure resources of the entire college and permit the interdisciplinary programs to adapt to the changing research and funding environment. Since the approval of the proposal, the interdisciplinary areas have expanded from the original five programs to ten interdisciplinary programs. These interdisciplinary programs are broadly defined as follows:

- **Environmental Engineering** includes the study of water and air pollution, environmental health, chemical disposal, waste management, noise control, resource engineering, and appropriate fields of urban planning.
- **Mechanics** includes the theoretical and experimental study of the stresses, strains, and endurance of structures, machines and various materials, mechanisms of solids, fluids, solid and composite materials.
- **Systems Engineering** includes the scientific prediction, control, and evaluation of the performance of integrated operational systems, and interaction effects among the components of engineering systems. It includes system analysis and design, operations research, linear and dynamic programming.
- **Materials Engineering** studies the materials from the physical, chemical, and engineering standpoints. Its purpose is to develop a better understanding of the composition, properties, and performance of various materials, and to develop new materials, manufacturing methods, and applications.
- **Transport Processes** include the theoretical and experimental study of the transfer of mass, energy, and power, as related to engineering systems and processes.
- **Biomedical Engineering** studies the theoretical and experimental application of engineering principles to biomedical problems. Some typical areas of interest are signal and image processing, biomechanics, and biometrics.
- **Polymer Engineering** combines fundamental engineering principles with the structure and rheological properties of polymers to design and analyze polymer processes and equipment.
- **Engineering Applied Mathematics** applies advanced mathematics to technologically significant engineering problems.
- **Chemical Reactions and Process Engineering** studies chemical reactions, homogeneous chemical reactions, heterogeneous chemical reactions, and catalysis as applied to process engineering.
- **Microscale Physicochemical Engineering** studies small particles, surface science, agglomeration, and separation as applied to process engineering.
- **Coordinated and Joint Programs**

**Coordinated Engineering Applied Mathematics program for the Doctor of Philosophy in Engineering degree between the College of Engineering and the Department of Theoretical and Applied Mathematics (415001PHD)**

### Admission Requirements

Applicants for the Engineering Applied Mathematics Program must have their graduate application and credentials evaluated by the College of Engineering Dean’s Office and the applied mathematics division of the Department of Theoretical and Applied Mathematics. The Admission Requirements for the Doctor of Philosophy in Engineering, as given in the Graduate Bulletin, shall apply to all applicants for the Engineering Applied Mathematics Program. Applications to the Engineering Applied Mathematics Program are accepted on a rolling basis.

### Degree Requirements

The applicable Degree Requirements for the Engineering Applied Mathematics Program are those given in the Graduate Bulletin under the Section Doctor of Philosophy in Engineering. These degree requirements include passing a Qualifying Examination, identifying a Dissertation Director, establishing an Interdisciplinary Doctoral Committee, completing a formal Plan of Study, satisfying the University’s language and residency requirement, passing a Candidacy Examination, presenting an acceptable Dissertation Proposal, writing a dissertation, and publicly and successfully (no “fail” votes) defending the dissertation before the Interdisciplinary Doctoral Committee.

Students in the Engineering Applied Mathematics Program must pass a departmental Qualifying Examination composed and administered by the participating faculty from the applied mathematics division of the Department of Theoretical and Applied Mathematics and the participating faculty from one of the five departments in the College of Engineering.

The Interdisciplinary Doctoral Committee shall consist of at least six members. It shall have an equal number of faculty with primary appointments in the College of Engineering and participating program faculty from the applied mathematics division of the Department of Theoretical and Applied Mathematics. The participating faculty from the Department of Theoretical and Applied Mathematics must hold joint appointments in the College of Engineering.

Graduate students who elect the Engineering Applied Mathematics Program may proceed directly from their baccalaureate degree to the doctoral degree.

Students participating in the Engineering Applied Mathematics Program must have at least 50 percent of minimum coursework from the College of Engineering and at least 50 percent of minimum coursework from the Department of Theoretical and Applied Mathematics.

**Coordinated program for the Doctor of Philosophy in Engineering degree between The University of Akron and Youngstown State University**

The University of Akron and Youngstown State University are engaged in a coordinated program with the objective of facilitating graduate study by engineering students residing in proximity to Youngstown State University. This provides the opportunity and convenience of completing some of the requirements for the Doctor of Philosophy in Engineering at The University of Akron through joint counseling and enrollment at Youngstown State University.

### Admission Requirements

When an engineering graduate student at Youngstown State University declares an interest in the joint doctoral program, the student shall prepare a letter of intent, with academic credentials, to the dean of Engineering at Youngstown State University. The dean of engineering at Youngstown State University shall forward the letter of intent and academic credentials, together with a recommendation, to the dean of engineering at The University of Akron. The dean of engineering at The University of Akron shall have the graduate faculty in the applicant’s discipline evaluate the academic credentials and make a recommendation on the academic acceptability of the applicant. If the recommendation is favorable, the student shall be advised to apply to the Graduate School at The University of Akron for formal admission to the Doctoral Program in the College of Engineering at The University of Akron. The dean of Graduate Studies and Research at Youngstown State University shall be kept informed of the progress of the admission procedure. The applicant from Youngstown State University must satisfy the Admission Requirements for the Doctor of Philosophy in Engineering at The University of Akron.

### Degree Requirements

The engineering student from Youngstown State University must satisfy the Degree Requirements for the Doctor of Philosophy in Engineering at The University of Akron subject to the following modifications:

One of the members of the Interdisciplinary Doctoral Committee for the joint doctoral program candidate shall be an engineering faculty member from Youngstown State University and normally would be the student’s dissertation director, although this is not necessary. The faculty member from Youngstown State University shall have adjunct status at The University of Akron and qualify for Category II graduate faculty membership.

One-half of the coursework and one-half of the research credits may be taken at Youngstown State University. The parity of courses is decided by the faculty on the Interdisciplinary Doctoral Committee when the student submits a proposed Plan of Study. At the Advancement to Candidacy, the Committee recommends official transfer of credits from Youngstown State University to The University of Akron.

**Joint program for the M.D. and Ph.D. in Engineering degree between the University of Akron and the Northeast Ohio Medical University (415002PHD)**

The College of Engineering and NEOMED provide a coordinated program for those desiring both the M.D. and Ph.D. in Engineering degrees. This program integrates the knowledge and skills acquired by the student in each of the programs. Each individual coordinated degree program is tailored to suit the background and research interests of the student. Additional information may be obtained from The University of Akron Department of Biomedical Engineering or NEOMED.

### Admission Requirements

Applicants with a bachelor’s or master’s degree in a discipline other than engineering or in engineering will be required to meet the Admission Requirements for the
Doctor of Philosophy Degree in Engineering. Applicants will be required to have completed the following courses and to have taken the MCAT prior to admission into the coordinated M.D. and Doctor of Philosophy in Engineering program:

M.D. Principles of Chemistry I and II
M.D. Organic Chemistry I and II
M.D. Principles of Biology I and II
M.D., Ph.D. Classical Physics I and II
Ph.D. Statics
Ph.D. Dynamics
Ph.D. Strength of Materials (or Material Science)
Ph.D. Basic Electrical Engineering (or Circuits I & II)
Ph.D. Calculus I, II, III, and Differential Equations

Degree Requirements
To obtain an M.D. degree from NEOMED and a Doctor of Philosophy Degree in Engineering, the student must satisfy NEOMED degree requirements and the College of Engineering’s Doctor of Philosophy in Engineering Degree Requirements. This coordinated program does not change the degree requirements for either program.

MASTER OF SCIENCE DEGREES
The degrees of Master of Science in Chemical Engineering, Master of Science in Civil Engineering, Master of Science in Electrical Engineering, Master of Science in Mechanical Engineering, and Master of Science in Engineering are offered.

Admission Requirements
Applicants for any of these master of science programs must hold a bachelor’s degree from a program that is accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology at the time of graduation, or provide evidence of an equivalent academic background to the Dean of the College of Engineering and the appropriate department chair.

Applicants must submit an official undergraduate transcript, undergraduate grade point average, three letters of recommendation, and official results of the verbal, quantitative, and analytical portions of the GRE. A statement of purpose should also be submitted.

The GRE minimum requirement for admission into a graduate program in the College of Engineering (both master’s and doctoral) is 1150. The GRE score is derived by using the following formula: Quantitative Score + (100 x 4/3 x Analytical Score). The GRE requirement may be waived for students holding degrees from ABET accredited programs (if the department approves).

Applicants with a bachelor’s degree must have an overall grade-point average of 2.75 or better or 3.00 for the last two years (64 semester credits or equivalent).

Applicants whose native language is not English must have a TOEFL score of at least 560 (paper-based) or 213 on the computer-based TOEFL, and also must submit their score on the Test of Written English (TWE). Applicants to the Department of Mechanical Engineering must have a TOEFL score of 590 (paper-based) or 243 (computer-based).

Applicants who do not satisfy the requirements for Full Admission may be granted Provisional Admission or Deferred Admission.

Degree Requirements
The University’s Academic Requirements (See Academic Requirements in this Graduate Bulletin), the following College of Engineering requirements and the department’s academic requirements must all be satisfied for the master of science degrees in the College of Engineering.

- Identify a three-member Advisory Committee including a major advisor before completion of 9 credit hours of coursework.
- Complete a formal Plan of Study that is acceptable to the Advisory Committee with a minimum of 24 credit hours of coursework of which no more than 8 credits are in special topics courses. The formal Plan of Study may be revised upon approval of the Advisory Committee.
- Successfully (no “fail” votes) defend the thesis before the Advisory Committee, or have the Engineering Report approved by the Advisory Committee, or successfully complete the appropriate department’s nonthesis option requirements.

Master of Science in Chemical Engineering
(420000MS: Non-thesis Option)
(420000MST: Thesis Option)

Applicants with a bachelor’s degree in a discipline other than engineering shall have completed coursework in calculus, differential equations, have one year of classical physics, and must complete:

4200:200 Material and Energy Balances 4
4200:225 Equilibrium Thermodynamics 4
4200:321 Transport Phenomena 3
4200:330 Reaction Engineering 3
Total 14

An overall GPA of 3.0 must be maintained for these courses. These undergraduate engineering courses may be taken prior to graduate admission, or concurrently if the student has Full Admission or Provisional Admission and is enrolled for at least 9 graduate credits.

Thesis Option

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>4200:600</td>
<td>Transport Phenomena</td>
<td>3</td>
</tr>
<tr>
<td>4200:605</td>
<td>Chemical Reaction Engineering</td>
<td>3</td>
</tr>
<tr>
<td>4200:610</td>
<td>Classical Thermodynamics</td>
<td>3</td>
</tr>
<tr>
<td>4200:617</td>
<td>Chemical Engineering Electives*</td>
<td>6</td>
</tr>
<tr>
<td>4200:618</td>
<td>Advanced Electives**</td>
<td>6</td>
</tr>
<tr>
<td>4200:619</td>
<td>Advanced Mathematics</td>
<td>6</td>
</tr>
<tr>
<td>4200:620</td>
<td>Master’s Thesis</td>
<td>6</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>30</td>
</tr>
</tbody>
</table>

Nonthesis Option

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>4200:600</td>
<td>Transport Phenomena</td>
<td>3</td>
</tr>
<tr>
<td>4200:605</td>
<td>Chemical Reaction Engineering</td>
<td>3</td>
</tr>
<tr>
<td>4200:610</td>
<td>Classical Thermodynamics</td>
<td>3</td>
</tr>
<tr>
<td>4200:607</td>
<td>Chemical Engineering Report</td>
<td>3</td>
</tr>
<tr>
<td>4200:617</td>
<td>Chemical Engineering Electives*</td>
<td>6</td>
</tr>
<tr>
<td>4200:618</td>
<td>Advanced Electives**</td>
<td>15</td>
</tr>
<tr>
<td>4200:619</td>
<td>Advanced Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>36</td>
</tr>
</tbody>
</table>

*Chemical Engineering students in both degree options are expected to attend and to participate in the department’s seminars.

**Students without BS in Chemical Engineering are required to take 4200:535, 4200:541.

Five Year BS/MS Chemical Engineering Program
(420001MS)
The five year BS/MS program in Chemical Engineering provides superior undergraduate students with the opportunity to complete an M.S. in Chemical Engineering with one additional year of study beyond their B.S. Chemical Engineering degree at The University of Akron. The program is only available to B.S. Chemical Engineering students at The University of Akron. Applications are accepted in the Spring of the junior year.

Master of Science in Civil Engineering
(430000MS: Non-thesis Option)
(430000MST: Thesis Option)

Applicants with a bachelor’s degree in a discipline other than engineering shall have completed coursework in calculus, differential equations, have one year of classical physics, and must select and complete undergraduate coursework from one of four undergraduate disciplines. These undergraduate engineering courses may be taken prior to graduate admission, or concurrently if the student has full admission or provisional admission, and is enrolled for at least 9 graduate credits.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>4300:306</td>
<td>Theory of Structures</td>
</tr>
<tr>
<td>4300:313</td>
<td>Soil Mechanics</td>
</tr>
<tr>
<td>4600:310</td>
<td>Fluid Mechanics</td>
</tr>
<tr>
<td>4300:323</td>
<td>Water Supply and Wastewater Disposal</td>
</tr>
<tr>
<td>4300:341</td>
<td>Hydraulics</td>
</tr>
<tr>
<td>4300:361</td>
<td>Transportation Engineering</td>
</tr>
<tr>
<td>4300:401</td>
<td>Steel Design</td>
</tr>
<tr>
<td>4300:403</td>
<td>Reinforced Concrete Design</td>
</tr>
<tr>
<td>Total</td>
<td>25</td>
</tr>
</tbody>
</table>

Areas of study in the department include structural mechanics, geotechnical, hydraulic, transportation, and environmental engineering.

Thesis Option

Civil Engineering Courses
Approved Mathematics or Science 3
Approved Electives 6
Master’s Thesis 6
Total 21

Nonthesis Option

Civil Engineering Courses
Approved Mathematics or Sciences 3
Approved Electives 12
Engineering Report 2
Total 27

Master of Science in Electrical Engineering
(440000MS: Non-thesis Option)
(440000MST: Thesis Option)

Applicants with a bachelor’s degree in a discipline other than engineering shall have completed coursework in calculus, differential equations, have one year of classical physics, and must select and complete undergraduate coursework from one of four undergraduate disciplines. These undergraduate engineering courses may be taken prior to graduate admission, or concurrently if the student has full admission or provisional admission, and is enrolled for at least 9 graduate credits.

4400:360 Physical Electronics 3
4400:361 Electronic Design 4
4400:363 Switching and Logic 4
4400:384 Energy Conversion I 3
4400:385 Energy Conversion Lab 2

Graduate Studies 45
**The required electrical engineering coursework of 18 credits may not include more than six credits selected from at least two different departments.

**will appoint an advisory committee consisting of three faculty members who are toward the Master of Science in Engineering degree. Upon admission, the dean should declare in writing to the Dean of Engineering of their intention to study

Except for students in biomedical engineering and polymer engineering, students must select and complete undergraduate coursework from one of four undergraduate disciplines. These undergraduate engineering courses may be taken prior to graduate admission, or concurrently if the student has full admission or provisional admission, and is enrolled for at least 9 graduate credits.

**The elective chemical engineering courses may not include more than three credits of 500 level courses.

**The required electrical engineering coursework of 18 credits may not include more than six credits of 500-level courses.

**Thesis Option**

Electrical Engineering Courses** 15
Approved Mathematics 6
Approved Electives 3
Master’s Thesis 6
Total 30

**Nonthesis Option**

Electrical Engineering Courses** 18
Approved Mathematics 6
Approved Electives 3
Total 33

Electrical engineering students pursuing the nonthesis option must pass a graduate level oral comprehensive examination which may be taken after 24 credits have been completed.

**Master of Science in Mechanical Engineering (460000MS: Non-thesis option) (460000MST: Thesis Option)**

Applicants with a bachelor’s degree in a discipline other than engineering shall have completed coursework in calculus, differential equations, have one year of classical physics, and must select and complete undergraduate coursework from one of four undergraduate disciplines. These undergraduate engineering courses may be taken prior to graduate admission, or concurrently if the student has full admission or provisional admission, and is enrolled for at least 9 graduate credits.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>4600:300 Thermodynamics I</td>
<td>4</td>
</tr>
<tr>
<td>4600:301 Thermodynamics II</td>
<td>3</td>
</tr>
<tr>
<td>4600:310 Fluid Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>4600:315 Heat Transfer</td>
<td>3</td>
</tr>
<tr>
<td>4600:336 Analysis of Mechanical Components</td>
<td>3</td>
</tr>
<tr>
<td>4600:340 Systems Dynamics and Response</td>
<td>3</td>
</tr>
<tr>
<td>4600:380 Mechanical Metalurgy</td>
<td>2</td>
</tr>
<tr>
<td>4600:444 Fundamentals of Mechanical Vibrations</td>
<td>3</td>
</tr>
<tr>
<td>4600:441 Control System Design</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>27</strong></td>
</tr>
</tbody>
</table>

Main areas of graduate study in mechanical engineering include systems and controls, engineering mechanics, materials, and thermal-fluid sciences. Students in the department are encouraged to take at least one mechanical engineering course outside the main area of interest to develop some breadth in their graduate education.

**Thesis Option**

Mechanical Engineering Courses* 15
Approved Mathematics 3
Approved Electives 6
Master’s Thesis 6
Total 30

**Nonthesis Option**

Mechanical Engineering Courses* 15
Approved Mathematics 3
Approved Electives 6
Engineering Report 2
Total 32

**Master of Science in Engineering (410000MSE: Non-thesis Option) (410000MSET: Thesis Option)**

This program is intended for the student whose educational objectives cannot be met by the four departmental master of science programs or those who wish to specialize in biomedical engineering, polymer engineering, or engineering management.

**Admission**

Except for students in biomedical engineering and polymer engineering, students should declare in writing to the Dean of Engineering of their intention to study toward the Master of Science in Engineering degree. Upon admission, the dean will appoint an advisory committee consisting of three faculty members who are selected from at least two different departments.

**Thesis Option**

Engineering Courses 12
Approved Mathematics or Science 3
Approved Electives 9
Master’s Thesis 6
Total 30

The thesis must be successfully (no “fail” votes) defended before the Advisory Committee.

**Nonthesis Option**

Engineering Courses 18
Approved Mathematics or Science 3
Approved Electives 9
Engineering Report 2
Total 32

The engineering report must receive the approval of the Advisory Committee.

**Biomedical Engineering Specialization (480000MSE)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>4800:601 Biomedical Instrumentation</td>
<td>4</td>
</tr>
<tr>
<td>4800:611 Biomechanics</td>
<td>3</td>
</tr>
<tr>
<td>3100:695 Physiology for Engineers and Lab</td>
<td>5</td>
</tr>
<tr>
<td>Approved Electives</td>
<td>6</td>
</tr>
<tr>
<td>Master’s Thesis</td>
<td>6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>33</strong></td>
</tr>
</tbody>
</table>

The thesis must be successfully (no “fail” votes) defended before the Advisory Committee.

**Polymer Engineering Specialization**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>410001MSE Polymers</td>
<td>12</td>
</tr>
<tr>
<td>Polymeric Engineering Electives</td>
<td>11</td>
</tr>
<tr>
<td>Approved Engineering and Science Elective</td>
<td>3</td>
</tr>
<tr>
<td>Thesis</td>
<td>6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>32</strong></td>
</tr>
</tbody>
</table>

The thesis must be successfully (no “fail” votes) defended before the Advisory Committee.

**Engineering Management Specialization (410001MSE)**

This is an evening program which is intended primarily for practicing engineers who are working full-time and wish to upgrade their engineering and management skills.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>6200:601 Financial Accounting</td>
<td>3</td>
</tr>
<tr>
<td>6400:602 Managerial Finance</td>
<td>4</td>
</tr>
<tr>
<td>6500:652 Managing People in Organizations</td>
<td>3</td>
</tr>
<tr>
<td>6600:620 Strategic Marketing Management</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>21</strong></td>
</tr>
</tbody>
</table>

**Required Courses (3 credit hours)**

Elective

Choose three credits of 600 level College of Business Administration courses.

1 Engineering courses can be taken from any engineering department with approval of engineering advisor.

2 The Engineering Management Report must be approved by the advisor and Advisory Committee. One of the members of the committee shall be from the College of Business Administration.

3 More advanced graduate business courses shall be required of students who have completed similar undergraduate courses. This determinations shall be made by the Assistant Dean and Director of Graduate Programs, College of Business Administration.

4 6200:602 is a prerequisite for 6400:602.

**ENGINEERING CERTIFICATE PROGRAMS**

The College of Engineering offers graduate certificate programs in addition to master’s and doctoral degree programs. Certificates in Environmental Engineering, Geotechnical Engineering, Structural Engineering, Transportation Engineering, and Motion and Control Specialization are available. Descriptions of these and all graduate certificate programs can be found on page 85 of this bulletin under Interdisciplinary and Certificate Programs of Study.
College of Education

Mark D. Shermis, Ph.D., Dean
Evonn N. Welton, Ph.D., Assistant Dean for Student Services

Mission Statement
The University of Akron’s College of Education is a community of professionals whose purpose is to provide leadership for community well-being through standard-setting programs that enhance teaching, learning, and human development; research and inquiry; and outreach. We develop ourselves and others through continuous improvement and through a commitment to these core components of professional practice and scholarship: knowledge, technology, diversity, and ethics.

Purpose
The aim of the College of Education is to meet the comprehensive charge of our mission through initial and advanced teacher education programs as well as programs in administration, counseling, technical education, higher education, sport and exercise science, athletic training for sports medicine, and several teacher education programs housed outside the College. Programs include a balanced offering of a foundation in general education, intensive study in the content area, and those professional courses and other learning experiences which attempt to combine theory and practice.

The education program and courses presented in the bulletin reflect the most current courses and program offerings. For further information about specific programs and requirements, contact the College of Education Office of Student Services Advisement Office. (330) 972-6970 or (330) 972-7750.

Doctor of Philosophy Degree
Four Doctor of Philosophy degrees are offered through the College of Education. Two degrees are offered, the Ph.D. in Elementary Education and the Ph.D. in Secondary Education, in the Department of Curricular and Instructional Studies, and two degrees are offered, the collaborative Ph.D. in Counseling Psychology and the Ph.D. in Counselor Education and Supervision, in the Department of Counseling.

The degrees will be awarded to the student who fulfills the general requirements of the Graduate School and passes the general and specific requirements of the Doctor of Philosophy degree program.

Doctorate in Education Degree
A Doctorate in Education degree is offered through the College of Education, Department of Educational Foundations and Leadership. The Ed.D. degree will be awarded to the student who fulfills the general requirements of the Graduate School and passes the general and specific requirements of the Doctorate in Educational Leadership degree program.

Doctoral Residency Requirements
The minimum residency requirement for a doctoral candidate in all programs is at least two consecutive semesters of full-time study and involvement in departmental activities. Full-time study is defined as 9-15 semester credits, except for graduate teaching and research assistants for whom full-time is specified by assistantship agreements. The summer sessions may count as one semester, provided that the candidate is enrolled for a minimum total of six semester credit hours per combined summer term.

Continuous Doctoral Program Enrollment
All students admitted to the doctoral program must register for a minimum of one semester hour of graduate credit as approved by their advisors during each fall and spring semester. Individual departments may exceed this minimum requirement. Doctoral students should consult their advisors about additional requirements.

Doctoral Programs in the Department of Curricular and Instructional Studies

Doctor of Philosophy in Elementary Education (520000PHD)
Doctor of Philosophy in Secondary Education (530000PHD)

The Doctor of Philosophy degree in Elementary Education and the Doctor of Philosophy in Secondary Education degrees offered by the Department of Curricular and Instructional Studies are designed to meet the needs and interests of persons in pre-K, elementary, middle, secondary, postsecondary, higher education, and other institutions or agencies that might have educational/learning programs. A qualified student can, through consultation with an advisor and within the expertise and resources of the department, design a specialization to meet his/her career objectives.

Program Description
The program is predicated on the belief that an effective instructor evolves from a well-planned program containing exposure in three basic areas:

1. Professional Education in Curricular and Instructional Studies
2. Foundation Studies
3. Area of Specialization

Listed below and of particular significance are the five sequential steps necessary for participation in the doctoral program:

1. Successful Completion of Admission Requirements (see below)
2. Completion of the Program Course Distribution Plan with Major Adviser
3. Completion of the Program Coursework (see course requirements below)
4. Written and Oral Comprehensive

In this way, the comprehensive examinations are offered each semester.

5. Successful Completion of Dissertation
   a. Select Dissertation Chair and Committee
   b. The dissertation proposal must receive approval of the Dissertation Committee prior to advancement to candidacy.
   c. The candidate’s dissertation chair must be from the Department of Curricular and Instructional Studies and have Category II graduate faculty status.

Admission Requirements
Admission to the Curricular and Instructional Studies Ph.D. program is limited to a select number of students each year. Admission deadlines are March 1 for fall admission and October 1 for spring admission. More candidates apply for admission than the Department has the resources and capacity to admit. Therefore, applying for admission to the doctoral program is no guarantee of admission, and applicants to the program must recognize the possibility of denial.

Criteria for admission to the Curricular and Instructional Studies Ph.D. program are as follows:
1. Graduate and undergraduate degrees from accredited universities and in programs considered to offer adequate preparation for the Ph.D. in Curricular and Instructional Studies (Ph.D., Elementary Education; Ph.D., Secondary Education).
2. Acceptable grade point averages in a completed graduate degree (at least a 3.5 GPA on a scale of 4.0).
3. Completion of application to Graduate School that includes:
   a. Letter of Intent/Statement of Purpose. The Letter of Intent/Statement of Purpose should indicate career goals and research interest and must be compatible with departmental resources and goals.
   b. Agreement to Advise form. Candidates are responsible for obtaining faculty sponsors to complete Agreement to Advise form.
   c. Current vita
   d. Three letters of academic reference
   e. Official transcripts
4. Demonstration of doctoral level writing ability as evidenced by a Miller Analogy Test score of 399 or higher or a 550 on the verbal portion of the GRE. Scores more than five years old will not be accepted for evaluation of the doctoral application.
5. Controlled departmental writing sample assignment. This requirement will be administered after the March 1 and October 1 admission deadlines. Consult the Department of Curricular and Instructional Studies Office for specific writing sample deadline(s).
6. After March 31 (for Fall admission) or October 31 (for Spring admission) all candidates will be asked to schedule a twenty minute interview with the Doctoral Committee of the Department of Curricular and Instructional Studies. Candidates may also be judged on depth and breadth of knowledge, poise, thinking ability, ability to communicate verbally, relevant educational work experience, uniqueness, potential success in desired field, and motivation and commitment to a position of educational leadership. The opportunity to interview is no guarantee of admission.
Research or Legal Research and Writing or another advisor-approved course (3 credits) may be taken in lieu of 5100:745 Qualitative Methods II (3 credits)

**5100:801** Seminar: Exploration/Qualitative (3 credits) may be taken in lieu of 5100:744 Qualitative Methods I (3 credits)

**5100:801** Seminar: Empirical or Seminar II: Ethnographic/Historical or Case Study

**5100:750 Seminar: Empirical or Seminar II: Ethnographic/Historical or Case Study**

**5100:745 Qualitative Methods II**

Area of Specialization: 18 credit hours

Cognate Area Outside of Education: 6 credit hours

Dissertation: 20 credit hours

Total Program: 92 credit hours

Additional coursework taken to develop a competency area may not be applied to the total number of hours required in the Ph.D. program.

**Doctoral Programs in Counseling**

**Collaborative Ph.D. Program in Counseling Psychology**

(565000PHD)

The Collaborative Program in Counseling Psychology allows students a choice of entry points. Students with a master’s degree in counseling, guidance and counseling, psychology, school psychology, or a related field may enter through the Counseling Department of the College of Education. Students with a baccalaureate degree may enter through the Psychology Department of the Buchtel College of Arts and Sciences. Students receive exposure to both colleges through shared coursework and faculty involvement with dissertations. Students of both departments are expected to attain a level of broad scientific competence in the core areas of psychology, the biological, social, cognitive-affective, and individual bases of human behavior. Practicum and internship experiences are required of all students and range from skill building in basic psychological assessment and counseling to a year-long, full-time internship in an applied setting. The Collaborative Program in Counseling Psychology is accredited by the American Psychological Association.

The Department of Counseling offers a four-year, full-time Counseling Psychology program leading to a doctoral degree. Program emphasis is strongly placed on a scientist-practitioner model of training. Beyond the basic core areas of psychology, students are expected to establish specific competencies in theory, research, and practice of Counseling Psychology. Academic preparation incorporates the study of theoretical approaches to counseling and psychotherapy, theory and practice of assessing issues in counseling psychology, supervision, vocational psychology, professional issues and ethics, statistics, and research design. Research and publication are strongly encouraged. Graduates typically teach, research, and training positions in academia, as well as positions in counseling centers and other mental health agencies.

Admission to the Collaborative Program in Counseling Psychology is handled through the department associated with the student’s chosen entry point. Students must fulfill both departmental and Graduate School admission requirements.

**Admission Requirements—College of Education Ph.D.**

- A Graduate School application and an official transcript of all undergraduate and graduate coursework from each college or university attended must be completed and returned to the Graduate School.
- A minimum combined score on the Graduate Record Examination (GRE) General Test (verbal and quantitative sections) of 1000 is recommended. All students must also complete the GRE Psychology Subject Test and have these results reported to the Graduate School. Applicants are required to submit a declaration of intent outlining their occupational goals and their interest in and commitment to the counseling psychology program.
- A grade point average of 2.75 or above earned on all completed undergraduate work or a 3.0 or above on the most recent 64 semester hours of undergraduate work is required. A grade point average of 3.25 or above on all graduate work is required.
- Applicants are required to submit a vita outlining educational and professional experiences.
- Applicants are required to submit a declaration of intent outlining their occupational goals and their interest in and commitment to the counseling psychology field.
- Applicants must submit a minimum of three letters of reference attesting to success in the field and probable academic success at the doctoral level.
- Finalists are required to interview with program faculty, either in person or via telephone.

All application materials must be received by the department by December 1. Departures from the program may be made only with the approval of the counseling psychology program faculty. Students may be considered for admission to counseling psychology only if they have earned a master’s degree in counseling, guidance and counseling, psychology, school psychology, or a related field.

**Required Courses**

- 5100:614 Individual and Family Life-Span Development
- 5100:742 Statistics in Education
- 5100:743 Advanced Educational Statistics
- 5600:651 Techniques of Counseling

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The degree will be awarded to the student who, in addition to fulfilling the general requirements of the Graduate School, has met the following specific requirements:

- Completion of all departmental admission requirements
- Completion of a minimum 92 graduate credits including the doctoral dissertation. A student considered deficient in any area may be required to take additional courses.
- Completion of a foundation studies program designed to prepare the student before specialization.
- Completion of a test in a language judged not to be the student's native tongue and excluding English. (See section on Additional Research Competency)
- Completion of six credits in a cognate area.
- Completion of a comprehensive written and oral examination.
- Completion of a dissertation comprising not more than 20 credits. Credits beyond the 20 hours may not be applied to the degree. The oral examining committee must be constituted of at least five full-time graduate faculty members, one of whom must be from outside the college.
- Pass the general requirements for the Doctor of Philosophy degree.

**Additional Research Competency**

In addition to successfully completing the approved program of courses, the Ph.D. student must display competency in one of the following areas. Course work taken to develop the competency may not be applied to the total number of hours required in the Ph.D. program.

- a. Foreign Language
  - A reading knowledge of one foreign language. The Department will work cooperatively with the Department of Modern Languages to determine that the student does in fact demonstrate the ability to read in a foreign language i.e., a language other than the student’s native language and excluding English.
- b. Statistics/Research Methods
  - Students will successfully complete a minimum of 9 hours of additional advanced statistical/research methods courses approved by student’s advisor.
- c. Professional Publication
  - The reading of a research or position paper accepted for publication by a refereed professional journal. The student may serve as senior or co-author. The advisor must file a letter of approval of the published written. This letter shall present the advisor’s review of the academic integrity of the published article in terms of adequacy in meeting this requirement. A letter of acceptance for publication shall be considered as published.

**Curricular and Instructional Studies Ph.D. Course Requirements**

**Curricular and Instructional Studies Core (15)**

- 5500:600 Concepts of Curriculum & Instruction (or 5400:xxx) 3
- 5500:605 Seminar in Trends and Issues in Curriculum & Instruction (or 5400:xxx) 3
- 5500:800 Professional Doctoral Seminar in Curricular and Instructional Studies 3
- 5500:890 Seminar in Curricular and Instructional Studies 3

Three additional hours will be selected in the area of Curricular and Instructional Studies with advisor approval.

**Social/Philosophical Foundations (15)**

- 5100:600 Philosophies of Education (or 602 or 604) 3
- 5100:620 Psychology of Instruction for Teaching and Learning (or 624 or 5400:500) 3
- 5100:701 History of Education in American Society (or 703) 3
- 5100:705 Seminar in Social/Philosophical Foundations of Education 3
- 5100:723 Teaching Behavior and Instruction (or 721 or 710) 3

**Research Foundations (18)**

- 5100:640 Techniques of Research 3
- 5100:360 Research Design 3
- 5100:341 Data Collection Methods 3
- 5100:342 Statistics in Education 3
- 5100:344 Qualitative Methods III 3
- 5100:345 Qualitative Methods IV 3

**Research Foundation Courses**

- 5100:801 Seminar: Exploration/Qualitative (3 credits) may be taken in lieu of 5100:744 Qualitative Methods I (3 credits)
- 5100:801 Seminar: Empirical or Seminar II: Ethnographic/Historical or Case Study

7. In certain cases an applicant may be required to take coursework on the graduate level at The University of Akron before a final decision on his/her application for admission is made.

8. Candidates must have at least three years of teaching experience. (This does not apply to postsecondary/technical adult education area candidates.)

Note: Applicants who score less than 399 on the MAT or 590 on the verbal portion of the GRE, do not successfully complete the controlled writing sample, and do not meet the GPA requirement will not be admitted to the doctoral program.

**Degree Requirements**

The degree will be awarded to the student who, in addition to fulfilling the general requirements of the Graduate School, has met the following specific requirements:

- Completion of all departmental admission requirements
- Completion of a minimum 92 graduate credits including the doctoral dissertation. A student considered deficient in any area may be required to take additional courses.
- Completion of a foundation studies program designed to prepare the student before specialization.
- Completion of a test in a language judged not to be the student’s native tongue and excluding English. (See section on Additional Research Competency)
- Completion of six credits in a cognate area.
- Completion of a comprehensive written and oral examination.
- Completion of a dissertation comprising not more than 20 credits. Credits beyond the 20 hours may not be applied to the degree. The oral examining committee must be constituted of at least five full-time graduate faculty members, one of whom must be from outside the college.
- Pass the general requirements for the Doctor of Philosophy degree.
Ph.D. in Counselor Education and Supervision

Admission Requirements

- Graduation from a baccalaureate program with a minimum GPA of 3.25
- Three letters of recommendation
- GRE scores (must be taken within the previous five years)
- Current curriculum vitae
- A statement of purpose
- Official transcripts from all institutions attended

Footnotes:

- (must graduate with 1000 program clinical hours, see program guidelines)
- (minimum of 2 semesters/600 clock hours)
- (3 semesters; 4 credits each semester)
- (must graduate with 1000 program clinical hours, see program guidelines)

Course Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>5600:756</td>
<td>Practicum in Counseling II</td>
<td>8</td>
</tr>
<tr>
<td>3750:610</td>
<td>Core I: Social Psychology</td>
<td>2</td>
</tr>
<tr>
<td>3750:620</td>
<td>Core II: Cognitive Psychology</td>
<td>2</td>
</tr>
<tr>
<td>3750:630</td>
<td>Core III: Individual Differences</td>
<td>2</td>
</tr>
<tr>
<td>3750:640</td>
<td>Core IV: Biopsychology</td>
<td>2</td>
</tr>
<tr>
<td>3750:650</td>
<td>Core V: Social-Cognitive Psychology</td>
<td>2</td>
</tr>
<tr>
<td>3750:750</td>
<td>Advanced Psychological Test and Measures</td>
<td>2</td>
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<tr>
<td>5600:702</td>
<td>Advanced Counseling Practicum I</td>
<td>4</td>
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<tr>
<td>5600:702</td>
<td>Advanced Counseling Practicum II</td>
<td>4</td>
</tr>
<tr>
<td>5600:707</td>
<td>Supervision in Counseling Psychology</td>
<td>4</td>
</tr>
<tr>
<td>5600:709</td>
<td>Introduction to Counseling Psychology</td>
<td>2</td>
</tr>
<tr>
<td>5600:710</td>
<td>Theories of Counseling and Psychotherapy</td>
<td>4</td>
</tr>
<tr>
<td>5600:711</td>
<td>Vocational Behavior</td>
<td>4</td>
</tr>
<tr>
<td>5600:712</td>
<td>Principles and Practice of Intelligence Testing</td>
<td>4</td>
</tr>
<tr>
<td>5600:713</td>
<td>Professional, Ethical and Legal Issues in Counseling Psychology</td>
<td>4</td>
</tr>
<tr>
<td>5600:714</td>
<td>Objective Personality Evaluation</td>
<td>4</td>
</tr>
<tr>
<td>5600:716</td>
<td>Research Design in Counseling I</td>
<td>3</td>
</tr>
<tr>
<td>5600:717</td>
<td>Issues of Diversity in Counseling Psychology</td>
<td>4</td>
</tr>
<tr>
<td>5600:718</td>
<td>History and Systems in Psychology</td>
<td>2</td>
</tr>
<tr>
<td>5600:736</td>
<td>Counseling Psychology Practicum I</td>
<td>4</td>
</tr>
<tr>
<td>5600:736</td>
<td>Counseling Psychology Practicum II</td>
<td>4</td>
</tr>
<tr>
<td>3750/5600</td>
<td>Required Electives</td>
<td>8</td>
</tr>
<tr>
<td>5600:899</td>
<td>Doctoral Dissertation (minimum)</td>
<td>15</td>
</tr>
<tr>
<td>Language Requirement</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td>Minimum Total Credit Hours Required</td>
<td>114</td>
<td></td>
</tr>
</tbody>
</table>

Students register for dual listed courses (5750/5600) under their home department code.

The comprehensive written examination is prepared, administered, and graded by program faculty. At least one core Counseling Psychology faculty member from each department is required to participate in the oral portion of the comprehensive examination.

At least one core Counseling Psychology faculty member from each department is required to participate on the student’s dissertation committee.

Internship sites must be approved by the Collaborative Program Internship Committee. Internships must include 2,000 post-master’s hours and be completed in less than two years.

Ph.D. in Counselor Education and Supervision

(560000PHD: Counselor Education and Supervision)

(560005PHD: Marriage and Family Counseling/Therapy)

The doctoral program in Counselor Education and Supervision is designed for students who hold a master’s degree in counseling or a related field. The program has two tracks: (a) Counselor Education and Supervision (CES), and (b) Marriage and Family Counseling/Therapy (MFC/T). Students in each track are expected to attain advanced level competencies in the core areas of their track, research, and supervison. Practicum and internship experiences are required. The cognate/ elective option allows students some flexibility in designing a program that is consistent with their career goals. Each track requires completion of a residency year (the last year of course work); passing of the doctoral written and oral comprehensive examinations; and completion of a dissertation. With the proper selection of courses, graduates of the CES track can meet the requirements for licensure in Ohio as a Professional Clinical Counselor. With the proper selection of courses, graduates of the MFC/T track can meet the requirements for licensure in Ohio as a Professional Clinical Counselor, Marriage and Family Therapist, Clinical member of AAMFT, and AAMFT Approved Supervisor in Training.

The Graduate Record Examination (General Test) is used as the qualifying examination.

The Ph.D. Program in Counselor Education and Supervision is accredited by the Council for Accreditation of Counseling and Related Education Programs (CACREP), a specialized accrediting body recognized by the Council on Postsecondary Education (COAPA). In addition, the Marriage and Family Counseling/Therapy program is accredited by the Commission on Accreditation of Marriage and Family Therapy Education (COAMFTE).

Admission Requirements

- Graduation School Application
- Official undergraduate and graduate transcripts
- Official GRE score report
- Three letters of recommendation
- Department of Counseling Application Supplement Form
- Professional resume

All application materials are due in the Department of Counseling no later than January 15. Doctoral students are only admitted one time per year, beginning each fall semester.

Ph.D. in Counselor Education and Supervision Requirements:

Course Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>5100:706</td>
<td>Social-Philosophical Foundations</td>
<td>3</td>
</tr>
<tr>
<td>5100:635</td>
<td>Emerging Technologies for Instruction</td>
<td>3</td>
</tr>
<tr>
<td>5100:742</td>
<td>Statistics in Education</td>
<td>3</td>
</tr>
<tr>
<td>5100:763</td>
<td>Advanced Educational Statistics</td>
<td>3</td>
</tr>
<tr>
<td>5600:715</td>
<td>Research Design in Counseling I</td>
<td>3</td>
</tr>
<tr>
<td>5600:716</td>
<td>Research Design in Counseling II</td>
<td>3</td>
</tr>
<tr>
<td>5600:702</td>
<td>Advanced Counseling Practicum</td>
<td>4</td>
</tr>
<tr>
<td>5600:710</td>
<td>Theories of Counseling and Psychotherapy</td>
<td>4</td>
</tr>
<tr>
<td>5600:669</td>
<td>System Theory in Family Therapy</td>
<td>3</td>
</tr>
<tr>
<td>5600:725</td>
<td>Doctoral Professional Seminar in Counselor Education</td>
<td>3</td>
</tr>
<tr>
<td>5600:730</td>
<td>Topical Seminar: Use of Assessment Data</td>
<td>4</td>
</tr>
<tr>
<td>5600:737</td>
<td>Clinical Supervision I</td>
<td>4</td>
</tr>
<tr>
<td>5600:738</td>
<td>Clinical Supervision II</td>
<td>4</td>
</tr>
<tr>
<td>XXXX</td>
<td>Cognates</td>
<td>6-10</td>
</tr>
<tr>
<td>5600:785</td>
<td>Doctoral Internship</td>
<td>6</td>
</tr>
<tr>
<td>5600:785</td>
<td>Internship Marriage and Family</td>
<td>6</td>
</tr>
</tbody>
</table>

In addition, students enrolled in the Marriage and Family Doctoral Track must complete the following requirements:

- 5600:720 | Topic Seminar: Topic Issues in Marriage and Family Therapy            | 3       |
- 5600:607 | Marital Therapy                                                       | 3       |
- Minimum Total Credit Hours Required | 120  |

Master’s Degree Coursework: Students must have completed entry-level course work in all the following areas before beginning doctoral program course work:

- 5600:643 | Counseling Theory (Individual)                                        | 3       |
- 5600:655 | Marriage and Family Theory and Techniques                             | 3       |
- 5600:645 | Assessment                                                            | 4       |
- 5600:647 | Career Counseling                                                     | 3       |
- 5600:651 | Techniques of Counseling                                              | 3       |
- 5600:653 | Group Counseling                                                      | 4       |
- 5100:640 | Techniques of Research                                                | 3       |
- 5600:646 | Multicultural Counseling                                              | 3       |
- 5600:648 | Individual and Family Development                                     | 3       |
- 5600:664 | DSM-V                                                                | 3       |

Foundation course in Community, School, or Marriage and Family Counseling

- 5600:675 | Counseling Practicum (Community, School, or MFT)                      | 5       |
- 5600:685 | Counseling Internship (Community, School, or MFT)                     | 3       |
- 5600:680 | Counseling Children (Counselor Education Program only)               | 3       |

Marriage and Family Program only - Students must have completed standard curriculum approved by AAMFT

A minimum of 60 semester hours of the total 120 hours must be taken after the student is admitted into the doctoral program in Counselor Education and Supervision. For further program details and specific admission requirements, contact the Department of Counseling.

Doctorate in Educational Leadership

(570000EDD)

Admissions to the Doctorate in Educational Leadership currently suspended

The Department of Educational Foundations and Leadership bears a special responsibility for preparing P-16 leaders to the degree that its graduates have unique opportunities to shape organizational goals, to influence the character of educational programs, and to affect institutional performance. The department’s programs are based on the strengths of the total College and University. Professional knowledge and skills of administration are developed as they relate to larger issues of P-16 educational policy and purpose.

Admission Requirements

- Letter of application to include the nature of the applicant's interest in the program and future career goals
- GRE: Total preferred score over 1000 (must have been taken within the past five years)
- Official transcripts: undergraduate, masters, certificate/licensure programs, and any previous doctoral study
- 3.25 GPA - masters
- Current curriculum vitae/resume
- Three letters of reference addressing the applicant’s organizational, research, and communication skills

Application materials must be submitted by March 1 for fall admission and October 15 for spring admission. Applicants who make the first cut, based on review of the application package above, will be invited to campus to provide the following:
• Structured interview
• Proctored writing sample

Program Requirements

Behavioral, Historical, and Social-Philosophical Studies (12)
5100:701 History of Education in American Society
3
or
5100:703 History and Philosophy of Higher Education
3
5100:705 Seminar: Social-Philosophical Foundations of Education
3
5100:710 Adult Learning, Development and Motivation
3
5100:721 Learning Processes
3

Research (22)
5170:899 Doctoral Dissertation (student must take at least 10 semester dissertation hours but may count up to 20 toward the degree)
10

Students will select any combination of the following research courses for a minimum of 12 semester hours depending upon their research interests and career goals.

5100:740 Research Design
3
5100:741 Data Collection Methods
3
5100:742 Statistics in Education
3
5100:743 Advanced Educational Statistics
3
5100:801 Research Seminar: Explanatory/Qualitative
3
5100:803 Research Seminar: Ethnography/Historical
3
5100:801 Research Seminar: Case Study Research
3
5100:801 Research Seminar: Legal Research and Writing
3
5100:803 Research Seminar: Empirical Studies
3

Educational Administration (35)
5170:704 Advanced Study in Educational Leadership
3
5170:705 Decision Making in Educational Leadership
3
5170:708 Economics in Education
3
5170:716 Advanced Evaluation of Educational Organizations
3
5170:730 Residency Seminar
3
5170:732 Public and Media Relations in Educational Organizations
3
5170:745 Seminar: Urban Educational Issues
3
5170:746 Politics of Education
3
or
5170:710 Advanced Educational Law
3
5170:720 Topical Seminar (two enrollments of three credits each)
6
5170:795 Doctoral Internship
5

Cognate (12)
(Must be graduate level coursework outside the field of education. Advisor approval required)

General Electives (9)

Total Program: 90

MASTER’S DEGREE

Programs leading to the degree of M.A. in education and M.S. in education.
The student who expects to earn the master's degree for advancement in the field of teaching must meet the general requirements for admission to the Graduate School and must be qualified to hold a standard teaching license. Exceptions to this latter requirement will be made for the qualified student who does not wish to teach or perform duties in the public schools provided the student presents or acquires an appropriate background of study or experience. The student who expects to earn the master's degree in guidance and administration also should have had successful teaching experience. A physical examination may be required if and when indicated. Any student who exhibits a deficiency in English or other required skills may be required to correct it before recommendation for an advanced degree. The student must receive a pass grade on the relevant Master's Comprehensive Exam if required.

No more than six credits of workshops or institutes can be used to satisfy degree requirements.
The student must complete a minimum of nine credits in foundation studies in education:*

5100:600 Philosophies of Education
3
5100:602 Comparative and International Education
3
5100:604 Topical Seminar in the Cultural Foundations of Education
3
5100:620 Psychology of Instruction for Teaching and Learning
3
5100:624 Seminar: Educational Psychology
3
5100:640 Techniques of Research
3

*Cognate courses are required at the discretion of the advisor to meet state licensing requirements. A maximum of seven credits is required.

Admission Requirements

• Graduate School Application
• Official transcripts from institutions attended
• Three letters of recommendation.
• Department of Counseling Application Supplement Form

Interview will be required for applicants who meet admission criteria

Classroom Guidance for Teachers

General Education (5600008MA) (5600008MS)

This course of study leads to an expanded knowledge of how guidance and counseling services benefit students and others in public school settings. Note that numerous areas of concentration are available to students. This is not a licensure program. Any changes in the agreed-upon program must be approved by the student’s advisor.

• Foundations Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>5100:620</td>
<td>Psychology of Instruction for Teaching and Learning</td>
<td>3</td>
</tr>
<tr>
<td>5100:624</td>
<td>Seminar: Educational Psychology</td>
<td>3</td>
</tr>
<tr>
<td>5600/5100:648</td>
<td>Individual and Family Development Across the Lifespan</td>
<td>3</td>
</tr>
<tr>
<td>5100:660</td>
<td>Philosophies of Education</td>
<td>3</td>
</tr>
<tr>
<td>5100:664</td>
<td>Topical Seminar in the Cultural Foundations of Education</td>
<td>3</td>
</tr>
<tr>
<td>5600/5100:646</td>
<td>Multicultural Counseling</td>
<td>3</td>
</tr>
</tbody>
</table>

• Research Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>5100:640</td>
<td>Techniques of Research</td>
<td>3</td>
</tr>
</tbody>
</table>

Minimum Foundation Hours Required 9

• Required Departmental Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>5600:631</td>
<td>Elementary/Secondary School Counseling</td>
<td>3</td>
</tr>
<tr>
<td>5600:647</td>
<td>Career Development and Counseling Across the Lifespan</td>
<td>3</td>
</tr>
<tr>
<td>5600:645</td>
<td>Tests and Appraisal in Counseling</td>
<td>4</td>
</tr>
<tr>
<td>5600:610</td>
<td>Counseling Skills for Teachers</td>
<td>3</td>
</tr>
<tr>
<td>5600:663</td>
<td>Developmental Guidance and Emotional Education</td>
<td>3</td>
</tr>
<tr>
<td>5600:656</td>
<td>Field Experience (MUST be taken before or concurrently with 663)</td>
<td>1</td>
</tr>
<tr>
<td>5610:540</td>
<td>Developmental Characteristics of Exceptional Individuals</td>
<td>3</td>
</tr>
<tr>
<td>5610:604</td>
<td>Collaboration and Consultation Skills for Special Educators</td>
<td>3</td>
</tr>
</tbody>
</table>

Minimum Department Hours Required 20

• Area of concentration

An area of concentration with a minimum of six (6) hours may be selected from one of the following areas (the student may, with advisor approval, propose an area of concentration not listed):

<table>
<thead>
<tr>
<th>Area of Concentration</th>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Middle School Education</td>
<td>5600:645</td>
<td>Physical Fitness and Well-Being</td>
<td>3</td>
</tr>
<tr>
<td>Early Childhood Education</td>
<td>5600:645</td>
<td>Special Education</td>
<td>3</td>
</tr>
<tr>
<td>School and Community Relations</td>
<td>5600:645</td>
<td>Physical Fitness and Well-Being</td>
<td>3</td>
</tr>
<tr>
<td>Curriculum and Instruction</td>
<td>5600:645</td>
<td>Special Education</td>
<td>3</td>
</tr>
<tr>
<td>Physical Fitness and Well-Being</td>
<td>5600:645</td>
<td>Special Education</td>
<td>3</td>
</tr>
<tr>
<td>Social Education</td>
<td>5600:645</td>
<td>Special Education</td>
<td>3</td>
</tr>
<tr>
<td>Computers in Education</td>
<td>5600:645</td>
<td>Special Education</td>
<td>3</td>
</tr>
<tr>
<td>Family Ecology</td>
<td>5600:645</td>
<td>Special Education</td>
<td>3</td>
</tr>
<tr>
<td>Communicative Disorders</td>
<td>5600:645</td>
<td>Special Education</td>
<td>3</td>
</tr>
<tr>
<td>Outdoor Education</td>
<td>5600:645</td>
<td>Special Education</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Area of Concentration Hours Required 6

Minimum Semester Hours Required for Graduation 35

Community Counseling

General Education (560005MA) (560005MS)

The course of study leads to eventual employment in community mental health centers and a wide variety of other community mental health settings. Note that a counselor license is usually required by most agencies. (Check counselor licensure elsewhere in this handbook.) Any changes in the agreed-upon program must be approved by the student’s advisor.

• Foundations Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>5600:648</td>
<td>Individual and Family Development</td>
<td>3</td>
</tr>
<tr>
<td>5600:648</td>
<td>Multicultural Counseling</td>
<td>3</td>
</tr>
</tbody>
</table>

Admission Requirements

• Graduate School Application
• Official transcripts from institutions attended
• Three letters of recommendation.
• Department of Counseling Application Supplement Form

Interview will be required for applicants who meet admission criteria
Required Counseling Department Courses

- Foundations (select one course from each area)
- Counseling Theory & Philosophy
- Career Development and Counseling Across the Lifespan
- Techniques of Counseling
- Group Counseling (prerequisites: 5600:651 and 5600:643)
- Practicum in Counseling (prerequisite: 5600:653)
- Internship in Counseling (prerequisite: 5600:675)
- Addiction Counseling I: Theory and Assessment

Clinical Counseling Component

- Personality and Abnormal Behavior
- Objective Personality Evaluation
- Treatment in Clinical Counseling
- Also, choose one of the following three courses:
  - Counseling Youth at Risk
  - Play Therapy
  - Marriage and Family Therapy: Theory and Techniques
  - Counseling Children
  - Addiction Counseling II: Treatment Planning and Intervention Strategies

Minimum Total Hours Required for Program 60

Admission Requirements

For those with a teaching license and two years teaching experience:

- Minimum Department Hours Required 35
- Minimum Total Hours Required for Program 60

- Counseling Process (all required)
  - Techniques of Counseling
  - Group Counseling (prerequisites: 5600:651 and 5600:643)
  - Practicum in Counseling**‡ (prerequisites: 5600:631, 645, 646, 647, 653, 659)

Minimum Department Hours Required

- Clinical Experience Requirements
  - Field Experience
    - (Pre-practicum one hour taken each semester, the two semesters immediately before Practicum 5600:675)
  - Practicum in Counseling‡ (register for MFC/T section)
    - (Prerequisites: 5600:655, corequisite: 5600:669; or prerequisite: 5600:643)
  - Internship
    - (Minimum of two semesters immediately following 5600:675, register for MFC/T section)

**Must be taken during first or second semester.
**Must sign up with Secretary during first semester of enrollment.
‡Must sign up with Internship Coordinator no later than second week of term preceding internship. 
Indepenent Study, Field Experience, Practicum, and Internship require closed class permission. You must get one from the Department office prior to registering.

School Counseling (560103MA) (560103MS)

This course of study leads to licensure as a school counselor in the State of Ohio. Any changes in the agreed upon program must be approved by the student’s advisor.

- Admissions Requirements
  - 2.75 undergraduate grade point average
  - Statement of good moral character
  - Three letters of reference
  - Departmental supplemental application
  - For those without a teaching license:
    - 2.75 undergraduate grade point average
    - BCI check and FBI check
  - Three letters of reference
  - Departmental supplemental application

Minimum Foundation Hours Required 9

- Required Counseling Department Courses
  - Professional Orientation (select one course from each area)
    - Seminar in Counseling
    - Elementary/Secondary School Counseling
    - Organization & Administration of Guidance Services
    - Counseling Theory
    - Career Development and Counseling Across the Lifespan

Minimum Foundation Hours Required 3

- Counseling Theory
- Counseling Theory & Philosophy
- Career Development and Counseling Across the Lifespan

Minimum Department Hours Required 35

- Specialized Studies
  - Issues for Sexuality for Counselors
  - Addiction Counseling I: Theory and Assessment

Minimum Total Hours Required for Graduation 50

Marriage and Family Counseling/Therapy (560009MA) (560009MS)

This course of study leads to licensure as a marriage and family counselor/therapist and to employment in family-based mental health settings. Any changes in the agreed upon program must be approved by the student’s advisor.

- Admissions Requirements
  - 2.75 undergraduate grade point average
  - Statement of good moral character
  - Three letters of reference
  - Departmental supplemental application

Minimum Department Hours Required 35

- Required Counseling Department Courses
  - Professional Orientation (select one course from each area)
    - Seminar in Counseling
    - Elementary/Secondary School Counseling
    - Organization & Administration of Guidance Services
    - Counseling Theory
    - Career Development and Counseling Across the Lifespan

Minimum Foundation Hours Required 9

- Counseling Theory
- Counseling Theory & Philosophy
- Career Development and Counseling Across the Lifespan

Minimum Department Hours Required 35

- Specialized Studies
  - Issues for Sexuality for Counselors
  - Addiction Counseling I: Theory and Assessment

Minimum Total Hours Required for Graduation 50

-**Must be taken during first or second semester.
**Must sign up with Secretary during first semester of enrollment.
‡Must sign up with Internship Coordinator no later than second week of term preceding internship.
*Sign up for Practicum at least one year in advance - space is limited. Sign up with Secretary.
**A minimum of 500 client contact hours must be completed to graduate from the program.
**Minimum of two semesters immediately following 5600:675, register for MFC/T section

School Psychologist* (admissions temporarily suspended)

- College requirements:
  - Techniques of Research
  - Research Project
  - Master’s Problem
  - Master’s Thesis

Departmental requirements:

- Counseling: Theory and Philosophy

Graduate Studies 51
Elementary Education (M.A.) (5200000MA)

This program leading to a Master of Arts in Elementary Education is designed for elementary school teachers. Students complete foundation courses in education and in curriculum and instruction and courses for an area of concentration in literacy education.

Admission Requirements:
Applications to the master’s program in Elementary Education must be completed and submitted at least six weeks (domestic) or six months (international) before the beginning of the term for which admission is sought in order to allow for adequate processing time. Submission of an Application for Admission to a Teacher Education Program is required. Contact the College of Education Office of Student Services at (330) 972-7750.

Degree Requirements:
- Educational Foundations – 9 credits
  - 5100:600 Philosophies of Education
  - 5100:624 Seminar in Educational Psychology
  - 5100:640 Techniques of Research
- Curricular and Instructional – 6 credits
  - 5500:600 Concepts of Curriculum and Instruction
  - 5500:605 Seminar in Trends and Issues in Curriculum and Instruction
  - 5500:606 A course that cuts across curriculum and instruction (as approved by advisor)
- Area of Concentration – 15 credits

The area of concentration may contain advisor approved courses in mathematics, English, foreign language, visual arts, or secondary education provided that the coursework offers a cohesive concentration and contributes to the preparation of an educator at the advanced/master’s-level within curriculum and instruction.

- Master’s Project/Thesis Options - 6 credits
  - Option 1: 5500:690 Master’s Research
  - 5500:760 Action Research
  - Option 2: 5500:696 Master’s Project (with advisor’s permission)
  - 5500:699 Master’s Thesis (with advisor’s permission)
  - Option 3: 5500:699 Master’s Thesis (with advisor’s permission)

- Minimum credit hours required: 36

Curricular and Instructional Studies

Elementary Education with Literacy Option (M.A.) (520101MA)

This program leading to a Master of Arts in Elementary Education is designed for elementary school teachers. Students complete foundation courses in education and in curriculum and instruction and courses for an area of concentration in literacy education.

Admission Requirements:
Applications to the master’s program in Elementary Education with Literacy Option must be completed and submitted at least six weeks (domestic) or six months (international) before the beginning of the term for which admission is sought in order to allow for adequate processing time. Submission of an Application for Admission to a Teacher Education Program is required. Contact the College of Education Office of Student Services at (330) 972-7750.

Degree Requirements:
- Educational Foundations – 9 credits
  - 5100:600 Philosophies of Education
  - 5100:624 Seminar in Educational Psychology
  - 5100:640 Techniques of Research
- Curricular and Instructional Studies – 6 credits
  - 5500:600 Concepts of Curriculum and Instruction
  - 5500:625 Contemporary Issues in Literacy Instruction and Phonics
- Area of Concentration/Reading – 15 credits*
  - 5500:622 Children’s Literature in the Curriculum
  - 5500:627 Special Topics in Curric & Instr Studies: Teaching Young Adult Literature
  - 5500:628 Content Area Literacy
  - 5500:626 Assessment of Reading Difficulties
  - 5500:624 Teaching Reading to Culturally Diverse Learners
  - 5500:627 Special Topics in Curriculum and Instructional Studies
- Master’s Project/Thesis Options - 6 credits
  - Option 1: 5500:690 Master’s Research
  - 5500:760 Action Research
  - Option 2: 5500:696 Master’s Project (with advisor’s permission)
  - Option 3: 5500:699 Master’s Thesis (with advisor’s permission)

* Minimum credit hours required: 36

*If seeking a reading endorsement, a valid teaching license, completion of 18 credit hours in reading, and a passing score on Praxis II: Introduction to the Teaching of Reading (0204) is required.
Elementary Education with Licensure (M.S.)
(520207MS)
(admissions temporarily suspended)

This program is open to highly qualified students who hold the B.A. or B.S. degree in certain fields (see program advisor or department chair). All requirements for certification must be met including the field and clinical/diagnostic experience.

• Educational Foundations – 10 credits:
  5100:600 Philosophies of Education 3
  5100:604 Topical Seminar in the Cultural Foundations of Education 3
  5100:620 Psychology of Instruction for Teaching and Learning 3
  5100:642 Topical Seminar in Measurement and Evaluation 3
  5100:666 Field Experience: Master’s (Section 001) 1

• Curricular and Instructional Studies – 11 credits:
  5500:617 Licensure Seminar in Curricular and Instructional Studies 3
  5500:630 Field Experience (Section 011) 1
  5500:575 Instructional Technology Applications 3
  5500:618 Advanced Instructional Techniques 3
  5500:696 Field Experience (Section 021) 1

• Field Experience (Student Teaching) – 11 credits:
  5600:696 Field Experience: Master’s (Section 005) 5
  5600:696 Field Experience: Master’s (Section 006) 5
  5600:696 Field Experience: Master’s (Section 031) 1
  Total Program: 32 credits

• A minimum of 29 additional undergraduate credits will be required for licensure.

A comprehensive exam is required. See Department of Curricular and Instructional Studies for complete list of requirements.

Secondary Education (M.A.)
(530000MA)

This program leading to a Master of Arts in Secondary Education is designed for secondary school teachers. Students complete foundation courses in education and in curriculum and instruction and courses for an area of concentration such as English, mathematics, or secondary education.

Admission Requirements
Applications to the master’s program in Secondary Education must be completed and submitted at least six weeks (domestic) or six months (international) before the beginning of the term for which admission is sought in order to allow for adequate processing time. Submission of an Application for Admission to a Teacher Education Program is required. Contact the College of Education Office of Student Services at (330) 972-7750.

Degree Requirements
• Educational Foundations – 9 credits:
  5100:600 Philosophies of Education 3
  5100:624 Seminar: Educational Psychology 3
  5100:640 Techniques of Research 3

• Curricular and Instructional Studies – 6 credits:
  5500:600 Concepts of Curriculum and Instruction 3
  5500:625 Contemporary Issues in Literacy Instruction and Phonics 3

• Area of Concentration/Reading – 15 credits*:
  5500:662 Children’s Literature in the Curriculum 3
  5500:667 Special Topics in Curric & Instr Studies: Teaching Young Adult Literature 3
  5500:522 Content Area Literacy 3
  5500:626 Assessment of Reading Difficulties 3
  5500:524 Teaching Reading to Culturally Diverse Learners 3
  5500:627 Special Topics in Curriculum and Instructional Studies 3
  5500:628 Literacy Assessment Practicum 3
  5500:629 Reading Programs in Secondary Schools 3
  5500:630 Advanced Study and Research in Reading Instruction 3
  5500:541 Teaching Language Literacy to Second Language Learners 4
  5500:543 Techniques for Teaching English as a Second Language 4

• Final Research Requirement:
  5500:760 Action Research 3
  5500:690 Master’s Project 3
  5500:699 Master’s Thesis 6
  Minimum credit hours required: 36

*If seeking a reading endorsement, a valid teaching license, completion of 18 credit hours in reading, and a passing score on Praxis II: Introduction to the Teaching of Reading (5220) is required.

Special Education (M.A.)
(561000MAED)

The 30-33 hour graduate program in special education is designed for those individuals who currently hold an undergraduate degree and Intervention Specialist licensure. The program is divided into three options. The first option (Option I) is for individuals seeking only a Masters in Special Education. The second option (Option II) contains coursework providing focus on Pervasive Developmental Disabilities/Autism. The third option (Option III) provides specific coursework designed to focus on providing behavioral support in the school setting. Completion of the Master’s of Arts program does not lead to licensure in special education.

Admission Requirements
Applications to the master’s program in Special Education must be completed and submitted at least six weeks (domestic) or six months (international) before the beginning of the term for which admission is sought in order to allow for adequate processing time.

Degree Requirements
• Educational Foundations core (9 credits):
  5100:600 Philosophies of Education 3
  5100:624 Seminar: Educational Psychology 3
  5100:640 Techniques of Research 3

• Curricular and Instructional Studies/Special Education core: (15 credits)
  5610:604 Collaboration and Consultation Skills for Special Educators 3
  5610:605 Inclusion Models and Strategies 3
  5610:611 Seminar: Legal Issues in Special Education 3
  5610:612 Seminar: Social/Ethical Issues in Special Education 3
  5610:688 Master’s Problem 3

• Option I: Master’s in Special Education (6 credits)
  5610:601 Seminar in Curriculum Planning 3
  5610:602 Supervision in Special Education 3
  Minimum Credit Hours Required 30

• Option II: Master’s with focus on Pervasive Developmental Disabilities/Autism (9 credits):
  5610:607 Characteristics and Needs of Individuals Demonstrating PDD 3
  5610:609 Programming Issue for Individuals with PDD 3
  7700:540 Augmentative Communication 3
  Minimum Credit Hours Required 33
Applications are accepted on a rolling basis.

Master of Science in Curriculum and Instruction (M.S.) with Licensure Options

(For those without a teaching credential or those who seek to add Intervention Specialist)

This program is a Master of Science degree, which leads to licensure in a chosen teaching field and is open to highly qualified students who hold a B.A., B.F.A., or B.S. degree. It is designed to give the student concentrated study in one of the licensure areas listed for high school (grades 7-12), multi-age (grades P-12), vocational, family and consumer science (grades 4-12), or intervention specialist (grades P-3 or K-12).

The University of Akron offers adolescent/young adult licensure (grades 7-12) in the following fields:

- Integrated Social Studies
- Integrated Language Arts
- Life Science
- Earth Science
- Life and Earth Science
- Life Science and Chemistry
- Chemistry
- Physics
- Chemistry and Physics
- Earth Science
- Earth Science and Chemistry
- Earth Science and Physics
- Integrated Mathematics

Specializations for Multi-Age (P-12) licensure include:

- Foreign Languages (French or Spanish)
- Visual Arts
- Drama/Theatre
- Music
- Physical Education

Specializations for Vocational (grades 4-12) licensure include:

- Family and Consumer Science/Home Economics
- Intervention Specialist (Mild/Moderate and Moderate/Intensive) licensure is K-12.

The Early Childhood Intervention Specialist provides licensure for children with disabilities in preschool through grade three. All requirements for licensure must be met. Candidates may need additional subject area coursework to meet ODE licensure requirements, including mandated coursework in reading.

Admission Requirements

Graduate School:

- Completed application for Graduate School
- Students must have an overall 2.75 grade point average to be fully admitted
- Provisional admission may be granted to those students who have a 2.5 to 2.74 grade point average
- College of Education (which must be met by all students):
  - Completed teacher education program application
  - Competency in reading comprehension, writing, and mathematics as evidenced by an earned bachelor’s degree by an accredited university
  - Speech and hearing test
  - Evidence of basic computer literacy
  - Two letters of recommendation
  - BCI (Bureau of Criminal Investigation clearance)

Applications should be made simultaneously. See the Office of Student Services, Zook Hall 207, call (330) 972-7750 or visit the following for more information: http://www.uakron.edu/education/academic-programs/CIS/how-to-apply.dot

Applications are accepted on a rolling basis.

Teacher Education Program

The central theme of The University of Akron’s Teacher Education Program is “Educator as Decision Maker.” This was chosen because the complexity of teaching is increasing and the professional knowledge base is growing. Decision-making is stressed in the standards-based programs that prepare teachers and other school personnel for professional practice. Initial teacher preparation programs are aligned with the Ohio Standards for the Teaching Profession, Specialized Professional Association Standards. Advanced Programs for practicing teachers are aligned with the Ohio Standards for the Teaching Profession. Specific key assessments embedded in coursework must be completed to demonstrate that students meet these standards. For more complete information about the teacher education program please consult the College of Education Office of Student Services at (330) 972-6970.

Program

- Educational Foundations Courses (10 credits):
  - All are required unless waived at the time of admission. Foundation courses may not be used as option or elective courses.
    - 5100:604 Topical Seminar in the Cultural Foundations of Education
    - 5100:620 Psychology of Instruction for Teaching and Learning
    - 5100:642 Introduction to Classroom Assessment for Teacher
    - 5100:695 Field Experience: Master’s (taken in conjunction with 5100:620)

- Option in Adolescent to Young Adult (AYA) Education (grades 7-12): Integrated Social Studies Licensure (530701MSED)

- Educational Foundations Courses (10 credits)
- Curricular and Instructional Studies (20 credits):
  - 5500:575 Instructional Technology Applications
  - 5500:617 Licensure Seminar in Curricular and Instructional Studies (a)
  - 5500:520 Advanced Instructional Techniques (taken in conjunction with 5500:521)
  - 5500:521 Field Experience: Advanced Instructional Techniques
  - 5500:619 Instructional and Management Practices (taken in conjunction with 5500:693-011)
  - 5500:690 Field Experience: Master’s with Licensure (section 011)
  - 5500:629 Reading Programs in Secondary Schools
  - 5500:xxx Elective in curriculum or teaching practices approved by advisor

- Area of Concentration (9):
  - Select 9 credits at 500 level or above.
  - 5500:694 Field Experience: Classroom Instruction (c)
  - 5500:692 Field Experience: Colloquium
  - Minimum credits required for degree: 48

Option in Adolescent to Young Adult (AYA) Education (grades 7-12): Integrated Language Arts Licensure (530702MSED)

- Educational Foundations Courses (10 credits)
- Curricular and Instructional Studies (20 credits):
  - 5500:575 Instructional Technology Applications
  - 5500:617 Licensure Seminar in Curricular and Instructional Studies (a)
  - 5500:520 Advanced Instructional Techniques (taken in conjunction with 5500:521)
  - 5500:521 Field Experience: Advanced Instructional Techniques
  - 5500:619 Instructional and Management Practices (taken in conjunction with 5500:693-011)
  - 5500:690 Field Experience: Master’s with Licensure (section 011)
  - 5500:629 Reading Programs in Secondary Schools
  - 5500:xxx Elective in curriculum or teaching practices approved by advisor

- Area of Concentration (9):
  - Select 9 credits at 500 level or above.
  - 5500:694 Field Experience: Classroom Instruction (c)
  - 5500:692 Field Experience: Colloquium
  - Minimum credits required for degree: 48

Option in Adolescent to Young Adult (AYA) Education (grades 7-12): Integrated Mathematics Licensure (530702MSED)

- Educational Foundations Courses (10 credits)
- Curricular and Instructional Studies (20 credits):
  - 5500:575 Instructional Technology Applications
  - 5500:617 Licensure Seminar in Curricular and Instructional Studies (a)
  - 5500:520 Advanced Instructional Techniques (taken in conjunction with 5500:521)
  - 5500:521 Field Experience: Advanced Instructional Techniques
  - 5500:619 Instructional and Management Practices (taken in conjunction with 5500:693-011)
  - 5500:690 Field Experience: Master’s with Licensure (section 011)
  - 5500:629 Reading Programs in Secondary Schools

- Area of Concentration (9):
  - Select 9 credits at 500 level or above.
  - 5500:694 Field Experience: Classroom Instruction (c)
  - 5500:692 Field Experience: Colloquium
  - Minimum credits required for degree: 48
Option in Adolescent to Young Adult (AYA) Education (grades 7-12): Life Science Licensure (530610MSED)

- Educational Foundations Courses (10 credits)
- Curricular and Instructional Studies (20 credits):
  - Instructional Technology Applications (5 credits)
  - Licensure Seminar in Curricular and Instructional Studies (3 credits)
  - Advanced Instructional Techniques (3 credits)
  - Instructional and Management Practices (3 credits)
  - Field Experience: Master’s with Licensure (1 credit)
  - Reading Programs in Secondary Schools (3 credits)
  - Elective in curriculum or teaching practices approved by advisor (2 credits)

Area of Concentration (9 credits):
- Select 9 credits at 500-level or above.

Field Experience (Student Teaching) (9 credits):
- Field Experience: Classroom Instruction (8 credits)
- Field Experience: Colloquium (1 credit)

Minimum credits required for degree: 48

Option in Adolescent to Young Adult (AYA) Education (grades 7-12): Chemistry Licensure (530613MSED)

- Educational Foundations Courses (10 credits)
- Curricular and Instructional Studies (20 credits):
  - Instructional Technology Applications (3 credits)
  - Licensure Seminar in Curricular and Instructional Studies (3 credits)
  - Advanced Instructional Techniques (3 credits)
  - Instructional and Management Practices (3 credits)
  - Field Experience: Master’s with Licensure (1 credit)
  - Reading Programs in Secondary Schools (3 credits)
  - Elective in curriculum or teaching practices approved by advisor (2 credits)

Area of Concentration (9 credits):
- Select 9 credits at 500-level or above.

Field Experience (Student Teaching) (9 credits):
- Field Experience: Classroom Instruction (8 credits)
- Field Experience: Colloquium (1 credit)

Minimum credits required for degree: 48

Option in Adolescent to Young Adult (AYA) Education (grades 7-12): Physics Licensure (530612MSED)

- Educational Foundations Courses (10 credits)
- Curricular and Instructional Studies (20 credits):
  - Instructional Technology Applications (3 credits)
  - Licensure Seminar in Curricular and Instructional Studies (3 credits)
  - Advanced Instructional Techniques (3 credits)
  - Instructional and Management Practices (3 credits)
  - Field Experience: Master’s with Licensure (1 credit)
  - Reading Programs in Secondary Schools (3 credits)
  - Elective in curriculum or teaching practices approved by advisor (2 credits)

Area of Concentration (9 credits):
- Select 9 credits at 500-level or above.

Field Experience (Student Teaching) (9 credits):
- Field Experience: Classroom Instruction (8 credits)
- Field Experience: Colloquium (1 credit)

Minimum credits required for degree: 48

Option in Adolescent to Young Adult (AYA) Education (grades 7-12): Sciences and Chemistry Licensure (530509MSED)

- Educational Foundations Courses (10 credits)
- Curricular and Instructional Studies (20 credits):
  - Instructional Technology Applications (3 credits)
  - Licensure Seminar in Curricular and Instructional Studies (3 credits)
  - Advanced Instructional Techniques (3 credits)
  - Instructional and Management Practices (3 credits)
  - Field Experience: Master’s with Licensure (1 credit)
  - Reading Programs in Secondary Schools (3 credits)
  - Elective in curriculum or teaching practices approved by advisor (2 credits)

Area of Concentration (9 credits):
- Select 9 credits at 500-level or above.

Field Experience (Student Teaching) (9 credits):
- Field Experience: Classroom Instruction (8 credits)
- Field Experience: Colloquium (1 credit)

Minimum credits required for degree: 48

Option in Adolescent to Young Adult (AYA) Education (grades 7-12): Sciences and Physics Licensure (530507MSED)

- Educational Foundations Courses (10 credits)
- Curricular and Instructional Studies (20 credits):
  - Instructional Technology Applications (3 credits)
  - Licensure Seminar in Curricular and Instructional Studies (3 credits)
  - Advanced Instructional Techniques (3 credits)
  - Instructional and Management Practices (3 credits)
  - Field Experience: Master’s with Licensure (1 credit)
  - Reading Programs in Secondary Schools (3 credits)
  - Elective in curriculum or teaching practices approved by advisor (2 credits)

Area of Concentration (9 credits):
- Select 9 credits at 500-level or above.

Field Experience (Student Teaching) (9 credits):
- Field Experience: Classroom Instruction (8 credits)
- Field Experience: Colloquium (1 credit)

Minimum credits required for degree: 48

Option in Adolescent to Young Adult (AYA) Education (grades 7-12): Chemistry Licensure (530506MSED)

- Educational Foundations Courses (10 credits)
- Curricular and Instructional Studies (20 credits):
  - Instructional Technology Applications (3 credits)
  - Licensure Seminar in Curricular and Instructional Studies (3 credits)
  - Advanced Instructional Techniques (3 credits)
  - Instructional and Management Practices (3 credits)
  - Field Experience: Master’s with Licensure (1 credit)
  - Reading Programs in Secondary Schools (3 credits)
  - Elective in curriculum or teaching practices approved by advisor (2 credits)

Area of Concentration (9 credits):
- Select 9 credits at 500-level or above.

Field Experience (Student Teaching) (9 credits):
- Field Experience: Classroom Instruction (8 credits)
- Field Experience: Colloquium (1 credit)

Minimum credits required for degree: 48

Option in Adolescent to Young Adult (AYA) Education (grades 7-12): Science Licensure (530505MSED)

- Educational Foundations Courses (10 credits)
- Curricular and Instructional Studies (20 credits):
  - Instructional Technology Applications (3 credits)
  - Licensure Seminar in Curricular and Instructional Studies (3 credits)
  - Advanced Instructional Techniques (3 credits)
  - Instructional and Management Practices (3 credits)
  - Field Experience: Master’s with Licensure (1 credit)
  - Reading Programs in Secondary Schools (3 credits)
  - Elective in curriculum or teaching practices approved by advisor (2 credits)

Area of Concentration (9 credits):
- Select 9 credits at 500-level or above.

Field Experience (Student Teaching) (9 credits):
- Field Experience: Classroom Instruction (8 credits)
- Field Experience: Colloquium (1 credit)

Minimum credits required for degree: 48

Option in Adolescent to Young Adult (AYA) Education (grades 7-12): Sciences and Chemistry Licensure (530509MSED)

- Educational Foundations Courses (10 credits)
- Curricular and Instructional Studies (20 credits):
  - Instructional Technology Applications (3 credits)
  - Licensure Seminar in Curricular and Instructional Studies (3 credits)
  - Advanced Instructional Techniques (3 credits)
  - Instructional and Management Practices (3 credits)
  - Field Experience: Master’s with Licensure (1 credit)
  - Reading Programs in Secondary Schools (3 credits)
  - Elective in curriculum or teaching practices approved by advisor (2 credits)

Area of Concentration (9 credits):
- Select 9 credits at 500-level or above.

Field Experience (Student Teaching) (9 credits):
- Field Experience: Classroom Instruction (8 credits)
- Field Experience: Colloquium (1 credit)

Minimum credits required for degree: 48

Option in Adolescent to Young Adult (AYA) Education (grades 7-12): Chemistry Licensure (530506MSED)

- Educational Foundations Courses (10 credits)
- Curricular and Instructional Studies (20 credits):
  - Instructional Technology Applications (3 credits)
  - Licensure Seminar in Curricular and Instructional Studies (3 credits)
  - Advanced Instructional Techniques (3 credits)
  - Instructional and Management Practices (3 credits)
  - Field Experience: Master’s with Licensure (1 credit)
  - Reading Programs in Secondary Schools (3 credits)
  - Elective in curriculum or teaching practices approved by advisor (2 credits)

Area of Concentration (9 credits):
- Select 9 credits at 500-level or above.

Field Experience (Student Teaching) (9 credits):
- Field Experience: Classroom Instruction (8 credits)
- Field Experience: Colloquium (1 credit)

Minimum credits required for degree: 48

Option in Adolescent to Young Adult (AYA) Education (grades 7-12): Physics Licensure (530507MSED)
### Area of Concentration (9):
Select 9 credits at 500-level or above.

### Field Experience (Student Teaching) (9 credits):
- **Curricular and Instructional Studies (20 credits):**
  - **Educational Foundations Courses (10 credits):**
    - Select 3 credits at 500-level or above in teaching field or geology
- **Field Experience (Student Teaching) (9 credits):**
  - **Curricular and Instructional Studies (20 credits):**
    - **Educational Foundations Courses (10 credits):**
      - Select 9 credits at 500-level or above.
    - **Field Experience (Student Teaching) (9 credits):**
      - **Curricular and Instructional Studies (20 credits):**
        - **Educational Foundations Courses (10 credits):**
          - Select 9 credits at 500-level or above.
        - **Field Experience (Student Teaching) (9 credits):**
          - **Curricular and Instructional Studies (20 credits):**
            - **Educational Foundations Courses (10 credits):**
              - Select 9 credits at 500-level or above.
5500:575 Instructional Technology Applications 3
5600:617 Licensure Seminar in Curricular and Instructional Studies (a) 3
5600:619 Instructional and Management Practices (taken in conjunction with 5500:692-011) 3
5600:693 Field Experience: Master’s with Licensure (section 011) 3
5600:556 Literacy for Multilanguage Licensure 3

• Area of Concentration (9):
  5550:547 Instructional Techniques for Children in Physical Education 3
  5550:546 Instructional Techniques for Secondary Physical Education 3
  5550:552 Foundations of Sport Science, Physical and Health Education 3
  5550:550 Organization and Administration of Physical/Health Education, Intramural and Athletics 3

• Electives (6 credits):
  Select six credits in 5550
  or
  5560:600 Concepts of Curriculum and Instruction 3
  5650:605 Seminar in Trends and Issues in Curriculum and Instruction 3

• Field Experience (Student Teaching) (10 credits):
  5550:596 Practicum: Student Teaching 8
  5550:594 Student Teaching Colloquium 2
  Minimum credits required for degree: 48

Option in Career-Technical Education: Family and Consumer Sciences Licensure (Grades 4-12) (530104MSED)

Contact Program Coordinator in Family and Consumer Sciences, Shrank Hall South 215

• Educational Foundations Courses (10 credits)
• Curricular and Instructional Studies (20 credits):
  5650:575 Instructional Technology Applications 3
  5650:617 Licensure Seminar in Curricular and Instructional Studies (a) 3
  5650:619 Instructional and Management Practices (taken in conjunction with 5500:692-011) 3
  5650:693 Field Experience: Master’s with Licensure (section 011) 1
  5650:556 Literacy for Multilanguage Licensure 3
  3400:591 Career-Technical FCS Instructional Strategies (taken in conjunction with 5500:521) 3
  5650:521 Field Experience: Advanced Instructional Techniques 2
  5500:xxx Elective in curriculum or teaching practices approved by advisor 2

• Area of Concentration (9):
  Select 9 credits with advisor approval
  5650:694 Field Experience: Classroom Instruction (c) 8
  5400:598 Student Teaching Seminar 1
  Minimum credits required for degree: 48

Option in Multi-Age (P-12) Education: Drama Licensure (530002MSED)

Contact Program Coordinator in Theatre Arts, Guzzetta Hall 394

• Educational Foundations Courses (10 credits)
• Curricular and Instructional Studies (21 credits):
  5650:575 Instructional Technology Applications 3
  5650:617 Licensure Seminar in Curricular and Instructional Studies (a) 3
  7800:572 Methods of Teaching Elementary Theatre Arts 3
  7800:573 Methods of Teaching Secondary Theatre Arts 3
  5500:619 Instructional and Management Practices (taken in conjunction with 5500:692-011) 3
  5650:693 Field Experience: Master’s with Licensure (section 011) 1
  5650:555 Literacy for Multilanguage Licensure 3
  5500:xxx Elective in curriculum or teaching practices approved by advisor 2

• Area of Concentration (9):
  Select 9 credits with advisor approval
  5650:694 Field Experience: Classroom Instruction (c) 8
  5200:692 Student Teaching Colloquium 1
  Minimum credits required for degree: 49

Option in Special Education: Mild/Moderate Intervention Specialist Licensure (561204MSED)

• Educational Foundations Courses (10 credits)
• Curricular and Instructional Studies (3 credits):
  5500:575 Instructional Technology Applications 3
• Area of Concentration (26 credits):
  5610:535 Licensure Seminar in Curricular and Instructional Studies (a) 3
  5610:604 Collaboration and Consultation 3
  5610:563 Assessment in Special Education 3
  5610:552 Special Education Programming: Secondary/Transition 3
  5610:561 Special Education Programming: Mild/Moderate I 3
  5610:557 Special Education Programming: Mild/Moderate II 4

• Field Experience: Student Teaching and Practicum (14 credits) or Master’s Project and Practicum (6 credits):
  5610:690 Student Teaching: Special Education 11
  5610:570 Practicum 3
  or
  5610:694 Master’s Project 3
  5610:570 Practicum 3
  Minimum credits required for degree (d): 46-54

Option in Special Education: Moderate/Intensive Intervention Specialist Licensure (561205MSED)

• Educational Foundations Courses (10 credits)
• Curricular and Instructional Studies (3 credits):
  5500:575 Instructional Technology Applications 3
• Area of Concentration (27 credits):
  5610:540 Individuals with Exceptionalities: Educational and Societal Issues 3
  5610:548 Developmental Characteristics of Moderate/Intensive Educational Needs 4
  5610:567 Management Strategies 3
  5610:604 Collaboration and Consultation Skills for Special Educators 3
  5610:565 Assessment in Special Education 3
  5610:552 Special Education Programming: Secondary/Transition 3
  5610:553 Special Education Programming: Moderate/Intensive I 4
  5610:554 Special Education Programming: Moderate/Intensive II 4

• Field Experience: Student Teaching and Practicum (14 credits) or Master’s Project and Practicum (6 credits):
  5610:690 Student Teaching: Special Education 11
  5610:570 Practicum 3
  or
  5610:694 Master’s Project 3
  5610:570 Practicum 3
  Minimum credits required for degree (d): 46-54

Option in Special Education: Early Childhood Intervention Specialist Licensure (561206MSED)

• Educational Foundations Courses (10 credits)
• Curricular and Instructional Studies (3 credits):
  5500:575 Instructional Technology Applications 3
• Area of Concentration (26 credits):
  5610:540 Individuals with Exceptionalities: Educational and Societal Issues 3
  5610:548 Developmental Characteristics of Moderate/Intensive Educational Needs 4
  5610:567 Management Strategies 3
  5610:604 Collaboration and Consultation Skills for Special Educators 3
  5610:564 Assessment and Evaluation in Early Childhood Special Education 3
  5610:550 Special Education Programming: Early Childhood Special Education 3
  5610:553 Special Education Programming: Moderate/Intensive I 4
  5610:551 Special Education Programming: Early Childhood Moderate/Intensive 3

• Field Experience: Student Teaching and Practicum (14 credits) or Master’s Project and Practicum (6 credits):
  5610:690 Student Teaching: Special Education 11
  5610:570 Practicum 3
  or
  5610:694 Master’s Project 3
  5610:570 Practicum 3
  Minimum credits required for degree (d): 45-53

(a) Prerequisite: Admission to the Master’s with Licensure program and teacher education program
(b) Prerequisite: Admission to the Master’s with Licensure program and teacher education program and 5500:817
(c) Prerequisite: Approval of Student Teaching Committee, considered based upon approved application to student teaching, passing PRAXIS II subject test, and approved portfolio
(d) If content courses are waived the program will be no less than 45-46 credit hours depending on option

Teaching Field Requirements

Candidates in the Master’s with Licensure program must also meet teaching field requirements as established by departmental faculty and approved by the appropriate specialized professional associations and the Ohio Board of Regents. For additional information about specific program requirements please consult the Office of Student Services at (330) 972-7750.

Student Portfolio

Students admitted to their selected College of Education program and beginning their professional education coursework Fall 2005 and thereafter will complete a
student portfolio. Specific key assessments for the portfolio are often completed as part of a course, clinical experience, or field experience, and must be judged acceptable by the instructor before credit is awarded for the experience connected to that particular portfolio entry. The portfolio must also be submitted for acceptance before student teaching and again prior to program completion.

Clinical and Field-Based Experiences

All teacher education candidates, including those in the master’s with licensure programs, are required to participate satisfactorily in clinical and field-based experiences prior to recommendation for licensure. These integrated and developmental clinical and field-based experiences are designed to provide teacher education students with opportunities to apply theory and skills related to their areas of licensure. Field-based experiences are planned in diverse settings and provide comprehensive early and ongoing field-based opportunities in which candidates may observe, assist, tutor, instruct, and/or conduct research. Field experiences may occur in off-campus settings such as schools, community centers, or homeless shelters.

Student teaching is a full-time opportunity that provides candidates with an intensive and extensive culminating clinical experience in an approved public or private school for either twelve weeks (adolescent to young adult) or sixteen weeks (intervention specialist, multi-age, or vocational family and consumer science licensure). Candidates are immersed in the learning community and are provided opportunities to develop and demonstrate competence in the professional roles for which they are preparing. Placements are made in appropriate sites at the discretion of the Extended Educational Experiences Office in consultation with program faculty and district leaders. All students must have approval of the Student Teaching Committee to be placed for student teaching. Committee approval requires that the student submit an approved application for student teaching, evidence of a passing score or scores on the appropriate PPRAXIS II subject area test or tests, and evidence of approval of his/her portfolio.

Educational Foundations and Leadership

Educational Administration

The Department of Educational Foundations and Leadership offers a master’s degree program in general administration which is not directed toward a particular administrative license. With the help of an advisor and approval of the Graduate School, courses may be substituted and/or waived to create specialized options. Requirements of the standard program and examples of two such specialized programs are listed below:

General Administration (Standard Program) (570100MA) (570100MS)

(Admissions to General Administration currently suspended)

• Foundation – 12 credits:
  5100:600 Philosophies of Education 3
  5100:604 Topical Seminar in the Cultural Foundations of Education 3
  5100:620 School Culture and Governance 3
  5100:624 Seminar: Educational Psychology 3
  5100:636 Topical Seminar in Educational Technology 3
  5100:640 Techniques of Research 3

• Educational Administration – 15:
  5170:601 Organizational Leadership 3
  5170:604 School Community Relations 3
  5170:606 Evaluation in Educational Organizations 3
  5170:607 School Law 3
  5170:613 Student Services and Interagency Collaboration 3

• Curriculum and Supervision – 6:
  5170:609 Principles of Curriculum Development 3
  5170:610 Supervision of Instruction 3

Total: 33 credits

The student will be required to pass a portfolio assessment by a three-member full-time faculty panel in order to qualify for graduation.

The Principalship (570104MA) (570104MS)

The Department of Educational Foundations and Leadership offers a 30 hour Master’s Degree Program in the Principalship. With the help of an advisor and approval of the Graduate School, courses may be substituted and/or waived to create specialized options. Requirements of the Principalship Master’s Degree Program in Educational Administration are listed below.

Admission Requirements:

No supplemental materials in addition to submission of the graduate application and official transcripts are required for admission. Applications to the master’s program in Principalship must be completed and submitted at least six weeks (domestic) or six months (international) before the beginning of the term for which admission is sought in order to allow for adequate processing time.

Degree Requirements:

• Foundation Studies (9)
  5100:600 Philosophies of Education 3
  5100:604 Cultural Foundations of Education 3
  5100:624 Educational Psychology 3
  5100:640 Techniques of Research 3

• Educational Leadership Core (21)
  5170:601 Organizational Leadership 3
  5170:604 School Contexts and Community Involvement 3
  5170:607 School Law 3
  5170:610 Supervision of Instruction 3
  5170:620 School Culture and Governance 3
  5170:615 Student Services and Disability Law 3
  5170:720 Seminar: Capstone 3

Total: 30 credits

The Principalship Licensure Program is an option in educational administration designed to prepare a candidate for an Ohio license to practice as a school principal and is built on two components: the Principalship master’s degree and those post-master’s courses listed below.

The Principalship master’s degree program and the post-master’s licensure courses have been aligned with the Educational Leadership Constituents Council (ELCC) standards specific key assessments embedded in coursework and must be completed to demonstrate that students meet these standards.

Post-Master’s Licensure Courses – 12 credits:

  5170:602 Management of Physical Resources 3
  5170:603 Management of Human Resources 3
  5170:695/696 Principal Internship 3 credits each

To obtain a license to practice the work of a school principal through the College of Education, the candidate will have a total of 42 post-baccalaureate hours, a master’s degree, completion of a supervised two semester internship in the area in which the candidate seeks the license, successful passage of the state licensing examination, and completion of a statement of good moral character.

Administrative Specialists (570006MA) (570006MS)

The Department of Educational Foundations and Leadership offers programs leading to Educational Administrative Specialist licenses granted by the Ohio Department of Education.

Each of these specialist licensure programs consists of a general administration master’s degree and a post-master’s block of required courses.

Administrative Specialist: Educational Research (Admissions to Educational Research currently suspended)

• Foundation Studies – 18 credits:
  5100:600 Philosophies of Education 3
  5100:604 Topical Seminar in the Cultural Foundations of Education 3
  5100:620 School Culture and Governance 3
  5100:624 Seminar: Educational Psychology 3
  5100:636 Topical Seminar in Educational Technology 3
  5100:640 Techniques of Research 3
  5100:642 Topical Seminar in Measurement and Evaluation 3
  5100:741 Statistics in Education 3

• Educational Administration – 15 credits:
  5170:601 Organizational Leadership 3
  5170:604 School Community Relations 3
  5170:606 Evaluation in Educational Organizations 3
  5170:607 School Law 3
  5170:608 School Finance and Economics 3

• Post-Master’s Requirements – 16 credits:
  5170:704 Advanced Organizational Leadership 3
  5170:707 The Superintendent 3
  5170:783 Advanced Educational Statistics 3
  5170:795/6 Internship* 4
  5170:801 Research Seminar 3

*Students admitted to Educational Administration Internship Coursework following Spring of 2004 will be required to pass the state licensure exam prior to enrollment in 5170:795/6.

Administrative Specialist: Educational Staff Personnel Administration (Admissions to Educational Staff Personnel Administration currently suspended)

• Foundation Studies – 12 credits:
  5100:600 Philosophies of Education 3
  5100:604 Topical Seminar in the Cultural Foundations of Education 3
  5100:620 School Culture and Governance 3
  5100:624 Seminar: Educational Psychology 3
### Administrative Specialist: Instructional Services (Curriculum, Instruction, and Professional Development) (Admissions to Instructional Services currently suspended)

- **Foundation Studies** – 12 credits:
  - 5100:600 Philosophies of Education 3
  - 5100:604 Topical Seminar in the Cultural Foundations of Education 3
  - 5100:620 School Culture and Governance 3
  - 5100:624 Seminar: Educational Psychology 3
  - 5100:636 Topical Seminar in Educational Technology 3
  - 5100:640 Techniques of Research 3

- **Educational Administration** – 21 credits:
  - 5170:601 Organizational Leadership 3
  - 5170:603 Management of Human Resources 3
  - 5170:604 School-Community Relations 3
  - 5170:606 Evaluation in Educational Organizations 3
  - 5170:607 School Law 3
  - 5170:608 School Finance and Economics 3
  - 5170:610 Internship* 3

- **Post-Master’s Requirements** – 14 credits:
  - 5170:704 Advanced Organizational Leadership 3
  - 5170:706 Decision Making in Educational Administration 3
  - 5170:707 The Superintendentcy 3
  - 5170:795/6 Internship* 4
  - 6500:694 Industrial Relations 3

*Students admitted to Educational Administration Internship Coursework following Spring of 2004 will be required to pass the state licensure exam prior to enrollment in 5170:795/796.

### Administrative Specialist: Pupil Personnel Administration (Admissions to Pupil Personnel Administration currently suspended)

- **Foundation Studies** – 12 credits:
  - 5100:600 Philosophies of Education 3
  - 5100:604 Topical Seminar in the Cultural Foundations of Education 3
  - 5100:620 School Culture and Governance 3
  - 5100:624 Seminar: Educational Psychology 3
  - 5100:636 Topical Seminar in Educational Technology 3
  - 5100:640 Techniques of Research 3

- **Educational Administration** – 21 credits:
  - 5170:601 Organizational Leadership 3
  - 5170:603 Management of Human Resources 3
  - 5170:604 School-Community Relations 3
  - 5170:606 Evaluation in Educational Organizations 3
  - 5170:607 School Law 3
  - 5170:608 School Finance and Economics 3
  - 5170:707 The Superintendentcy 3

- **Post-Master’s Requirements** – 13 credits:
  - 5170:609 Principles of Curriculum Development 3
  - 5170:610 Supervision of Instruction 3
  - 5170:613 Student Services and Interagency Collaboration 3
  - 5170:795/6 Internship* 4

*Students admitted to Educational Administration Internship Coursework following Spring of 2004 will be required to pass the state licensure exam prior to enrollment in 5170:795/796.

### Administrative Specialist: School and Community Relations (Admissions to School and Community Relations currently suspended)

- **Foundation Studies** – 12 credits:
  - 5100:600 Philosophies of Education 3
  - 5100:604 Topical Seminar in the Cultural Foundations of Education 3
  - 5100:620 Psychology of Instruction for Teaching and Learning 3
  - 5100:624 Seminar: Educational Psychology 3
  - 5100:636 Topical Seminar in Educational Technology 3
  - 5100:640 Techniques of Research 3

- **Educational Administration** – 21 credits:
  - 5170:601 Organizational Leadership 3
  - 5170:603 Management of Human Resources 3
  - 5170:606 Evaluation in Educational Organizations 3
  - 5170:607 School Law 3
  - 5170:608 School Finance and Economics 3
  - 5170:620 The Principalship 3
  - 5170:707 The Superintendentcy 3

- **Post-Master’s Requirements** – 16 credits:
  - 5170:604 School-Community Relations 3
  - 5170:704 Advanced Organizational Leadership 3
  - 7600:625 Theories of Mass Communication 3
  - 7600:628 Contemporary Public Relations Theory 3
  - 5170:795/6 Internship* 4

*Students admitted to Educational Administration Internship Coursework following Spring of 2004 will be required to pass the state licensure exam prior to enrollment in 5170:795/796.

### Superintendent Program (570103MA) (570103MS) (Admissions to the Superintendent Program currently suspended)

The Department of Educational Foundations and Leadership offers a Superintendent License-only program. The license builds from the Principalship Master's Degree and the Principalship Licensure programs. Requirements for the Superintendent License are listed below.

- **Foundation Studies** – 12 credits:
  - 5100:600 Philosophies of Education 3
  - 5100:604 Topical Seminar in the Cultural Foundations of Education 3
  - 5100:620 School Culture and Governance 3
  - 5100:624 Seminar: Educational Psychology 3
  - 5100:636 Topical Seminar in Educational Technology 3
  - 5100:640 Techniques of Research 3

- **Educational Administration** – 21 credits:
  - 5170:601 Organizational Leadership 3
  - 5170:603 Management of Human Resources 3
  - 5170:604 School-Community Relations 3
  - 5170:606 Evaluation in Educational Organizations 3
  - 5170:607 School Law 3
  - 5170:608 School Finance and Economics 3
  - 5170:707 The Superintendentcy 3

- **Post-Master’s Requirements** – 13 credits:
  - 5170:609 Principles of Curriculum Development 3
  - 5170:610 Supervision of Instruction 3
  - 5170:613 Student Services and Interagency Collaboration 3

*Students admitted to Educational Administration Internship Coursework following Spring of 2004 will be required to pass the state licensure exam prior to enrollment in 5170:795/796.

### Higher Education Administration (570102MA) (570102MS)

All applicants to the program should have previously earned a bachelor’s degree. Special admission for concurrent studies toward a master’s degree and the higher education certificate may be allowed for persons currently employed in higher education.

#### Admission Requirements

Persons wishing to pursue a master’s degree in Educational Administration-Higher Education Option must apply to the Graduate School for admission to the program. In addition to the completed application to the Graduate School, applicants should have a minimum 2.75 GPA, completion of the Graduate Record Exam within the past five years, and a Declaration of Intent that includes a statement of professional goals and reasons for choosing the field of higher education administration and The University of Akron. Applications are accepted on a rolling basis.

#### Degree Requirements

- **Foundation courses (6 credits):**
  - 5100:640 Techniques of Research 3
  - 5190:615 Historical Foundations of American Higher Education 3

- **Required courses (30 credits):**
  - 5190:515 Administration in Higher Education 3
  - 5190:521 Law and Higher Education 3
  - 5190:526 Student Services and Higher Education 3
  - 5190:527 The American College Student 3
  - 5190:530 Higher Education Curriculum and Program Planning 3
  - 5190:600 Advanced Administrative Colloquium in Higher Education 3
  - 5190:601 Internship in Higher Education 2
  - 5190:602 Internship in Higher Education Seminar 1
  - 5190:610 Diversity Issues in Higher Education 3
  - 5190:620 Finance and Higher Education 3
  - 5190:628 Policy, Assessment, and Accountability in Higher Education 3

Total Hours Required: 36

- **Electives (9 to 12 credits):**
  - 5190:525 Topical Seminar 3
Students must successfully complete a master’s comprehensive examination for the Educational Administration-Higher Education Option.

Educational Foundations (M.A.)

Specialized Options:
- Instructional Technology
- Educational Psychology (admissions suspended)
- Social/Philosophical Foundations of Education
- Assessment and Evaluation

This Master’s degree program area is designed for either the student interested in improving present educational skills or the student interested in educational or instructional positions in business, industry, and social services. The student’s program of study will be determined jointly by the student and advisor. The program consists of:

- College Core Foundation Studies (nine credits)
- Program Requirements for the specialization selected above (minimum of 15 credits)
- Outside Department (minimum of six credits except for Instructional Technology option)
- Master’s Comprehensive Examination (electronic portfolio for Instructional Technology and Assessment and Evaluation)
- Election of master’s thesis (5100:699), or master’s problem (5100:698), or an additional six semester credits of coursework. Students choosing to do a master’s thesis or master’s problem require 30 semester credits to graduate. Students choosing to do only coursework require 36 semester credits to graduate (except for Assessment and Evaluation which requires 30 semester credits to graduate).

Admission Requirements

No supplemental materials in addition to submission of the graduate application and official transcripts are required for admission to the specialized options in Educational Foundations. Applications are accepted on a rolling basis.

Instructional Technology Option (30 credits) (510001MA)

The graduate program in Educational Foundations emphasizing Instructional Technology has been designed to assist its students in becoming competent, employable professionals, capable of making a significant contribution to the field. The graduate curriculum of 30 semester hours provides students with exposure to a wide range of emerging technologies, while still ensuring the basic competencies required of all practitioners. The program directly addresses the rapidly accelerating changes in the field of interactive and Web 2.0 technologies while being rooted in instructional design principles. The focus is on K-12 educators working in the field or recent graduates. Students are required to complete an ePortfolio demonstrating their application of instructional technology in the field as well as their expertise in their graduate classes. The program is offered in a blended format with some classes fully online and some a combination of face-to-face and online.

Master’s degree graduates of the Instructional Technology program have found employment as technology facilitators and coaches in school districts, technology resource personnel in K-16 educational institutions, training specialists and instructional designers in business, education and government, as well as multimedia developers and specialists. An endorsement for K-12 teachers in Technology Facilitation is available and is embedded into the coursework of this graduate degree program.

- Foundation Studies (9 credits)
  5100:600 Philosophies of Education 3
  5100:604 Cultural Foundations of Education 3
  5100:624 Educational Psychology 3
  5100:640 Techniques of Research 3
- Required Core Courses (15 credits)
  5150:610 Introduction to Instructional Technology 3
  5150:631 Instructional Design 3
  5150:615 Planning for Technology 3
  5150:633 Multimedia/Hypermedia 3
  5150:638 Integrating and Implementing Technology 3
- Electives (choose 6 credits)
  5100:690, 591 Workshop: Instructional Technology (permission) 1-3
  5150:632 Web-Based Learning Systems 3
  5150:639 Strategies for Online Teaching and Learning 3
  5150:635 Emerging Technologies in Instruction 3
  5150:698 Master’s Technology Project 3

Technology Facilitation Endorsement (K-12 Computer Technology Endorsement)

The Graduate K-12 Computer Technology (Technology Facilitation Endorsement) intended for teachers who wish to serve as a technology integration facilitator or technology coach for colleagues in their schools and districts.

The endorsement is obtained through an application process to the Ohio Department of Education and upon approval will be added to your teaching license.

This endorsement is only available to individuals who currently have or who are simultaneously getting an initial Ohio license/certificate e.g. in Early Childhood, Middle Level Science, Adolescent/Young Adult Social Studies, etc. This endorsement can be completed with a master’s degree in Instructional Technology in the Department of Educational Foundations and Leadership (330-927-7773). Individual school districts, not the State of Ohio or The University of Akron, determine the extent to which the endorsement is applicable to their needs and requirements.

There is only one Computer Technology endorsement offered within the IT masters degree program. It is named the Graduate K-12 Computer Technology Endorsement. Specific key assessments in coursework must be completed to demonstrate that students meet these standards. This endorsement follows the ISTE TF standards for Technology Facilitation. This endorsement is designed to prepare teachers to be effective users of technology in teaching practice of their colleagues at building and district levels. It is not intended to develop skills in computer repair, network maintenance or computer programming languages.

- Foundation Studies (9 credits)
  5100:600 Philosophies of Education 3
  5100:604 Topical Seminar in the Cultural Foundations of Education 3
  5100:620 Psychology of Instruction for Teaching and Learning 3
  5100:624 Seminar: Educational Psychology 3
  5100:640 Techniques of Research 3
- Electives (15-21 hours)
  5100:624 Seminar: Educational Psychology 3
  5100:634 Field Experience: Master’s 3
  5100:721 Learning Processes 3
  5100:723 Teacher Behavior and Instruction 3
  5100:798 Master’s Problem 3
  5100:899 Master’s Thesis 4-6
- Outside Department Requirements (6 hours)
  5610:540 Developmental Characteristics of Exceptional Individuals 3
  5500:780 Seminar in Curricular and Instructional Studies (Cooperative Learning) 3

Social/Philosophical Foundations of Education Option (30 credits) (510003MA)

This interdisciplinary graduate program is designed to facilitate professional educators’ developing critical, interpretative, and normative perspectives of the interrelations between educational institutions and society. This program includes the academic disciplines of anthropology of education, comparative/international education, cultural studies in education, history of education, sociology of education, and sociology of education. Students collaborate with their advisors in selecting one or more of the above disciplines to create a graduate program tailored to their needs, interests, and professional aspirations. Students may be either encouraged or required to study with faculty in other departments or institutions to develop interdisciplinary programs and perspectives.

Graduates of the program can earn a Master of Arts in Education degree in preparation for careers in both traditional and non-traditional educational settings and for further doctoral study in anthropology of education, comparative/international education, cultural studies in education, history of education, philosophy of education, and sociology of education. Graduates are more employable in positions that require in-depth understanding of the broader social contexts of educational policy.

- Foundation Studies (9 credits)
  5100:600 Philosophies of Education 3
  5100:624 Seminar: Educational Psychology 3
  5100:640 Techniques of Research 3

The University of Akron 2011-2012
Professional Technical Education Courses – 27 credits:
5100:602 Comparative and International Education 3
5100:604 Topical Seminar in the Cultural Foundations of Education 3
5100:705 Seminar: Social-Philosophical Foundations of Education 3
5100:699 Master’s Thesis 6

Program Electives (6 credits):
5100:697 Independent Study 3
5100:701 History of Education in American Society 3
Electives should be decided in consultation with the adviser. Up to six credits of coursework outside of the college can be taken with approval of the adviser.

Assessment and Evaluation Option (30 credits) (510004MA)

The program in Educational Foundations emphasizing Assessment and Evaluation prepares teachers and other educators to be leaders in the area of school-based assessment and evaluation. Students in the program will develop skills in assessing a variety of student outcomes and in conducting classroom, school or building-level, and district-level evaluations.

Foundation Studies (9 credits)
5100:600 Philosophies of Education 3
5100:624 Seminar: Educational Psychology 3
5100:640 Techniques of Research 3

Required Courses (21 hours)
5100:642 Introduction to Classroom Assessment 3
5100:650 Implementing Assessment Techniques in the Classroom (Note: 62 is a prerequisite to 650) 3
5100:651 Data-Driven Decision Making for Educators 3
5100:652 Introduction to Educational Evaluation 3
5100:653 Practical Applications of Educational Evaluation 3
5100:654 Master’s Project in Assessment and Evaluation: Part 1 3
5100:655 Master’s Project in Assessment and Evaluation: Part 2 3

30 total hours are required.

A portfolio is required.

Postsecondary Technical Education

The major objective of the postsecondary technical education program is to prepare the instructor and other educational personnel for postsecondary educational institutions, industry, and public and private agencies engaged in the education and training of technicians and middle-level workers. All courses are also available fully online.

Admission Requirements

The Department of Educational Foundations and Leadership requires no supplemental materials in addition to submission of the graduate application and official transcripts for admission to the master’s degree program in Postsecondary Technical Education. Applications are accepted on a rolling basis.

Program for those with a B.S. in Technical Education (540000MSTE)

Foundation Studies – 9 credits:
5100:601 Topical Seminar in Cultural Foundations 3
5100:640 Techniques of Research 3
5400:580 Diverse Postsecondary Learners 3

Professional Technical Education Courses – 21 credits:
5150:639 Strategies for Online Teaching and Learning 3
5400:600 The Two-Year College 3
5400:605 Advanced System Design: Needs Assessment and Evaluation 3
5400:620 Postsecondary Teacher Leadership 3
5400:660 Postsecondary Distance Learning 3
5400:698 Master’s Problem 6
or
5400:699 Master’s Thesis 6
Total: 30 credits

Program for those without a B.S. in Technical Education (540020MSTE)

Foundation Studies – 9 credits:
5100:640 Techniques of Research 3
5400:500 The Postsecondary Learner 3
5400:580 Diverse Postsecondary Learners 3
or
5100:710 Adult Learning, Development, and Motivation 3

Professional Technical Education Courses – 27 credits:
5150:639 Strategies for Online Learning 3
5400:505 Workplace Education for Youth and Adults 3
or
5400:515 Training in Business and Industry 3
or
5400:600 The Two-Year College 3
5400:520 Postsecondary Instructional Technology 3
5400:530 Systematic Curriculum Design for Postsecondary Instruction 3
5400:535 Systematic Instructional Design in Postsecondary Education 3
5400:605 Advanced System Design: Needs Assessment and Evaluation 3
or
5100:697 Independent Study 3
5100:701 History of Education in American Society 3

Total: 36 credits

Sport Science and Wellness Education

The student who expects to earn a master’s degree in the Department of Sport Science and Wellness Education is expected to meet the criteria for admission of the Graduate School. Applications for all master’s degree programs in the Department of Sport Science and Wellness Education must be completed and submitted at least six weeks (domestic) or six months (international) before the beginning of the term for which admission is sought in order to allow for adequate processing time.

Outdoor Education (556000MA) (556000MS)

(Amissions to Outdoor Education currently suspended)

The outdoor education program, requiring 32 credits, is designed for those students having an undergraduate background in elementary or secondary education, biology, environmental studies, health, physical education or recreation. Students may become involved with existing outdoor education programs in the public schools, metropolitan, state and national park programs, or private and public agencies which conduct outdoor/environmental education programs.

Foundation Studies – nine credits.

Required Foundation Courses:
5100:640 Techniques of Research 3
Remaining six (6) credits to be chosen, with approval of advisor, from 5100:6xx or 5100:6xx course offerings or 5550:606 Statistics: Qualitative and Quantitative Methods.

Required courses:
5560:550 Application of Outdoor Education to the School Curriculum 4
5560:552 Resources and Resource Management for the Teaching of Outdoor Education 4
5560:556 Outdoor Pursuits 4
or
5560:605 Outdoor Education: Special Topics 2-4
5560:606 Outdoor Education: Rural Influences 3
5560:695 Field Experience (at least 2 credits if only option selected) 2-6
or
5560:698 Master’s Problem 2-4
or
5560:699 Master’s Thesis 4-6

With the approval of the advisor, the student will select additional courses and/or workshops related to the graduate program.

Physical Education

Physical Education Option (555000MA) (555000MS)

(Amissions to the Physical Education option are currently suspended)

The graduate program in physical education, requiring 32 credits, is designed for post-baccalaureate and in-service physical educators. Training received in this program comes from two (2) areas: the foundations (6 cr.) and the program studies area of physical education (25 cr.). The emphasis in this curriculum is to provide answers to the questions “what I can learn about teaching and what decisions do I face as a professional educator?” Students will be assigned an advisor with whom they should consult on a regular basis. In fact, advisor approval is required on certain course work.

Required Foundation Courses:
5100:600 Philosophies of Education 3
or
5100:604 Topical Seminar in the Cultural Foundations of Education 3
or
5100:620 Psychology of Instruction for Teaching and Learning 3
or
5100:624 Seminar: Educational Psychology 3
or
5100:640 Techniques of Research 3
Subtotal: 6

Required Department Courses:
5550:536 Foundations and Elements of Adapted Physical Education 3
5550:601 Sports Administration and Supervision 3
5550:602 Motor Behavior Applied to Sports 3
or
5550:604 Current Issues in Physical Education 3
5550:603 Tactics and Strategies in the Science of Coaching 3
5550:605 Physiology of Muscular Activity and Exercise 3
5550:606 Statistics: Qualitative and Quantitative Methods 3
5550:609 Motivational Aspects of Physical Activity 3
5570:521 Comprehensive School Health 4

Graduate Studies 61
Exercise Physiology/Adult Fitness Option (555003MA) (555003MS)

This graduate program, requiring a minimum of 34 credits, is designed to prepare students for advanced study in exercise physiology and future employment in adult fitness, corporate fitness and cardiac rehabilitation programs. Special attention is also given to knowledge and practical skills necessary for students preparing for American College of Sports Medicine certifications.

Admission Requirements

In addition to the graduate application and official transcripts applicants must submit a statement of purpose and three letters of recommendation. Applications to the master’s program in Exercise Physiology/Adult Fitness must be completed and submitted at least six weeks (domestic) or six months (international) before the beginning of the term for which admission is sought in order to allow for adequate processing time.

Degree Requirements

- Required Foundation Courses (6 credits):
  - 5550:695 Field Experience: Master’s 2
- Required Department Courses (22 credits):
  - 5550:600 Biomechanics Applied to Sports and Physical Activity 4
  - 5100:610 Introduction to Statistics in Human Services 3
- Required Clinical Experience (2 credits minimum):
  - 5550:696 Field Experience: Master’s 2
- Electives (3 credit minimum) - select at least one course from the list below
  - 5570:520 Community Health 2
  - 5550:600 Biomechanics Applied to Sports and Physical Activity 4
  - 5100:604 Current Issues in Sport and Physical Education 3

Total Program 35

Sport Science/Coaching Option (555109MA) (555109MS)

This sport science program option has been designed to meet the needs of individuals interested in advanced training to prepare for a career in the sport industry. Students are prepared to pursue career opportunities in high school, college and recreational sport, coaching and instruction. Additionally, students pursue opportunities related to a career in high school, college or professional sport administration or continue a career in teaching and coaching at the secondary level.

Admission Requirements

In addition to the graduate application and official transcripts applicants must submit a statement of purpose and three letters of recommendation. Applications to the master’s program in Sport Science/Coaching must be completed and submitted at least six weeks (domestic) or six months (international) before the beginning of the term for which admission is sought in order to allow for adequate processing time.

Degree Requirements

- Required Foundation Courses (6 credits)
  - 5550:604 Current Issues in Sport and Physical Education 3
- Required Clinical Experience (2 credits minimum)
  - 5550:695 Field Experience: Master’s 2
- Electives (3 credit minimum) - select at least one course from the list below
  - 5570:520 Community Health 2

Total Program 33

School Nurse License Program

(Admission to School Nurse License Program currently suspended)

Admission Requirements—Sequence 2

- R.N. License
- B.S.N. Degree
- Admittance to Graduate School
- Admittance to College of Education (Graduate Studies)
- Admittance to College of Nursing (Special/Non-Degree status)
- Selected coursework in College of Education and College of Nursing
- Supervised School Nurse experience
- Course work distributed over the following areas:
  - Community health; family counseling; mental and emotional health, current topics in health education; methods of teaching/instructional design; learner and learning process; evaluation and measurement of learning; principles, comprehensive school health; advanced pediatric/adolescent assessment; advanced nursing research.

To satisfy the above requirements, an applicant must complete at least the following 12 graduate credits or their equivalents of College of Education core courses listed below:

- 5570:520 Community Health 2
- 5570:521 Comprehensive School Health 4
- 5570:523 Methods and Materials of Teaching Health Education 3
- 5100:742 Statistics in Education 3

Subtotal 12

Applicant must also complete 11-16 graduate credits of College of Nursing courses listed below:

- 8200:650 Advanced Pediatric/Adolescent Assessment 3
- 8200:613 Nursing Inquiry I 3
- 8200:553 School Nurse Practicum I 5
- 8200:554 School Nurse Practicum II (required of all school nursing students) 5

Subtotal 11-16

Optional if continuing on to a master’s degree in the College of Nursing:

- 8200:688 Pathophysiological Concepts 3
- 8200:696 Pharmacology for Child and Adolescent Health 3

Total graduate credits for licensure 23-28
Admission Requirements—Sequence 3

• Admittance to the College of Nursing MSN Program—Child and Adolescent Track
• Admittance to College of Education (Special/Non-Degree status)
• Completion of the MSN Program in the Child and Adolescent Track
• Plus 12 graduate credits of College of Education core courses:
  5570:520 Community Health 2
  5570:521 Comprehensive School Health 4
  5570:523 Methods and Materials of Teaching Health Education 3
  Elective within College of Education (upon approval of College of Education school nurse licensing advisor) 3
  Total 12

Master's degree plus licensure.

*The school nurse practicum is contained in the MSN program in 8200:651 and 655 which fulfill the requirements of 8200:553 and 554.

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College of Business Administration

Ravi Krovi, Ph.D., Dean
James J. Divoky, D.B.A., Associate Dean and
Susan C. Hanlon, D.B.A., Interim Assistant Dean and
Director of Graduate Programs

Mission Statement

The MBA program is the principle graduate program of The University of Akron’s College of Business Administration. The objective of the MBA program is to provide a diverse group of men and women with the skills, multi-stakeholder strategic perspective, and innovative spirit required to lead in organizations that operate within a global business environment characterized by intense competition and increasing levels of complexity and uncertainty. Graduates of The University of Akron’s MBA program should possess:

- The analytical and conceptual skills needed to identify and cope successfully with ambiguous and unstructured business problems;
- A solid foundation in relevant business functions, with emphasis on the integration of the functions and an understanding of how multiple business functions are linked in the formulation and execution of business strategy;
- A strong ethical perspective, an appreciation of workplace and marketplace diversity, and an ability to communicate in an effective, persuasive manner;
- An understanding of the legal, political, regulatory, economic and technological environment; and,
- An awareness of the global economy within which businesses operate and an understanding of the forces that drive competition and sustainability within the global economy.

In order to accomplish these goals, the graduate faculty of the College of Business Administration is committed to providing a high quality graduate business school experience. That experience will have a strong professional and real-world focus, characterized by collaborative work and emphasis on the practice of management. The faculty is intent on creating a stimulating academic environment with a balance between theory and application. Faculty strive to create a classroom setting that is varied, interesting, and permeated by the concepts of globalization, professional integrity and ethics, leadership, and planned change.

There are many skills students must acquire throughout an MBA program in addition to technical competencies within particular functional areas. These skills include communication and interpersonal skills, analytical reasoning and critical thinking skills, and leadership skills. These skills enable students to develop their professional identity and are woven into the program as follows:

**Communication**

1. Ability to present views and concepts clearly in writing;
2. Ability to objectively critique and judge the value of written work;
3. Ability to present views and concepts clearly through oral communication.

**Collaborative work and interpersonal skills**

4. Ability to understand group dynamics and work effectively with people from diverse backgrounds;
5. Ability to manage and resolve conflict;
6. Ability to organize and delegate project tasks.

**Critical thinking and creative and effective problem solving**

7. Ability to solve structured and unstructured problems;
8. Ability to deal effectively with imposed pressures and deadlines.

The basics for this group of skills may be acquired in prior bachelor degree programs. A variety of opportunities are provided to students throughout the program to develop these skills. A student’s progress is to be documented and evaluated by self-evaluation, peer evaluation, and faculty evaluation.

**MASTER’S DEGREES**

The College of Business Administration (CBA) offers graduate programs which lead to the degrees of Master of Business Administration, Master of Science in Accountancy, Master of Taxation, and Master of Science in Management. The University has offered programs of study in business since 1919, initially through the Department of Commerce and since 1953 through the College of Business Administration. Programs in graduate studies were begun in 1958. All CBA undergraduate and
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graduate programs are accredited by the Association to Advance Collegiate Schools of Business (AACSB).
The CBA seeks to fulfill the educational and professional needs of its 500 graduate students, business organizations, and the community. Most of the graduate programs offered are flexible evening programs designed to serve students who are fully employed professionals and wish to pursue a master’s program on a part-time basis. Students often choose to enroll full-time to complete a master’s program more quickly.

Admission Policy

The applicant must meet one (1) of the following eligibility requirements which are in conformity with the Graduate School and the college’s accrediting agency (AACSB).

- Hold a domestic baccalaureate degree from a regionally accredited college or university and have a total index score of 1,050 or more based upon the overall undergraduate grade point average (GPA)(A=4.0) times 200 plus the Graduate Management Admissions Test (GMAT) score.
- Hold a domestic baccalaureate degree from a regionally accredited college or university and have a total index score of 1,100 or more based on the junior-senior (i.e., last 64 semester or 96 quarter credits) GPA (A=4.0) times 200 plus the GMAT score.
- Hold a degree from outside the United States and have an academic standing of first or high second class, satisfactory evidence of competence in English (i.e., TOEFL score of 550 or above) and a score of at least 500 on the GMAT.
The admission interview will be required of students wishing to be admitted to the MBA program coming directly from an undergraduate program with no professional work experience.

Students admitted on a provisional basis must achieve a composite index of 1,150 based on foundation course GPA times 200 plus GMAT score.

Even though an applicant is eligible for consideration, an offer of admission is not guaranteed. Since staff, facilities, and resources are limited, a determination will be made as to the number of applicants that can be adequately served among those eligible for admission. As a result, offers of admission may be limited to only the most qualified of eligible applicants as determined by the CBA Graduate Admissions Committee. The committee considers the following factors: difficulty of the applicant’s undergraduate program; length of time and activities since graduation; and the percentile ranking on the GMAT.

In rare instances, the applicant who has taken the GMAT but does not meet requirements may be considered for admission. Also, those applicants previously denied admission may, upon presentation of new information, be reconsidered. In either case, the applicant must petition the CBA Graduate Admissions Committee in writing and provide those reasons relevant to the situation which demonstrate the likelihood of success. In all cases, the burden of proof is on the applicant.

Under the regulations of the Graduate School, eligible applicants who have been extended an offer of admission by the CBA Graduate Admissions Committee are recommended to the dean of the Graduate School for either “full” or “provisional” graduate status. Students admitted with “provisional” status who have not attained an overall 3.0 GPA upon completion of 12 graduate credits will be dismissed from the program. Student admitted as non-degree seeking are restricted to enrolling in a maximum of nine credits of Gateway courses only.

Procedure

GMAT scores should be sent to the Director of Graduate Programs in Business, College of Business Administration, The University of Akron, Akron OH 44325-4805 (institution code 1829). The GMAT is administered worldwide and the applicant should register for it sufficiently in advance to the filing of the graduate application to avoid delay of evaluation of the application for admission. Those who have taken the GMAT more than five years ago are normally required to retake the exam.

The CBA Graduate Admissions Committee meets monthly and considers all completed applications on hand at the time of each meeting. Applicants will be informed of admission decisions once the dean of the Graduate School has acted upon the recommendation of the CBA Admissions Committee.

Degree Requirements

To be awarded any master’s degree from the College of Business Administration, a student must:

- Meet the time and grade-point requirements of the Graduate School.
- Complete the minimum credits in each of the degree program descriptions.
- Complete all course and program requirements of applicable master’s program.

Questions regarding these Policies, Procedures, and Requirements may be sent via e-mail to gradca@uakron.edu. Further information may be found at the College of Business Administration website: http://www.uakron.edu/cbagrad.

Transfer Policy

The College of Business Administration will permit nine credits of comparable graduate credits to be transferred in a graduate business program. These credits must be pre-approved by the CBA Director of Graduate Programs. This nine credit policy also applies to second degree applicants.

Second Degree

For a student who has already obtained one master’s degree in business, it is possible to pursue another degree in the college provided that: (1) no second MBA is to be obtained; (2) the desired program (degree requirement) is specifically approved in advance by the CBA Director of Graduate Programs; and (3) no fewer than 21 new credits are earned for the second degree.

Master of Business Administration

The Master of Business Administration program is designed to provide the student with general knowledge of the functional areas of business and to permit the concentration of study in one of the following areas: electronic business, entrepreneurship, finance, health-care management, international business, international finance, management, management of technology and innovation, strategic marketing, or supply chain management.

- Gateway Courses:
  - All are required unless waived at the time of admission. Gateway Courses may not be used as concentration or action-based learning courses.
    - 3250:600 Foundation of Economic Analysis 3
    - 6000:610 Financial Accounting 3
    - 6400:602 Managerial Finance 3
    - 6400:655 Government and Business 3
    - 6700:695 Internship in Business 3

  The Gateway Internship is required for students with no prior professional experience and does not count toward the degree requirements.

  All courses beyond the Gateway Courses require demonstrated proficiencies in Excel, writing, and statistics.

- Professional Courses (6 credits):
  - 6700:696 Special Topics in Professional Development: Leading and Influencing 1
  - 6700:696 Special Topics in Professional Development: Professional Integrity and Social Responsibility 1
  - 6700:696 Special Topics in Professional Development: Negotiation and Collaboration 1
  - 6500:601 Business Analytics and Information Strategy 3

- MBA Core Courses (18 credits):
  - 6800:605 International Business Environments 3
  - 6400:671 Strategic Financial Decision Making 3
  - 6200:610 Process Analysis and Cost Management 3
  - 6500:670 Management of Supply Chains and Operations 3
  - 6500:620 Strategic Marketing 3
  - 6500:652 Managing People in Organizations 3

- Concentration Courses (9 or 12 credits):
  - Students select 9 or 12 credits (depending upon the concentration requirements) in one of the following fields of concentration: direct integrated marketing; electronic business; entrepreneurship; finance; health-care management; international business; international finance; management; management of technology and innovation; strategic marketing; or supply chain management. Or students may design an interdisciplinary concentration that meets his or her career objectives. This self-designed concentration must be planned and approved by the CBA Director of Graduate Programs upon the student’s enrollment in the MBA program.

- Integrative Course (3 credits):
  - 6500:696 Organizational Strategy 3

- Action-Based Learning Requirement:
  - Each student is required to fulfill an action-learning requirement. This course requirement may be fulfilled by approved concentration courses which consist of real world projects and other activities in which students are engaged in action-based learning. Other action-based learning ventures that will fulfill this program requirement include, but are not limited to, internships (excluding the Gateway Internship), study abroad programs, independent studies, and special topic courses designated as fulfilling this program requirement. Required Professional, Core, and Integrative courses will not fulfill this program requirement.

- Program Summary
  - Gateway Courses 12
  - Professional Courses 6
  - MBA Core Courses 18
  - Concentration Courses 9 or 12
  - Integrative Course 3
  - Action-Based Learning (if not fulfilled in a concentration course) 3 or 0
  - Total Program 61

If the Gateway Courses are all waived and the Action-Based Learning requirement is fulfilled in a concentration course within a 9 credit concentration, the MBA program is 36 credits.
Concentration in Accounting (620000 MBA)

Effective Fall 2006 no new students will be accepted to the MBA (Accounting Concentration) until further notice.

The MBA (Accounting Concentration) consists of 12 graduate credit hours of accounting course work. The School of Accountancy recommends that students select courses that allow them to focus on their concentration in one of the three broad areas of accounting-financial reporting, taxation, or accounting information systems.

Concentration in Electronic Business (E-Business) (650108 MBA)

- Required:
  - 6500:608 Entrepreneurship 3
  - 6500:644 Knowledge Management and Business Intelligence 3
  - 6600:835 E-Commerce and Interactive Marketing 3

- Choose 3 credits from the following:
  - 6200:658 Enterprise Risk Assessment and Assurance 3
  - 6500:665 Management of Technology 3
  - 6600:645 Innovative Marketing Strategies 3

Concentration in Entrepreneurship (630000 MBA)

Students learn entrepreneurial skills related to starting or buying a small business, working for a fast-growth business or corporation, family business, and franchising.

- Required:
  - 6600:576 Business Negotiations 3
  - 6500:608 Entrepreneurship 3

- Choose 6 credits from the following:
  - 6600:665 Management of Technology 3
  - 6600:580 Sales Management 3
  - 6400:631 Financial Markets and Institutions 3

- Choose 6 credits from the following:
  - 6400:645 Investment Analysis 3

Concentration in Direct Integrated Marketing (660110 MBA)

- Required (9 credits)
  - 6600:615 Database Marketing 3
  - 6600:630 Customer Relationship Management 3
  - 6600:655 Integrated Marketing Communications 3

- Choose three credits from the following:
  - 6600:635 E-Commerce and Interactive Marketing 3
  - 6600:640 Business Research Methods 3
  - 6600:645 Innovative Marketing Strategies 3

Concentration in Finance (640000 MBA)

The MBA Finance Concentration provides the student with the decision tools and analytical skills needed for the successful financial management of the firm.

- Required (9 credits)
  - 6400:631 Financial Markets and Institutions 3
  - 6400:645 Investment Analysis 3
  - 6400:678 Capital Budgeting 3

- Choose three credits from the following:
  - 6400:538 International Banking 3
  - 6400:650 Techniques of Financial Modeling 3
  - 6400:690 Multinational Corporate Finance 3
  - 6400:690 Selected Topics in Finance 3
  - 6400:691 International Markets and Investments 3
  - 6400:697 Independent Study in Finance 3
  - 6400:698 Independent Study: Business Law 3

Interdisciplinary Concentration (603000 MBA)

This self-designed concentration must be planned and approved by the CBA Director of Graduate Programs upon the student's enrollment in the MBA program. This concentration is intended for students with specific interdisciplinary career interests. The Interdisciplinary Concentration may include courses from colleges outside of the College of Business Administration.

Concentration in Health Care Management (650006 MBA)

- Required:
  - 6500:580 Introduction to Health Care Management 3
  - 6500:663 Data Analysis for Managers 3
  - 6500:683 Health Services Systems Management 3

- Choose three credits from the following:
  - 6500:582 Health Services Operations Management 3

Concentration in International Business (680000 MBA)

- Required (choose one of the following courses):
  - 6400:650 Techniques of Financial Modeling 3
  - 6500:662 Supply Chain Analysis 3
  - 6500:663 Data Analysis for Managers 3
  - 6600:640 Business Research Methods 3

- Plus any 9 credits in International Business:
  - 6800:630 International Marketing Policies 3
  - 6800:685 Multinational Corporations 3
  - 6800:690 Seminar in International Business 3
  - 6800:697 Independent Study in International Business 1-3
  - 6800:680 International Accounting 3
  - 6400:538 International Banking 3
  - 6400:681 Multinational Corporate Finance 3
  - 6400:691 International Markets and Investments 3
  - 6500:656 Management of Global Supply Chain and Operations 3
  - 6500:659 International Human Resource Management 3
  - 6500:661 Comparative Systems of Employee and Labor Relations 3

International Business students must ALSO select one of the following options:

1. Foreign Language Option: demonstrate reading and conversational proficiency in a language other than English.
2. Cross-Cultural Option: select one course (3 credits) from the following courses:*

   - 3250:500 Comparative Economic Systems 3
   - 3250:560 Economics of Developing Countries 3
   - 3250:670 International Monetary Economics 3
   - 3250:671 International Trade 3
   - 3350:550 Development Planning 3
   - 3350:633 Comparative Planning 3
   - 3400:516 Modern India 3
   - 3400:573 Latin America: The Twentieth Century 3
   - 3400:575 Mexico 3
   - 3700:505 Politics in the Middle East 3
   - 3700:512 Global Environment Politics 3

*Cross-cultural courses may be used for free elective credits.

Concentration in International Business for International Executives (680003 MBA)

- Required (choose one of the following courses):
  - 6200:664 Research and Quantitative Methods in Accounting 3
  - 6400:650 Techniques of Financial Modeling 3
  - 6500:662 Applied Operations Research 3
  - 6500:663 Data Analysis for Managers 3
  - 6600:640 Business Research Methods 3

- Plus any 9 credits in International Business:
  - 6800:630 International Marketing Policies 3
  - 6800:685 Multinational Corporations 3
  - 6800:690 Seminar in International Business 3
  - 6800:697 Independent Study in International Business 1-3
  - 6800:680 International Accounting 3
  - 6400:538 International Banking 3
  - 6400:681 Multinational Corporate Finance 3
  - 6400:691 International Markets and Investments 3
  - 6500:656 Management of Global Supply Chain and Operations 3
  - 6500:659 International Human Resource Management 3
  - 6500:661 Comparative Systems of Employee and Labor Relations 3

International Business students must ALSO select one of the following options:

1. Foreign Language Option: demonstrate reading and conversational proficiency in a language other than English.
2. Cross-Cultural Option: select one course (3 credits) from the following courses:*

   - 3250:500 Comparative Economic Systems 3
   - 3250:560 Economics of Developing Countries 3
   - 3250:670 International Monetary Economics 3
   - 3250:671 International Trade 3
   - 3350:550 Development Planning 3
   - 3350:633 Comparative Planning 3
   - 3400:516 Modern India 3
   - 3400:573 Latin America: The Twentieth Century 3
   - 3400:575 Mexico 3
   - 3700:505 Politics in the Middle East 3
   - 3700:512 Global Environment Politics 3

*Cross-cultural courses may be used for free elective credits.
Concentration in Management (650000MBA)

• Required:
  6500:661 Multinational Corporate Finance 3
  6500:691 International Markets and Investments 3
  6500:538 International Banking 3

• Choose three credits from the following:
  6400:631 Financial Markets and Institutions 3
  6400:645 Investment Analysis 3
  6400:650 Techniques of Financial Modeling 3
  6400:678 Capital Budgeting 3
  6400:690 Selected Topics in Finance 3
  6400:697 Independent Study in Finance 3
  6400:698 Independent Study: Business Law 3

Concentration in Supply Chain Management (650202MBA)

Supply chain management (SCM) is the process of planning, implementing, and controlling the operations of the supply chain as efficiently as possible. The overall goal of supply chain management is to impact the organization’s bottom line in a positive way while delivering the best services to customers at the lowest possible cost. Supply chain management professional duties may expand beyond the acquisition of materials, services, and equipment into such areas as planning and policy making, motivation, evaluation, product development, and control. Supply chain management careers include working as a buyer, contract negotiator, inventory manager, import/export goods manager, or a logistics manager.

Students with a Supply Chain concentration may not take more than six credits of 500-level courses.

• Required:
  6500:675 Supply Chain Management 3
  6500:680 Supply Chain Logistics Management 3
  6500:576 Supply Chain Sourcing 3

• Choose 3 credits from the following:
  6500:582 Health Services Operations Management 3
  6500:656 Management of Global Supply Chains and Operations 3
  6500:662 Supply Chain Analysis 3
  6500:678 Project Management 3

Concentration in Strategic Marketing (660000MBA)

• Required (9 credits):
  6600:621 Corporate Management (an action learning course) 3
  6600:635 Ecommerce and Interactive Marketing 3

• Choose one course from the following courses.
  6600:608 Entrepreneurship 3
  6600:575 Business Negotiations 3
  6600:640 Information Systems and IT Governance 3
  6600:650 Human Resource Systems for Managers 3
  6600:678 Project Management 3

Concentration in Technology and Innovation (650107MBA)

This program focuses on enterprise-wide management of technology and innovation in organizations. Value is added by a holistic integration of intellectual capital, manufacturing agility, new product development, knowledge management, and other competencies.

• Required:
  6500:656 Management of Global Supply Chain and Operations 3
  6500:662 Supply Chain Analysis 3
  6500:666 Management of Technology 3
  6500:699 Polymer Management Decisions 3
  6600:540 Product and Brand Management 3

• Recommended free elective (3 credits):
  Select one course from the following courses.
  6500:608 Entrepreneurship 3
  6600:575 Business Negotiations 3
  6600:640 Information Systems and IT Governance 3
  6600:650 Human Resource Systems for Managers 3
  6600:678 Project Management 3

Concentration in Information Finance (640007MBA)

This program prepares students for careers in international finance with emphasis in corporate banking or investment areas. With the globalization of business, international finance has emerged as a major program for students interested in international business operations.

• Required (9 credits)
  6400:681 Multinational Corporate Finance 3
  6400:691 International Markets and Investments 3
  6400:538 International Banking 3

• Choose three credits from the following:
  6400:631 Financial Markets and Institutions 3
  6400:645 Investment Analysis 3
  6400:650 Techniques of Financial Modeling 3
  6400:678 Capital Budgeting 3
  6400:690 Selected Topics in Finance 3
  6400:697 Independent Study in Finance 3
  6400:698 Independent Study: Business Law 3

Concentration in Supply Chain Management (660000MBA)

• Required:
  6600:621 Corporate Management (an action learning course) 3
  6600:635 Ecommerce and Interactive Marketing 3

• Choose one course from the following courses.
  6600:608 Entrepreneurship 3
  6600:575 Business Negotiations 3
  6600:640 Information Systems and IT Governance 3
  6600:650 Human Resource Systems for Managers 3
  6600:678 Project Management 3

Concentration in Supply Chain Management (650202MBA)

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Students with a Supply Chain concentration may not take more than six credits of 500-level courses.

• Required:
  6500:675 Supply Chain Management 3
  6500:680 Supply Chain Logistics Management 3
  6500:576 Supply Chain Sourcing 3

• Choose 3 credits from the following:
  6500:582 Health Services Operations Management 3
  6500:656 Management of Global Supply Chains and Operations 3
  6500:662 Supply Chain Analysis 3
  6500:678 Project Management 3

Concentration in Supply Chain Management (650202MBA)

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Concentration in Supply Chain Management (650202MBA)

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  6500:680 Supply Chain Logistics Management 3
  6500:576 Supply Chain Sourcing 3

• Choose 3 credits from the following:
  6500:582 Health Services Operations Management 3
  6500:656 Management of Global Supply Chains and Operations 3
  6500:662 Supply Chain Analysis 3
  6500:678 Project Management 3

Master of Science in Accounting (620004MSA: Accounting)

The Master of Science in Accounting is an advanced professional degree that offers students the opportunity to develop substantive knowledge, skills, and abilities in accounting. The program offers students flexibility to combine their accounting backgrounds with coursework in information systems and finance. It also allows students without undergraduate degrees in accounting to combine their diverse backgrounds with a graduate degree in accounting. Students may pursue a professional accounting option or an accounting information systems option.

Program Learning Goals

Consistent with the School’s mission, students in the program will:

• Develop advanced knowledge and understanding of accounting concepts, the regulatory environment, and professional practice issues and challenges;

• Enhance their critical thinking skills and develop the ability to apply advanced knowledge of accounting concepts, principles and practices in innovative ways;

• Develop the ability to research accounting issues and write research reports that incorporate qualitative and quantitative data analysis and integrate information from multiple sources;

• Demonstrate effective written and oral communication skills;

• Understand and appreciate the role of information technology in contemporary accounting, research, and decision-making; and

• Understand and appreciate the significance of ethics, professionalism, and social responsibility in accounting.

Admission Requirements

The MSA curriculum consists of 30 semester credits. Admission to the program is open to the following individuals:

1. Individuals with undergraduate degrees in accounting from a regionally accredited institution or international equivalent.

2. Individuals with a non-accounting undergraduate business degree from a regionally accredited institution or international equivalent.

3. Individuals with a non-business undergraduate degree from a regionally accredited institution or international equivalent.

All students must earn a satisfactory score on the GMAT in order to be accepted into the program. Students with accounting degrees from AACSB accredited business schools are not required to complete foundation courses provided that they earn an overall GPA in accounting of 2.5 or better. Students who do not satisfy this criterion may be required to complete selected foundation courses specified by the chair of the School of Accountancy.

The Program

Individuals with a non-accounting undergraduate business degree from a regionally accredited institution or international equivalent or individuals with a non-business degree from a regionally accredited institution or international equivalent must complete all Pre-MSA foundation courses and Pre-MSA financial reporting courses listed below. Students who have completed similar courses at the undergraduate or graduate level may apply for waivers. Applications for waivers will be reviewed on a case-by-case basis, considering such factors as the student’s background, work experience, institution, grades earned, and date when similar courses were taken.

Documented guidance on sequencing MSA courses available through the School of Accountancy.

• Pre-MSA Foundation Courses (12 credits):
  6200:603 Accounting Decision Support Systems 3
  6400:602 Managerial Finance 3
  6400:623 Legal Aspects of Business Transactions 3
  6500:601 Business Analytics and Information Strategy 3

• Pre-MSA Financial Reporting Courses (12 credits):
  6200:621 Corporate Accounting and Financial Reporting I 3
  6200:622 Corporate Accounting and Financial Reporting II 3
BS/MSA students will be monitored closely and be given professional accounting advice through the School of Accountancy. Students must earn and maintain a 3.0 or better GPA (business, accounting, and overall) to stay in the program. Students who are not able to do so will complete the regular bachelor's program instead of the accelerated BS/MSA program.

All students in the program will complete 30 credits of graduate courses to fulfill the requirements for the masters degree. They will complete nine credits of 500-level graduate courses during their fourth (senior) year and the remaining 21 credits of 600-level graduate courses during their fifth year. The nine credits of 500-level graduate courses will count toward both their graduate and undergraduate degree programs. A total of 150 credits of graduate and undergraduate courses are required to complete the Accelerated BS/MSA program.

BS/MSA students may be eligible for graduate assistantships during their fourth and fifth years of the program only if they are registered for at least nine graduate credits in each semester. Honors students may be eligible for funding from the Honors College during the fourth year and receive a graduate assistantship during the fifth year.

BS/MSA students must complete a total of 30 graduate credits from the following courses. No more than nine credits can be 500-level (6200.5xx) courses. At least 12 credits must be 600-level accounting (6200.6xx) courses.

<table>
<thead>
<tr>
<th>Group A: Accounting and Assurance Core (12 - 15 credits):</th>
</tr>
</thead>
<tbody>
<tr>
<td>6200:615 ERP and Financial Data Communications</td>
</tr>
<tr>
<td>6200:637 Contemporary Accounting Issues</td>
</tr>
<tr>
<td>6200:660 Accounting and Assurance Project (capstone course)</td>
</tr>
<tr>
<td>6200:659 Assurance Services and Data Mining</td>
</tr>
</tbody>
</table>

*All courses in this group are required except for 6200:520, which is not required for students in the AIS option. Students who have completed a similar advanced accounting course at the undergraduate level must take a different course.

<table>
<thead>
<tr>
<th>Group B: Taxation Core (3 - 6 credits):</th>
</tr>
</thead>
<tbody>
<tr>
<td>6200:627 Survey of Federal Taxation</td>
</tr>
<tr>
<td>6200:531 Business Entity Taxation*</td>
</tr>
<tr>
<td>6200:628 Corporate Taxation I</td>
</tr>
</tbody>
</table>

*Students are required to take a different taxation course if they have completed the equivalent of 6200:627 or 6200:531. Students are required to complete at least one course but no more than two courses in the taxation core.

<table>
<thead>
<tr>
<th>Group C: Accounting Electives (0 - 6 credits):</th>
</tr>
</thead>
<tbody>
<tr>
<td>6200:654 Information Systems Security</td>
</tr>
<tr>
<td>6200:670 Governmental Accounting</td>
</tr>
<tr>
<td>6200:659 Assurance Services and Data Mining</td>
</tr>
</tbody>
</table>

These electives are open only to students who have not previously completed similar courses.

<table>
<thead>
<tr>
<th>Group D: Information Systems Electives (0 - 12 credits):</th>
</tr>
</thead>
<tbody>
<tr>
<td>6500:520 Management of Data Networks</td>
</tr>
<tr>
<td>6500:643 Analysis and Design of Business Systems</td>
</tr>
<tr>
<td>6500:645 Business Database Systems</td>
</tr>
<tr>
<td>6500:646 Software Development and Quality Assurance</td>
</tr>
<tr>
<td>6500:678 Project Management</td>
</tr>
</tbody>
</table>

The Chair of the School of Accountancy may approve or substitute other relevant information systems courses not listed in Group D above. Students pursuing the Accounting Information Systems Option must complete a minimum of 12 credits of information systems courses (i.e., Group D and accounting information systems courses from Group C).

<table>
<thead>
<tr>
<th>Group E: Finance Electives (0 - 15 credits):</th>
</tr>
</thead>
<tbody>
<tr>
<td>6400:631 Financial Markets and Institutions</td>
</tr>
<tr>
<td>6400:645 Investment Analysis</td>
</tr>
<tr>
<td>6400:674 Strategic Financial Decision Making</td>
</tr>
<tr>
<td>6400:681 Multinational Corporate Finance</td>
</tr>
<tr>
<td>6400:691 International Markets and Investments</td>
</tr>
</tbody>
</table>

The Chair of the School of Accountancy may approve or substitute other relevant finance courses not listed in Group E above.

### Accelerated BS/MS Accounting (620007MSA)

The Accelerated BS/MS Accounting (BS/MSA) program allows honors students and other outstanding accounting majors to complete the 150 credits of pre-CPA certification education required by the Accountancy Board of the State of Ohio and earn both a bachelors and masters degree in accounting. Honors and other outstanding students will be targeted as soon as they identify accounting as a major and will be officially accepted into the accelerated program by the start of their senior year.

To receive official acceptance into the program, students must satisfy the following requirements:

- Provide two letters of recommendation from CBA faculty
- Earn at least a B in 6200:301 Cost Management and Control, 6200:320 Accounting Information Systems and Internal Control, 6200:321 Financial Reporting and Analysis I, and 6200:322 Financial Reporting and Analysis II. Students applying for acceptance into this program cannot repeat any of these four courses required for admission to make the minimum grade of a B.
- Earn an overall GPA of 3.0 or higher in accounting courses, in business courses, and in all University of Akron courses
- Apply to be and be accepted into Graduate School by the start of their senior year

### Master of Taxation (620002MT)

The Master of Taxation (MTax) Program is a professional degree designed to provide intensive training for individuals with an interest in developing specialized skills in the area of taxation. The program is intended for practicing accountants and attorneys who wish to further or pursue a career in taxation. However, other individuals with a four-year degree in business or accounting from a regionally accredited institution of higher learning (or international equivalent) may also find the program valuable and manageable. The program offers substantive technical and professional knowledge, skills, and abilities needed to function as a taxation specialist in the United States.

Students in the program will:

- develop substantive and comprehensive knowledge of federal taxation
- understand the state and local taxation regimes of selected states, including the State of Ohio
- apply to be and be accepted into Graduate School by the start of their senior year
- earn both a four-year degree in business or accounting and the Master of Taxation (MTax) degree
b. develop abilities to research taxation issues, identify and solve taxation prob-
lems, and plan taxation strategies;

c. demonstrate effective written and oral presentation skills; and

d. demonstrate ability to use information technology for researching and solving taxation problems.

The MTax curriculum consists of 30 semester credits. Admission to the program is open to the following:

1. Certified Public Accountants and other accountants with equivalent credentials with at least a bachelor’s degree.
2. Individuals with an undergraduate degree in accounting from a regionally accredited institution or international equivalent.
3. Individuals with a JD.
4. Individuals who plan to pursue the joint JD/MTax degree JD students must complete the first year of law school if full-time or the second year of law school if part-time before they can take courses in the MTax program.
5. Students who have at least two years of work experience and have an accounting certification (e.g., CPA, CMA, CIA, etc.) or have successfully passed the bar exam do not need to take the MTax exam to be admitted to the program. All other students must earn a satisfactory score on the GMAT (LSAT for law students) prior to being admitted to the program. Foundation courses are not required for individuals in Categories 1 and 2.
6. Individuals in categories 3 and 5 must complete an introduction to financial accounting course and a federal income income tax course before they begin taking MTax courses. These courses may be taken at the graduate or undergraduate level. Students should plan to complete those courses in the summer or earlier prior to starting the required MTax courses.

Students are encouraged to begin the program in the fall. Full-time students who begin the program in fall will normally complete all requirements for graduation in two semesters. Part-time students who start in fall can complete all requirements for graduation within two years.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>6200:628</td>
<td>Tax Research</td>
<td>3</td>
</tr>
<tr>
<td>6200:631</td>
<td>Corporate Taxation I</td>
<td>3</td>
</tr>
<tr>
<td>6200:632</td>
<td>Taxation of Transactions in Property</td>
<td>3</td>
</tr>
<tr>
<td>9000:721</td>
<td>Taxation of Intellectual Property</td>
<td>3</td>
</tr>
<tr>
<td>6200:641</td>
<td>Taxation of Partnerships</td>
<td>3</td>
</tr>
<tr>
<td>6200:648</td>
<td>Tax Practice and Procedure</td>
<td>3</td>
</tr>
<tr>
<td>6200:643</td>
<td>Tax Accounting</td>
<td>3</td>
</tr>
<tr>
<td>6200:649</td>
<td>State and Local Taxation</td>
<td>3</td>
</tr>
<tr>
<td>6200:651</td>
<td>International Taxation</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits Required for MTax 30

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>6200:629</td>
<td>Tax Crimes and Forensics</td>
<td>3</td>
</tr>
<tr>
<td>6200:633</td>
<td>Estate and Gift Taxation</td>
<td>3</td>
</tr>
<tr>
<td>6200:642</td>
<td>Corporate Taxation II</td>
<td>3</td>
</tr>
<tr>
<td>6200:644</td>
<td>Income Taxation of Decedents, Trusts, and Estates</td>
<td>3</td>
</tr>
<tr>
<td>6200:645</td>
<td>Advanced Individual Taxation</td>
<td>3</td>
</tr>
<tr>
<td>6200:646</td>
<td>Consolidated Tax Returns</td>
<td>3</td>
</tr>
<tr>
<td>6200:647</td>
<td>Qualified Pension and Profit-Sharing Plans</td>
<td>3</td>
</tr>
<tr>
<td>6200:650</td>
<td>Estate Planning</td>
<td>3</td>
</tr>
<tr>
<td>6200:662</td>
<td>S Corp Taxation</td>
<td>3</td>
</tr>
<tr>
<td>6200:693</td>
<td>Selected Topics: Mergers and Acquisitions</td>
<td>3</td>
</tr>
</tbody>
</table>

Not all elective classes will be offered each year. Electives will be offered based on demand and faculty resource availability. 6200:628 Tax Research may be taken in the first semester that the class is available.

### Master of Science in Management

The Master of Science in Management program allows students to concentrate their advanced study in one of the two areas: human resource management or information systems management. Because of the complex nature of these specializations, they are not normally offered as options in traditional MBA programs. They are designed for individuals who know what they want to do or to help them apply what they already know more effectively. For example, computer science majors may choose to concentrate in information systems while psychology majors would benefit from the human resource management option. The introductory coursework for this program is termed a foundation core and consists of 24 credits which may be waived if the student has completed prior study in the area. The remaining 33 credits of coursework consists of 12 credits of general management coursework, 18 credits of specialization courses and one 3-credit free elective. If all foundation courses are waived, the program is 33 credits in length. Students may waive the GMAT requirement if they have an acceptable GRE score and have two years of documented business experience.

<table>
<thead>
<tr>
<th>Foundation Core:</th>
</tr>
</thead>
<tbody>
<tr>
<td>All are required unless waived at time of admission</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>3250:600</td>
<td>Foundations of Economic Analysis</td>
<td>3</td>
</tr>
<tr>
<td>6200:601</td>
<td>Financial Accounting</td>
<td>3</td>
</tr>
<tr>
<td>6400:602</td>
<td>Managerial Finance</td>
<td>3</td>
</tr>
<tr>
<td>6400:655</td>
<td>Government and Business</td>
<td>3</td>
</tr>
<tr>
<td>6500:600</td>
<td>Management and Organizational Behavior</td>
<td>3</td>
</tr>
<tr>
<td>6500:601</td>
<td>Business Analytics and Information Strategy</td>
<td>3</td>
</tr>
<tr>
<td>6500:602</td>
<td>Computer Techniques for Management</td>
<td>3</td>
</tr>
<tr>
<td>6600:600</td>
<td>Marketing Concepts</td>
<td>3</td>
</tr>
</tbody>
</table>

### Information Systems Management (ISM) (650004MSM)

<table>
<thead>
<tr>
<th>Course Code</th>
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</tr>
</thead>
<tbody>
<tr>
<td>6500:640</td>
<td>Information Systems and IT Governance</td>
<td>3</td>
</tr>
<tr>
<td>6500:652</td>
<td>Managing People in Organizations</td>
<td>3</td>
</tr>
<tr>
<td>6500:663</td>
<td>Data Analysis for Managers</td>
<td>3</td>
</tr>
<tr>
<td>6500:675</td>
<td>Supply Chain Management</td>
<td>3</td>
</tr>
<tr>
<td>6500:641</td>
<td>Business Database Systems</td>
<td>3</td>
</tr>
<tr>
<td>6500:643</td>
<td>Analysis and Design of Business Systems</td>
<td>3</td>
</tr>
<tr>
<td>6500:645</td>
<td>Software Development and Quality Assurance</td>
<td>3</td>
</tr>
<tr>
<td>6500:646</td>
<td>Enterprise Systems Implementation</td>
<td>3</td>
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<tr>
<td>6500:678</td>
<td>Project Management</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Electives:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>6500:520</td>
<td>Management of Data Networks</td>
</tr>
<tr>
<td>6500:504</td>
<td>Information Systems Security</td>
</tr>
<tr>
<td>6500:644</td>
<td>Knowledge Management and Business Intelligence</td>
</tr>
<tr>
<td>6500:651</td>
<td>Organizational Transformation</td>
</tr>
</tbody>
</table>

### Human Resource Option (HRM) (650005MSM)

<table>
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<tr>
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<tr>
<td>6500:640</td>
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<td>3</td>
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<td>6500:652</td>
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<td>3</td>
</tr>
<tr>
<td>6500:663</td>
<td>Data Analysis for Managers</td>
<td>3</td>
</tr>
<tr>
<td>6500:675</td>
<td>Supply Chain Management</td>
<td>3</td>
</tr>
<tr>
<td>6600:600</td>
<td>Employee Relations Management</td>
<td>3</td>
</tr>
<tr>
<td>6600:658</td>
<td>Strategic and Global Human Resource Management</td>
<td>3</td>
</tr>
<tr>
<td>6500:660</td>
<td>Staffing and Employment Regulations</td>
<td>3</td>
</tr>
</tbody>
</table>

### Options

Choose a concentration from the following:

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
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<td>6500:520</td>
<td>Management of Data Networks</td>
<td>3</td>
</tr>
<tr>
<td>6500:504</td>
<td>Information Systems Security</td>
<td>3</td>
</tr>
<tr>
<td>6500:644</td>
<td>Knowledge Management and Business Intelligence</td>
<td>3</td>
</tr>
<tr>
<td>6500:651</td>
<td>Organizational Transformation</td>
<td>3</td>
</tr>
</tbody>
</table>

### Accelerated MSM - ISM Program Option (650204MSM)

The MSM - Fast track Information Systems option has been designed for students in undergraduate information systems or related programs who are interested in pursuing graduate work with a project management emphasis. Additional requirements for students wishing to pursue this option include:

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undergraduate degree in Information Systems (from AACSB accredited institution) or related fields with a Pre-MBA minor</td>
<td></td>
</tr>
</tbody>
</table>
Undergraduate GPA of at least 3.0 with successful course completion in programming, database, and networking (B or better)
Documented completion of an IS related internship (or other IS work experience) with a letter summarizing project and work scope from supervisor
Letters of reference from undergraduate program director or faculty
Undergraduate students who wish to count 6200:554 and 6500:520 toward their graduate degree may take these classes during their senior year and must receive a grade of B or better. These classes must be taken exclusive of students requirements toward the baccalaureate degree.
Undergraduate degree must be completed at the most two years prior to planned date of program entry

Management Core Courses (9 credits)

- 6500:640 Information Systems and IT Governance 3
- 6500:663 Data Analysis for Managers 3
- 6500:675 Supply Chain Management 3

Information Systems Core (12 credits)

- 6500:641 Analysis and Design of Business Systems 3
- 6500:643 Software Development and Quality Assurance 3
- 6500:646 Enterprise Systems Implementation 3

Electives (6 credits)

- 6500:520 Management of Data Networks 3
- 6500:554 Information System Security 3
- 6500:641 Knowledge Management and Business Intelligence 3
- 6500:652 Managing People in Organizations 3

Practicum (3 credits) Choose one from the following:

- 6500:690 Selected Topics in Management 3
- 6700:695 Internship (see below for guidelines) 3

Guidelines for receiving credit for the Information Systems Internship:

- Students are required to work at least 20 hours per week
- Internship must be approved by the Department Chair
- Internships will be approved based on the type of business and the scope of work to be done
- Interns will complete the report based on MIS faculty specifications
- The internship should be in an area directly related to any of traditional Information Systems functions related to systems planning, analysis, design, programming, implementation, networking operations and infrastructure, technical documentation, systems installation, maintenance, and IT auditing.

Joint Programs

The School of Law and the College of Business Administration (CBA) offer a joint program in legal and administrative studies (J.D./M.B.A.), a joint program in legal and taxation studies (J.D/M.Tax) and a joint program in legal and human resource studies (J.D./M.S.M.). These combinations are open to the student preparing for a career in such areas as corporate law, tax accounting, human resource management or legal practice in government. The amount of time required to complete a joint degree program is shorter than the time required to complete both programs independently. To pursue either one of these cooperative programs, the student must apply to and be accepted by both the School of Law and the Graduate School.

Joint Programs in Business prior to completion. To earn both degrees, a total of 98

Law Courses to be used as MBA Concentration Courses

Choices for Concentration Electives:

Finance (choose 3 credits)

- 9200:629 Secured Transactions
- 9200:635 Bankruptcy Law
- 9200:639 Estate and Gift Taxation
- 9200:652 Land Use Planning
- 9200:671 Securities Regulation
- 9200:675 Special Problems in Estate Planning

International Business (choose 6 credits)

- 9200:643 International Investments and Commercial Transactions
- 9200:649 International Law
- 9200:661 International Investments and Commercial Transactions
- 9200:716 International Patent Law
- 9200:718 International Trademark Law

Management (choose 6 credits)

- 9200:626 Basic Business Associations
- 9200:633 Corporations
- 9200:637 Employment Discrimination
- 9200:642 Alternative Dispute Resolution
- 9200:650 Labor Law and Collective Bargaining
- 9200:651 Employment Law
- 9200:659 Negotiations

Marketing (choose 3 credits)

- 9200:611 Entertainment Law
- 9200:627 Commercial Paper
- 9200:659 Negotiation
- 9200:672 Seminar in Business Planning
- 9200:681 Sports Law
- 9200:683 Seminar in Product Liability
- 9200:701 Patent Law and Policy

Interdisciplinary Concentration (choose 9 credits)

Students may devise a personalized concentration consisting of any nine credits of the law courses listed for the concentrations. The choice of courses for the Interdisciplinary Concentration must be approved by the director prior to enrolling in the courses. Students must provide a career-related, programmatic rationale for the personalized concentration they have devised.

Law Courses to be used as MSM-HR Concentration Courses

(Admission to the Human Resource Option of the Master of Science in Management degree program has been suspended until further notice therefore the MSM-HR concentration is not available effective Fall 2011)

- 9200:637 Employment Discrimination
- 9200:642 Alternative Dispute Resolution
- 9200:651 Employment Law
- 9200:659 Negotiations
- 9200:684 Human Resources Lawyer
**College of Health Sciences and Human Services**

Roberta DePompei, Ph.D., Interim Dean

**Organization**

The College of Health Sciences and Human Services comprises three schools: the School of Family and Consumer Sciences; the School of Social Work; and the School of Speech-Language Pathology.

The college places a premium on learning by doing. Students work side by side with talented and caring faculty members and professionals throughout the community. The college strives to make life better for individuals and the larger community through excellence in health sciences, human services, and health-related education and research.

**Doctor of Audiology Program (Au.D.) (H70200AUD)**

The Au.D. is a four-year post baccalaureate professional doctoral degree program. Doctors of Audiology are independent professionals who specialize in the diagnosis, management and treatment of hearing and balance disorders.

The Au.D. program, which is known as the Northeast Ohio Au.D. Consortium (NOAC), is a joint degree program administered by The University of Akron and Kent State University. NOAC is a single unified program of faculty, students, facilities, and resources. Students take classes and participate in clinic at both The University of Akron and Kent State University. NOAC offers the students the flexibility to register for courses on the campus where they are admitted. All classes are cross-listed.

**Admission Requirements**

- Bachelor’s degree from an accredited college or university
- Grade point average of 3.0 or higher
- Three letters of recommendation
- Graduate Record Examination scores
- Personal statement of purpose as to why the applicant wishes to become an audiologist

All application material must be received by February 1.

**Degree Requirements - Doctor of Audiology**

The Au.D. curriculum is a continuous 48 month post-baccalaureate course of study designed to integrate classroom, laboratory, and clinical experiences. All students will attend full-time and take the same courses in appropriate sequence. The emphasis of the program is on the principles and practices underlying evaluation, treatment, and provision of hearing care services.

For progression and graduation, students must meet the following degree requirements:

- Maintain an overall grade point average of 3.0
- Complete a minimum of 120 semester credits
- Accrue 2000 clock hours of clinical experience
- Meet the requirements for Ohio licensure in Audiology
- Pass academic and clinical competency-based examinations
- Complete the following required courses:
  - 7700:701 Basic and Applied Acoustics in Audiology 4
  - 7700:702 Anatomy and Physiology of the Peripheral Auditory & Vestibular System 3
  - 7700:703 Acoustic Phonetics 3
  - 7700:704 Critical Analysis of Research in Audiology 2
  - 7700:741 Directed Observation in Audiology I 1
  - 7700:745 Auditory Disorders 2
  - 7700:706 Anatomy and Physiology Underlying Neuro-Otology 4
  - 7700:707 Psych acoustic 3
  - 7700:708 Critical Analysis of Research in Audiology II 2
  - 7700:742 Directed Observation in Audiology II 1
  - 7700:749 Research Project in Audiology 3
  - 7700:750 Graduate Audiologist IV 8
  - 7700:751 Fourth Year Seminar 1
  - 7700:752 Cultural Issues in Deafness 2
  - 7700:753 Electro physiological Techniques in Audiology 3
  - 7700:754 Medical Management of Auditory Disorders 2
  - 7700:756 Graduate Audiologist III 8
  - 7700:757 Critical Analysis of Research in Audiology I 2
  - 7700:758 Graduate Audiologist II 3
  - 7700:759 Culture Issues in Deafness 2
  - 7700:762 Research Project in Audiology 3

**MASTER’S DEGREE**

**Family and Consumer Sciences**

A program of study is offered leading to the Master of Arts in Family and Consumer Sciences degree options in child and family development; child life; clothing, textiles and interiors; and food science.

**Admission Requirements**

- Minimum GPA of 2.75 for four years of undergraduate study or 3.00 for the last two years of undergraduate study.
- Completion of general Graduate Record Examination within the five years preceding application, with the following score:
  - 800 combined on verbal and quantitative with at least a 4.0 on analytical writing,
  - or
  - 900 combined on verbal and quantitative with at least a 4.0 on analytical writing
- Three letters of recommendation
- Statement of purpose
- Resume

The graduate faculty of the School of Family and Consumer Sciences may require an interview with any applicant.

Application materials must be received by March 1 for fall enrollment if applying for a graduate assistantship, and by October 1 for spring enrollment if applying for a graduate assistantship. Applications are accepted on a rolling basis for those not applying for a graduate assistantship.

The application deadline for the Child Life program is February 1 for fall enrollment (only admit for the fall term).

Accepted students will be expected to comply with the following requirements:

- Complete the course of study in one of the four options, with a minimum of 40 credits. (Child Life minimum is 42 credits)

These credits will include:

- Foundation courses to prepare for research in family and consumer sciences as an interdisciplinary field;
- Core courses in the area of specialty;
- Option electives and cognate electives, selected in consultation with academic advisor, from within School or in another discipline. These are chosen to strengthen student’s professional goals.
- Pass a written comprehensive examination over major and minor areas after the completion of at least 19 credits of graduate work.
- Complete a master’s thesis or a master’s project. The thesis option involves the design and evaluation of original research in an appropriately related area commensurate with the student’s background and area of pursuit. The project option involves the design, development, implementation, and evaluation of original and creative programs and/or resource materials. A written proposal for the thesis or project cannot be submitted until successful completion of the comprehensive examination.
- Apply for advancement to candidacy upon successful completion of 24 credits of graduate study, the written comprehensive examination, and an approved prospectus or proposal for a thesis or project.
- Pass an oral examination covering the thesis or project report.
Foundation Courses
- Required by all program options:
  3400:604 Orientation to Graduate Studies in Family and Consumer Sciences 3
  3400:680 Historical and Conceptual Bases of Family and Consumer Sciences 3
  3400:685 Research Methods in Family and Consumer Sciences 3

Child and Family Development Option (H40101MA)
- Core Courses:
  3400:622 Family in LifeSpan Perspective 3
  3400:638 Developmental Parent-Child Interactions (online) 3
  3400:639 Family Dynamics 3
  3400:641 Child Development Theories 3
  3400:665 Development in Infancy and Early Childhood 3
- Option Electives
  Select 6 credits from the following courses with approval of advisor (if a course has been taken at the undergraduate level, other courses must be selected):
  3400:501 American Families in Poverty (online) 3
  3400:504 Middle Childhood and Adolescence 3
  3400:506 Family Financial Management 3
  3400:540 Family Crisis 3
  3400:541 Family Relationships in the Middle and Later Years 3
  3400:542 Human Sexuality 3
  3400:546 Culture, Ethnicity, and the Family (online) 3
  3400:548 Before and After School Child Care 2
  3400:550 Organization and Supervision of Child-Care Centers 3
  3400:596 Parent Education (online) 3
  3400:688 Practicum in Family and Consumer Sciences 3
- Cognate Electives
  Select 7 credits with approval of advisor from within the School of Family and Consumer Sciences OR from a cognate area outside the School, OR from a combination of the two.
  - Thesis or Project (select one):
    3400:694 Master’s Project 5
    4700:699 Master’s Thesis 5
    Total 40

Child Life Option (H40109MA: Non-thesis Option) (H40109MAT: Thesis Option)
- Core Courses:
  3400:546 Culture, Ethnicity, and Family (online) 3
  3400:550 Nutrition Communication and Education 4
  5600:651 Techniques of Counseling 3
  3400:551 Child in the Hospital (and lab) 4
  3400:555 Practicum Experience in a Child Life Program 3
  3400:584 Hospital Settings, Children, and Families (and lab) 3
  3400:552 Children, Illness, and Loss 3
  3400:596 Child Life Internship 5
- Cognate:
  5600:622 Introduction to Play Therapy 3
  Select three credits with approval of advisor within the School of Family and Consumer Sciences OR from a cognate area outside of the School.
  - Thesis or Project (select one):
    3400:694 Master’s Project 5
    4700:699 Master’s Thesis 5
    Total 40

Clothing, Textiles and Interiors Option (H40104MA)
- Core Courses:
  3400:634 Material Culture Studies 3
  3400:639 Theories of Fashion 3
  3400:677 Social Psychology of Dress and the Near Environment 3
- Options Electives (select 13 credits with approval of advisor):
  7400:518 History of Interior Design I 4
  7400:519 History of Interior Design II 4
  7400:523 Professional Image Analysis 3
  7400:525 Textiles for Apparel 3
  7400:527 Global Issues in Textiles and Apparel 3
  7400:536 Textile Conservation 3
  7400:537 Historic Costume 3
  7400:538 History of Fashion 3
  7400:631 Problems in Design 16
  7400:688 Practicum in Family and Consumer Sciences 3
  7400:696 Individual Investigation in Family and Consumer Sciences 16
- Cognate Electives:
  Select 6 credits with approval of advisor from courses within the School of Family and Consumer Sciences OR from a cognate area outside the School OR from a combination of the two.
  - Thesis or Project (select one):
    4700:694 Master’s Project 5
    4700:699 Master’s Thesis 5
    Total 40

Nutrition and Dietetics (H40103MSND)
- Core Courses:
  7400:575 Analysis of Food 3
  7400:576 Developments in Food Science 3
  7400:570 The Food Industry: Analysis and Field Study 3
  7400:523 Advanced Food Preparation 3
  7400:624 Advanced Human Nutrition I 3
  7400:625 Advanced Human Nutrition II 3
  7400:688 Practicum in Family and Consumer Sciences 3
- Cognate Electives:
  Select 9-12 credit hours with the approval of advisor from among the following (if a course has been taken at the undergraduate level, other courses must be selected):
  3100:500 Food Plants 2
  3250:540 Special Topics: Economics/World Food Problems 4
  7400:571 Cultural Dimensions of Food 3
  7400:585 Seminar in Family and Consumer Sciences (Food Science topic) 2
  7400:570 The Food Industry: Analysis and Field Study 3
  7400:503 Advanced Food Preparation 3
  7400:524 Nutrition in the Life Cycle 3
  7400:624 Advanced Human Nutrition I 3
  7400:625 Advanced Human Nutrition II 3
  7400:688 Practicum in Family and Consumer Sciences 3

Note: Students in all of the options who are working on a master’s thesis may elect to take the course 7400:690 Thesis Research/Reading. This course will not, however, count as part of the required 40-42 credits in the program.

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Food and Consumer Sciences Option (H40102MA)
(admissions temporarily suspended)
- Core Courses:
  7400:575 Analysis of Food 3
  7400:576 Developments in Food Science 3
  7400:570 The Food Industry: Analysis and Field Study 3
  7400:503 Advanced Food Preparation 3
  7400:524 Nutrition in the Life Cycle 3
  7400:624 Advanced Human Nutrition I 3
  7400:625 Advanced Human Nutrition II 3
  7400:688 Practicum in Family and Consumer Sciences 3

Application materials must be received by March 1 for fall enrollment and by October 1 for spring enrollment.
In addition to the above, the student will be expected to comply with the following requirements:

- Complete the course of study with a minimum of 40 credits. These credits will include:
  - foundation courses to prepare the student for research in family and consumer sciences as a discipline;
  - core courses in the area of specialty;
  - electives selected from within the department or from another discipline to strengthen student’s professional goals. These courses will be selected in consultation with and approval from the student’s graduate faculty advisor.
- Pass a written comprehensive examination over major and minor areas after the completion of at least 19 credits of graduate work.
- Apply for advancement to candidacy upon successful completion of 24 credits of graduate study, the written comprehensive examination, and an approved prospectus for a thesis or project.
- Complete a thesis or a project. The thesis option involves the design and evaluation of original research in an appropriately related area commensurate with the student’s background and area of pursuit. The project option involves the design, development, implementation and evaluation of original and creative programs and/or resource materials. A written proposal for the thesis or project option cannot be submitted until the successful completion of a comprehensive examination.
- Pass an oral examination covering the thesis or project.

**Foundation Courses**

- Required by all program options:
  - 7400:604 Orientation to Graduate Studies in Family and Consumer Sciences 1
  - 7400:680 Historical and Conceptual Bases of Family and Consumer Sciences 3
  - 7400:685 Research Methods in Family and Consumer Sciences 3

- Core Courses:
  - 7400:624 Advanced Human Nutrition I 3
  - 7400:625 Advanced Human Nutrition II 3

**Electives** (9 to 12 credits required)

At least 2 courses must be selected from Biology (3100), Chemistry (3150), Nursing (8200), Exercise Physiology (5550), or Nutrition (7400). If a course was taken at the undergraduate level, it may not be used at the graduate level. Students are not limited to the following course selections, however, advisor approval is required.

- 3100:565 Cardiac Physiology 3
- 3150:501 Biochemistry Lecture I 3
- 3150:502 Biochemistry Lecture II 3
- 3600:524 Nutrition in the Life Cycle 3
- 4400:580 Community Nutrition I - Lecture 3
- 4400:582 Community Nutrition II - Lecture 3
- 7000:597 Sports Nutrition 3
- 4400:588 Practicum in Dietetics 1-3
- 8200:561 Advanced Physiological Concepts in Health Care I 3
- 8200:562 Advanced Physiological Concepts in Health Care II 3
- 8200:608 Pathophysiology Concepts of Nursing Care 3
- 8200:612 Advanced Clinical Pharmacology 3
- 3230:520 Anthropology of Food 3
- 5500:605 Physiological Muscle Activity and Exercise 3
- 7700:632 Dysphasia 3

**Cognate Electives** (8 to 11 credits required)

Select with the approval of advisor from among the following or other courses that strengthen the student’s goals.

- 3470:664 Statistics for the Health Sciences 4
- 3890:678 Social Gerontology 3
- 5600:651 Techniques of Counseling 3
- 6500:600 Management and Organizational Behavior 3
- 7400:528 Nutrition in Medical Sciences II 3
- 7400:543 Nutrition Assessment 3
- 7600:513 Food System Management II 3
- 7800:514 Food System Management II Clinical 3
- 7400:500 Nutrition Communication and Education Skills 3
- 3890:666 Sociology of Health Care 3
- 5500:880 Writing for Publication 3
- 6500:580 Introduction to Health Care Management 3
- 7400:501 American Families in Poverty 3
- 7400:503 Advanced Food Preparation 3

**Total** 40

**Thesis or Project** (select one)

- 7400:694 Master’s Project 5
- 7400:699 Master’s Thesis 5

**Note:** The M.S. in Nutrition and Dietetics is not a route to becoming a Registered Dietitian (R.D.). Students interested in becoming R.D.s should contact the School for proper course selection, some of which can be done at the graduate level.

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**Speech-Language Pathology and Audiology**

The School of Speech-Language Pathology and Audiology offers a Master of Arts degree in Speech-Language Pathology. The program in speech-language pathology is designed to lead to professional licensure by the State of Ohio Board of Speech-Language Pathology and Audiology.

**Master of Arts degree in Speech-Language Pathology Program**

**H70006MA**

**Admission Requirements - Speech-Language Pathology**

- Hold an undergraduate major in speech-language pathology or completed post-baccalaureate in speech-language pathology
- Complete requirements for admission and send to Graduate School:
  * Application with intent to major in speech-language pathology
  * Official transcript with Fall term grades included
  * Three letters of recommendation
  * Graduate Record Examination scores
  * Resume
  * Statement of Purpose
  * Participation in group interview (for invited students only)
  * Graduate Assistantship - use Apply Online check box

Applications for admission in Fall or Spring are accepted and considered only once per year. Admission is competitive.

Applications for admission for the following academic year should be received by January 1.

**Degree Requirements**

- The master’s thesis is optional for students in speech-language pathology. All students will successfully complete a course of study with a minimum of 56 credits, two of which may be thesis credits for students electing the thesis option.
- Academic requirements within the school for speech-language pathology majors:

  - 7700:540 Augmentative Communication 3
  - 7700:561 Organization and Administration: Public School Speech-Language and Hearing Programs 2
  - 7700:590 Workshop 1-3
  - 7700:585 Developmental Disabilities 2
  - 7700:611 Research Methods in Communicative Disorders I 3
  - 7700:620 Articulation 2
  - 7700:623 Support Systems for Indiv and Families with Communicative Disorders 2
  - 7700:624 Neurogenic Speech and Language Disorders 3
  - 7700:626 Voice and Cleft Palate 3
  - 7700:627 Stuttering: Theories and Therapies 2
  - 7700:628 Topics in Differential Diagnosis of Speech and Language Disorders 2
  - 7700:630 Clinical Issues in Child Language 4
  - 7700:631 Acquired Brain Injury 3
  - 7700:632 Dysphagia 3
  - 7700:633 Professional Issues 2
  - 7700:639 Audiology for the Speech-Language Pathologist 3
  - 7700:650 Advanced Clinical Practicum: Speech-Language Pathology (three registrations) 3

- **7700:695 Externship: Speech Pathology and Audiology (two registrations) 6 each
- 7700:696 Externship Seminar (two registrations) 1 each

Completion of 5610:693 School-Based Externship: Speech-Language Pathology and 5610:691 School-Based Externship Seminar may be substituted for one 7700:695 registration and one 7700:696 SLP Seminar registration.

- Students must be registered for clinical practicum, externship, or student teaching during any academic period in which they are involved in in-house practicum, externship, or student teaching.

**Social Work**

**H75000MSW**

The Master of Social Work Program is a joint degree program administered by The University of Akron and Cleveland State University. The Joint MSW Program began in 1995. Distance learning technology, utilizing interactive video and audio systems, links faculty and students at the two institutions. The degree program is accredited by the Council on Social Work Education.

The curriculum of the Joint MSW Program is designed to prepare students for advanced level professional practice in social work. The program provides a rigorous intellectual base, an opportunity for effective skill development, and an educational perspective that views human diversity as desirable and enriching to society.

The Joint MSW Program offers:

- Preparation for the advanced practice of social work
- A degree program accredited by the Council on Social Work Education
- Part-time study
- Evening/weekend courses
- Regional field placements
- Advanced standing program for qualifying students with a BSW

### Admission Requirements

The Joint MSW Program is committed to diversity in the student body. An applicant for admission as a degree candidate in social work (either full-time, part-time, or advanced standing) must fulfill the general admission requirements of both the Graduate School and the MSW Program prior to admission. The applicant must therefore complete application forms for both the Graduate School and the MSW Program. It is the applicant’s responsibility to make sure that all required application materials have been received. Applications for full-time, part-time, and advanced standing close on February 15. All application materials must be received by this date. Full-time and part-time admissions are available only for the fall semester.

The applicant must submit the following to the Graduate School through the online graduate application:

- Graduate application form accompanied by the application fee
- An essay of 3-5 typed pages explaining:
  a) why he/she wants to be a social worker;
  b) why a graduate degree is felt to be necessary to fulfill his/her personal or professional objectives;
  c) his/her views regarding diversity in society;
  d) a situation in which he/she was the recipient/provider of help, emotionally, socially, or economically, and if/how this situation impacted the desire to pursue an advanced degree in social work.
- A recent resume which highlights social work or human service experience.
- Three letters of reference/recommendation forms (including one from immediate supervisor, if employed).
- A completed Application Checklist.
- Preferred Program Format Form.

In addition, applicants to the Joint MSW program must have:

- An official transcript from each college or university attended (must include content in human biology as well as liberal arts coursework) sent directly to the Graduate School
- Undergraduate degree in social work or a related field.
- Minimum GPA of 3.00 in social and behavioral science courses taken prior to application for admission.
- Well-balanced liberal arts curriculum.
- Interview with a member of the faculty may also be required.

Admission to the master’s degree program is on a selective basis and is determined by the academic preparation and personal qualifications of the applicant. Intellectual maturity, emotional stability, motivation, and the capacity to work with people are essential qualifications.

Openings for admission are limited, and competition is considerable. Individuals who have the strongest qualifications in terms of the MSW program’s admission criteria are selected for admission. Students admitted to the MSW program must register for courses the same calendar year they are accepted. Students must indicate their intention to enroll by the deadline indicated in the letter of acceptance.

The Advanced Standing option is an accelerated track of the MSW program that is completed in 11 months. Enrollment for the Advanced Standing is highly competitive, and limited to applicants who have excelled in all elements of an undergraduate social work program accredited by the Council on Social Work Education. It begins in June with a six-credit ten-week seminar followed by the micro or macro concentration year.

Students should indicate their preference for Advanced Standing in their application to the MSW program. The requirements for Advanced Standing include:

- A baccalaureate degree in social work completed within the last five years from a program accredited by the Council on Social Work Education;
- A minimum overall GPA of 3.0 and a minimum GPA in social work courses of 3.5 on a 4.0 scale;
- Demonstration of superior performance in field practicum as evidenced by submission of a final undergraduate field evaluation;
- For students graduating in May, acceptance will be contingent upon receipt of a final transcript and proof of BSW degree.

Applicants not accepted into Advanced Standing placement will be notified in writing of their option to enter the pool for admission into the full-time or part-time programs.

Applicants should be aware that having a prior felony conviction or prior sanctions for unprofessional conduct may impact future potential for obtaining licensure as well as field placements and social work employment. All individuals applying for a social work license in the state of Ohio are required to submit a criminal records check.

Students are expected to adhere to the program format under which they were admitted. Any changes in this initial admission status will be based on the program’s ability to accommodate the change. Changes must be requested in writing at the beginning of the previous academic year. The Admissions Committee may require an in-person interview at its discretion.

Scheduling of courses depends on the availability of rooms equipped with distance education technology as well as other factors. The days and times courses are offered may vary from year to year. Students enrolled in either full-time, part-time, or advanced standing programs must be prepared to be flexible when the schedule of classes changes.

### Transfer Students

An applicant who wishes to transfer from another MSW program must follow the same admission process and meet the same admission requirements as other degree candidates. A formal written request for transfer must be made at the time of application for admission. A maximum of 20 graduate credit hours may be transferred from another program accredited by the Council of Social Work Education. The credits must fall within the six-year time limit for degree completion. A grade of "B" or better is required for transfer credit. The Admissions Committee will determine acceptance of transfer credit. Credit will not be given for work or life experience.

Transfer students must submit field work evaluations at the time of application for admission.

### Program Requirements:

- Complete a minimum of 60 graduate credits of approved courses in social work with an average grade of “B” or better on all classroom courses and satisfactory grades in all field courses. Students must register only for 600-level courses.
- Complete an approved program of courses which include the following required courses:

#### Full Time Program

##### First Year Professional Foundation:

- **Fall Semester**
  - 7750:601 Foundation Field Practicum 3
  - 7750:601 Social Work Practice with Small Systems 3
  - 7750:622 Fundamentals of Research I 3
  - 7750:631 Human Behavior and Social Environment: Small Social Systems 3
  - 7750:646 Social Welfare Policy I 3

- **Spring Semester**
  - 7750:602 Foundation Field Practicum 3
  - 7750:606 Social Work Practice with Large Systems 3
  - 7750:647 Social Welfare Policy II 3
  - 7750:623 Fundamentals of Research II 3
  - 7750:632 Human Behavior and Social Environment: Large Systems 3

##### Second Year Concentrations (Direct Practice):

- **Fall Semester**
  - 7750:603 Advanced Field Practicum 3
  - 7750:607 Advanced Practice with Small Systems I 3
  - 7750:611 Dynamics of Racism and Discrimination 3
  - 7750:663 Psychopathology and Social Work 3
  - One elective 3

- **Spring Semester**
  - 7750:604 Advanced Field Practicum 3
  - 7750:608 Advanced Practice with Small Systems II 3
  - 7750:675 Program Evaluation 3
  - Two electives 6

##### Second Year Concentrations (Macro Practice):

- **Fall Semester**
  - 7750:603 Advanced Field Practicum 3
  - 7750:611 Dynamics of Racism and Discrimination 3
  - 7750:672 Community Organization and Planning 3
  - One elective 3

- **Spring Semester**
  - 7750:604 Advanced Field Practicum 3
  - 7750:671 Social Work Administration 3
  - 7750:673 Strategies of Community Organization 3
  - 7750:675 Program Evaluation 3
  - One elective 3

### Part-Time Program

#### Professional Foundation:

- **Fall Semester (First Year)**
  - 7750:631 HBSE: Small Systems 3
  - 7750:646 Social Welfare Policy I 3
– Spring Semester (First Year)
  7750:632 HBSE: Large Systems 3
  7750:647 Social Welfare Policy II 3

– Fall Semester (Second Year)
  7750:622 Fundamentals of Research I 3
  7750:605 Social Work Practice with Small Systems 3
  7750:601 Foundation Field Practicum 3

– Spring Semester (Second Year)
  7750:623 Fundamentals of Research II 3
  7750:606 Social Work Practice with Large Systems 3
  7750:602 Foundation Field Practicum 3
  7750:631 HBSE: Small Systems 3
  7750:646 Social Welfare Policy I 3

– Spring Semester (First Year)
  7750:632 HBSE: Large Systems 3
  7750:647 Social Welfare Policy II 3

– Fall Semester (Second Year)
  7750:622 Fundamentals of Research I 3
  7750:605 Social Work Practice with Small Systems 3
  7750:601 Foundation Field Practicum 3

Concentrations (Direct Practice):
– Fall Semester (Third Year)
  7750:611 Dynamics of Racism and Discrimination 3
  7750:663 Psychopathology and Social Work 3

– Spring Semester (Third Year)
  Two electives 6

– Fall Semester (Fourth Year)
  7750:607 Advanced Practice with Small Systems I 3
  7750:603 Advanced Field Practicum 3
  One elective 3

– Spring Semester (Fourth Year)
  7750:608 Advanced Practice with Small Systems II 3
  7750:604 Advanced Field Practicum 3
  7750:675 Program Evaluation 3

Concentrations (Macro Practice):
– Fall Semester (Third Year)
  7750:611 Dynamics of Racism and Discrimination 3
  7750:674 Community, Economic Systems and Policy Analysis 3

– Spring Semester (Third Year)
  7750:671 Social Work Administration 3
  One elective 3

– Fall Semester (Fourth Year)
  7750:672 Community Organization and Planning 3
  7750:603 Advanced Field Practicum 3
  One elective 3

– Spring Semester (Fourth Year)
  7750:673 Strategies of Community Organization 3
  7750:675 Program Evaluation 3
  7750:604 Advanced Field Practicum 3
  One elective 3

Advanced Standing Program

Direct Practice Concentration
– Summer Semester
  7750:650 Advanced Standing Integrative Seminar 6

– Fall Semester
  7750:611 Dynamics of Racism and Discrimination 3
  7750:663 Psychopathology and Social Work 3
  7750:607 Advanced Practice with Small Systems I 3
  7750:603 Advanced Field Practicum 3
  One elective 3

– Spring Semester
  7750:675 Program Evaluation 3
  7750:608 Advanced Practice with Small Systems II 3
  7750:604 Advanced Field Practicum 3
  Two electives 6

Macro Practice Concentration
– Summer Semester
  7750:650 Advanced Standing Integrative Seminar 6

– Fall Semester
  7750:611 Dynamics of Racism and Discrimination 3
  7750:672 Community Organization and Planning 3
  7750:674 Community, Economic Systems and Policy Analysis 3
  7750:603 Advanced Field Practicum 3
  One elective 3

– Spring Semester
  7750:671 Social Work Administration 3
  7750:673 Strategies of Community Organization 3
  7750:675 Program Evaluation 3
  7750:604 Advanced Field Practicum 3
  One elective 3

Testing Out Policy
In order to avoid duplication and redundancy of course content during the foundation year, the MSW Program allows students the opportunity to test out of the following courses:
  7750:631 Human Behavior and Social Environment: Small Social Systems
  7750:646 Social Welfare Policy
  7750:622 Fundamentals of Research I

Students wishing to test out of one or more of the above courses must notify the MSW Program Director at least three weeks prior to the start of the semester in which the course is normally taught. The proficiency exam must be taken prior to classes starting in that semester. There are no fees or penalties associated with taking these exams, however, each exam may be taken only once.

Additional information about the MSW Program may be obtained from the School of Social Work.
College of Creative and Professional Arts

Chand Midha, Ph.D., Acting Interim Dean
Neil Sapienza, M.S., Interim Associate Dean

Organization
Offering undergraduate and graduate degrees, The University of Akron's College of Creative and Professional Arts includes four schools: The School of Art, School of Communication, School of Dance, Theatre, and Arts Administration, and School of Music. In addition, the College includes E.J. Thomas Performing Arts Hall, the region's flagship performance venue.

The College places a premium on learning by doing. Students study side-by-side with talented and caring faculty members who are committed to helping them turn their aspirations into accomplishments. More information about the College of Creative and Professional Arts can be found at http://www.uakron.edu/artscollege.

Points of Excellence:
• Graduate students learn how to manage nonprofit arts organizations while enrollment in the UA Arts Administration Program, one of fewer than 30 such programs nationwide. The program draws students from around the world and has an outstanding placement record for intern and alumni.
• The UA School of Communication provides invaluable hands-on experience for students through an internship program, service learning projects in the community, well-equipped media and computer laboratories, and student-operated WZIP-FM and Z-TV.
• The Summer Master's Program in Theatre enables students to earn an M.A. degree in theatre or obtain K-12 licensure in theatre in three highly intensive five-week sessions over three summers. The program is designed for highly motivated elementary, middle school, and high school teachers and others interested in deepening their theatre experience and professional opportunities.
• The School of Music offers graduate programs in performance and music education. An impressive 100 percent placement rate has been achieved consistently over the years by music education graduates who choose to teach. In recent years students in the School of Music have had the opportunity to work and perform with guest artists in residence such as Grammy and Oscar award-winning singer-songwriter Randy Newman, composer Marvin Hamlisch, Boston Pops conductor Keith Lockhart, jazz trumpeter Wynton Marsalis, and singer Maureen McGovern.

Music
The degree Master of Music is offered by the School of Music with options in music education, performance, composition, theory, music history and literature, and accompanying.

Admission Requirements
• Students must have earned an undergraduate baccalaureate degree in music or the equivalent as determined by the department.
• The Graduate School's requirements for admission.
• Three letters of recommendation.
• The performance and accompanying options require an audition on the student’s major instrument/voice. Please contact the coordinator of Graduate Studies for an audition time.
• Applicants of composition, theory, and history options must pass departmental diagnostic exams in their area of study.
• The composition option requires the presentation of a portfolio of original compositions to the area coordinator. The theory and history options require presentation of a document showing evidence of scholarly writing.
• The options in music education, music theory, and music history and literature require an interview with faculty in the appropriate area.

Applications are accepted on a rolling basis. The student should consult with the coordinator of Graduate Studies in Music for additional information regarding the individualized nature of each option. For the performance option in voice, a proficiency equal to two semesters each of Italian, German and French are required for completion of the Master of Music Degree in Voice Performance.

After completion of all course work, the student must pass an examination covering the graduate program. This examination is individualized for each candidate’s unique program.

Composition Option
(C50003MM)
• Music core courses – eight credits (to be selected):

7500:555 Advanced Conducting: Instrumental 2
7500:556 Advanced Conducting: Choral 2
7500:615 Musical Styles and Analysis I (Chant through Palestrina) 2
7500:616 Musical Styles and Analysis II (Baroque through early Beethoven) 2
7500:617 Musical Styles and Analysis III (Late Beethoven through Mahler/Strauss) 2
7500:619 Theory and Pedagogy 2

• Major required courses – 21-23 credits:

7500:601 Choral Literature 2
7500:618 Musical Styles and Analysis IV (20th Century) 2
7500:624 Music History Survey: Music Since 1900 2
7500:647 Master's Chamber Recital 1
7500:699 Master's Thesis/Project 4-6
7510.6— Ensemble (participation in two ensembles required) 2
7520:642 Applied Composition 8

• Additional music courses – zero to two credits.

Graduate-level (music) courses, workshops, applied lessons (other than in composition) and/or advanced problems to be selected by the student and advisor.

• Electives – three credits

To be selected by student and advisor, Areas include graduate-level courses in other disciplines, such as theatre arts, in which the student obtains permission of instructor, or 7520:642 Applied Composition.

Degree total: 34-36 credits.

Music Education Option
(C50016MM: Thesis Option)
(C50006MM: Nonthesis Option)

Thesis Option – 32 credits
• Required Music Education Core Courses – 13-15 credits

7500:611 Foundations of Music Education (summer) 3
7500:612 Practices and Trends in Music Education (fall) 3
7500:614 Measurement and Evaluation in Music Education (spring) 3
7500:699 Master's Thesis/Project 4-6

• Additional music/education courses – select 17-19 credits with approval

7500:675 Seminar in Music Education 9
7500:697 Advanced Problems in Music Education 4
7500:590 Music Workshops 6
7520:5—/6— Applied Music 8
7510.6— Ensemble 2
7500:5—/6— Other music courses 8
5100:5—/6— Educational Foundations and Leadership 4
5170:5—/6— General Administration 4
55—/6— Curricular and Instructional Studies 4
5500:780 Seminar in Curricular and Instructional Studies (Maximum of 4 credits of 5500:780)

Non-Thesis Option – 34 credits
• Required Music Education Core Courses – 9 credits

7500:611 Foundations of Music Education (summer) 3
7500:612 Practices and Trends in Music Education (fall) 3
7500:614 Measurement and Evaluation in Music Education (spring) 3

• Additional music/education courses – select 25 credits with approval

7500:675 Seminar in Music Education 9
7500:697 Advanced Problems in Music Education 4
7500:590 Music Workshops 6
7520:5—/6— Applied Music 8
7510.6— Ensemble 2
7500:5—/6— Other music courses 8
5100:5—/6— Educational Foundations and Leadership 4
5170:5—/6— General Administration 4
55—/6— Curricular and Instructional Studies 4
5500:780 Seminar in Curricular and Instructional Studies 4

Music Education: Instrumental Option
(C50017MM: Thesis Option)
(C500010MM: Nonthesis Option)

Thesis Option – 32 credits
• Required Music Education Core Courses – 13-15 credits

7500:611 Foundations of Music Education (summer) 3
7500:612 Practices and Trends in Music Education (fall) 3
7500:614 Measurement and Evaluation in Music Education (spring) 3
7500:699 Master's Thesis/Project 4-6

(courses must be related to instrumental music education)
Music Education: Choral/General Music Option
(C50019MM: Thesis Option)
(C50018MM: Nonthesis Option)

Thesis Option – 32 credits

• Required Music Education Core Courses – 13-16 credits
  7500:611 Foundations of Music Education (summer) 3
  7500:612 Practices and Trends in Music Education (fall) 3
  7500:614 Measurement and Evaluation in Music Education (spring) 3

• Additional music/education courses – select 25 credits with approval of music education and graduate advisors. A minimum of 22 credits must be related to instrumental music education. Choices may include the following:
  7500:675 Seminar in Music Education 9
  7500:697 Advanced Problems in Music Education 4
  7500:590 Music Workshops 6
  7520:5—6— Applied Music 6
  7510:5—6— Ensemble 2
  7520:5—6— Other music courses 8
  5100:5—6— Educational Foundations and Leadership 4
  5170:5—6— General Administration 4
  55—5—6— Curricular and Instructional Studies 4
  or
  5500:780 Seminar in Curricular and Instructional Studies 1-3

Non-Thesis Option – 34 credits

• Required Music Education Core Courses – 9 credits
  7500:675 Seminar in Music Education 9
  7500:697 Advanced Problems in Music Education 4
  7500:590 Music Workshops 6
  7520:5—6— Applied Music 6
  7510:5—6— Ensemble 2
  7520:5—6— Other music courses 8
  5100:5—6— Educational Foundations and Leadership 4
  5170:5—6— General Administration 4
  55—5—6— Curricular and Instructional Studies 4
  or
  5500:780 Seminar in Curricular and Instructional Studies 1-3

Music History and Literature Option
(C50004MM)

• Music core courses – eight credits (to be selected):
  7500:555 Advanced Conducting: Instrumental 2
  7500:556 Advanced Conducting: Choral 2

Non-Thesis Option – 34 credits

• Required Music Education Core Courses – 17-19 credits with approval of music education and graduate advisors. A minimum of 16 credits must be related to instrumental music education. Choices may include the following:
  7500:675 Seminar in Music Education 9
  7500:697 Advanced Problems in Music Education 4
  7500:590 Music Workshops 6
  7520:5—6— Applied Music 6
  7510:5—6— Ensemble 2
  7520:5—6— Other music courses 8
  5100:5—6— Educational Foundations and Leadership 4
  5170:5—6— General Administration 4
  55—5—6— Curricular and Instructional Studies 4
  or
  5500:780 Seminar in Curricular and Instructional Studies 1-3

• Additional music/education courses – select 25 credits with approval of music education and graduate advisors. A minimum of 22 credits must be related to instrumental music education. Choices may include the following:
  7500:675 Seminar in Music Education 9
  7500:697 Advanced Problems in Music Education 4
  7500:590 Music Workshops 6
  7520:5—6— Applied Music 6
  7510:5—6— Ensemble 2
  7520:5—6— Other music courses 8
  5100:5—6— Educational Foundations and Leadership 4
  5170:5—6— General Administration 4
  55—5—6— Curricular and Instructional Studies 4
  or
  5500:780 Seminar in Curricular and Instructional Studies 1-3

Music Technology Option
(C50205MM)

The Master of Music, Music Technology Option is designed to give the student additional exposure to the functional areas of music plus an advanced concentration in music technology and related businesses. The program provides a framework of conceptual, technical and professional knowledge which will assist the student in career opportunities of fields related to music technology. Students will leave the program with a portfolio of tutorials, recorded works, and/or computer software.

• Music core courses – six credits (to be selected):
  7500:555 Advanced Conducting: Instrumental 2
  7500:556 Advanced Conducting: Choral 2
  7500:615 Musical Styles and Analysis I 2
  7500:616 Musical Styles and Analysis II 2
  7500:617 Musical Styles and Analysis III 2
  7500:621 Music History Survey: Middle Ages and Renaissance 2
  7500:622 Music History Survey: Baroque 2
  7500:623 Music History Survey: Classic and Romantic 2
  7500:624 Music History Survey: Music Since 1900 2

• Required Music Education Core Courses – 23-26 credits:
  7500:555 Advanced Conducting: Instrumental 2
  7500:556 Advanced Conducting: Choral 2
  7500:615 Musical Styles and Analysis I 2
  7500:616 Musical Styles and Analysis II 2
  7500:617 Musical Styles and Analysis III 2
  7500:621 Music History Survey: Middle Ages and Renaissance 2
  7500:622 Music History Survey: Baroque 2
  7500:623 Music History Survey: Classic and Romantic 2
  7500:624 Music History Survey: Music Since 1900 2

• Major required courses – 22-25 credits:
  7500:555 Advanced Conducting: Instrumental 2
  7500:556 Advanced Conducting: Choral 2
  7500:615 Musical Styles and Analysis I 2
  7500:616 Musical Styles and Analysis II 2
  7500:617 Musical Styles and Analysis III 2
  7500:621 Music History Survey: Middle Ages and Renaissance 2
  7500:622 Music History Survey: Baroque 2
  7500:623 Music History Survey: Classic and Romantic 2
  7500:624 Music History Survey: Music Since 1900 2

• Electives – 2 credits. To be selected by the student and advisor. Areas include graduate-level courses in other disciplines in which student obtains permission of instructor.

Degree Total: 34-36 credits.

Performance Option in Accompanying
(C50008MM)

• Music core courses – Eight credits (to be selected):
  7500:555 Advanced Conducting: Instrumental 2
  7500:556 Advanced Conducting: Choral 2
  7500:557 Advanced Conducting: Combined 2
  7500:615 Musical Styles and Analysis I (Chant through Palestrina) 2
  7500:616 Musical Styles and Analysis II (Baroque through early Beethoven) 2
  7500:617 Musical Styles and Analysis III (Late Beethoven through Mahler/Strauss) 2
  7500:618 Musical Styles and Analysis IV (20th Century) 2
  7500:621 Music History Survey: Middle Ages and Renaissance 2
  7500:622 Music History Survey: Baroque 2
  7500:623 Music History Survey: Classic and Romantic 2
  7500:624 Music History Survey: Music Since 1900 2

• Major required courses – 23-26 credits:
  500:562 Repertoire and Pedagogy: Organ 3
  7500:633 Teaching and Literature: Piano and Harpsichord 2
  7500:640 Advanced Accompaniment I 1
  7500:641 Advanced Accompaniment II 1
  7500:642 Advanced Accompaniment III 1
  7500:643 Advanced Accompaniment IV 1
  7500:666 Advanced Song Literature I 2
  7500:699 Master’s Thesis/Project 4-6

• Additional music courses – two to three credits.

• Non-Thesis Option – 33 credits

• Major required courses – 20-22 credits:

• Additional music courses – two to four credits.

• Graduate-level (music) workshops, applied music and/or courses to be selected by the student and advisor.

• A minimum reading proficiency in German is required. If a student lacks background in this language, completion of undergraduate courses may be necessary.

• Electives – two to four credits. To be selected by the student and advisor. Areas include graduate-level courses in other disciplines in which student obtains permission of instructor.

Degree Total: 33 credits.
**Elective – 2 credits.**

Areas may include graduate-level courses in other disciplines, such as theatre arts, for which the student obtains permission of instructor, or additional music courses, as determined by the student and advisor.

Degree total: 33-36 credits

Graduate-level (music) courses, advanced problems, workshops and/or applied lessons, to be selected by the student and advisor.

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**Music Core Courses (8 credits to be selected):**

- 7500:555 Advanced Conducting: Instrumental 2
- 7500:556 Advanced Conducting: Choral 2
- 7500:615 Musical Styles and Analysis I (Choral through Palestrina) 2
- 7500:616 Musical Styles and Analysis II (Baroque through early Beethoven) 2
- 7500:617 Musical Styles and Analysis III (Late Beethoven through Mahler/Straus) 2
- 7500:621 Music History Survey: Middle Ages and Renaissance 2
- 7500:622 Music History Survey: Baroque 2
- 7500:623 Music History Survey: Classic and Romantic 2
- 7500:624 Music History Survey: Music Since 1900 2

**Major required courses – 16-18 credits:**

- 7500:618 Musical Styles and Analysis IV (20th Century) – 2
- 7510:6— Ensemble participation in two ensembles required** 2-4
- 7520:6— Applied Music (select appropriate instrument) 2

**Select one of the following as appropriate to major instrument:**

- 7500:630 Teaching and Literature: Brass Instruments 2
- 7500:631 Teaching and Literature: Woodwind Instruments 2
- 7500:532 Teaching and Literature: Percussion Instruments 2
- 7500:634 Teaching and Literature: String Instruments 2
- 7500:698 Graduate Recital 2

**Additional music courses – six credits.**

Graduate-level (music) workshops, applied lessons, advanced problems and/or courses to be selected by student and advisor.

**Electives – four credits.**

Areas may include graduate-level courses in other disciplines, such as theatre arts, for which the student obtains permission of instructor, or additional music courses, as determined by the student and advisor.

Degree total: 34-36 credits.

Note: No more than a total of 16 credits of 7520 courses may be applied to the degree.

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**Performance Option in Voice (C50109MM)**

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**Music core courses: 8 credits to be selected:**

- 7500:555 Advanced Conducting: Instrumental 2
- 7500:556 Advanced Conducting: Choral 2
- 7500:615 Musical Styles and Analysis I (Chant through Palestrina) 2
- 7500:616 Musical Styles and Analysis II (Baroque through early Beethoven) 2
- 7500:617 Musical Styles and Analysis III (Late Beethoven through Mahler/Straus) 2
- 7500:621 Music History Survey: Middle Ages and Renaissance 2
- 7500:622 Music History Survey: Baroque 2
- 7500:624 Music History Survey: Music Since 1900 2
- 7500:604 Development of Opera 2

**Major required courses – 20-22 credits:**

- 7500:618 Musical Styles and Analysis IV (20th Century) 2
- 7500:665 Vocal Pedagogy 2
- 7500:666 Advanced Song Literature I 2
- 7500:667 Advanced Song Literature II 2
- 7500:698 Graduate Recital 2
- 7510:6— Ensemble participation in two ensembles required** 2-4
- 7520:624 Applied Voice 2

**Additional music courses – 2 credits (suggested minimum).**

Graduate-level (music) courses, workshops, advanced problems and/or applied lessons, to be selected by student and advisor.

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**Electives – 4 credits.**

Areas may include graduate-level courses in other disciplines, such as theatre arts, for which the student obtains permission of instructor, or additional music courses, as determined by the student and advisor.

Degree total: 34-36 credits.

Note: No more than a total of 16 credits of 7520 courses may be applied to the degree.

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**Performance Option in Keyboard (C50100MM: Piano Performance) (C50104MM: Organ Performance)**

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**Music core courses: eight credits (to be selected):**

- 7500:556 Advanced Conducting: Instrumental 2
- 7500:556 Advanced Conducting: Choral 2
- 7500:615 Musical Styles and Analysis I (Chant through Palestrina) 2
- 7500:616 Musical Styles and Analysis II (Baroque through early Beethoven) 2
- 7500:617 Musical Styles and Analysis III (Late Beethoven through Mahler/Straus) 2
- 7500:621 Music History Survey: Middle Ages and Renaissance 2
- 7500:622 Music History Survey: Baroque 2
- 7500:623 Music History Survey: Classic and Romantic 2
- 7500:624 Music History Survey: Music Since 1900 2
- 7500:633 Teaching and Literature: Piano and Harpsichord 2
- 7500:697 Advanced Problems in Music 2
- 7500:698 Graduate Recital 2
- 7510:614 Keyboard Ensemble participation in two ensembles required** 2-4
- 7520:6— Applied Music (piano, organ and/or harpsichord) 8

**Additional music courses – three to four credits.**

Graduate-level (music) courses, advanced problems, workshops and/or applied lessons, to be selected by the student and advisor.

**Electives – four credits.**

Areas may include graduate level courses in other disciplines, such as theatre arts, for which the student obtains permission of instructor, or additional music courses, as determined by the student and advisor.

Degree total: 34-36 credits.

Note: No more than a total of 16 credits of 7520 courses may be applied to the degree.

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**Performance Option: Choral Conducting (C50110MM)**

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**Music Core Courses (8 credits):**

- 7500:615 Musical Styles and Analysis I 2
- 7500:616 Musical Styles and Analysis II 2
- 7500:617 Musical Styles and Analysis III 2
- 7500:621 Music History Survey: Middle Ages and Renaissance 2
- 7500:622 Music History Survey: Baroque 2
- 7500:624 Music History Survey: Music Since 1900 2
- 7500:556 Advanced Choral Conducting 2
- 7500:570 Studies in Choral Literature I (Medieval/Renaissance) 2
- 7500:571 Studies in Choral Literature II (Baroque) 2
- 7500:572 Studies in Choral Literature III (Classical/Romantic) 2
- 7500:573 Studies in Choral Literature IV (20th Century) 2
- 7500:675 Seminar in Music Education: Group Vocal Techniques 2
- 7500:697 Advanced Problems in Music (Choral Conducting) 2
- 7500:698 Graduate Recital 2
- 7510:620-21 Ensemble** 2
- 7520:524 Applied Music 4

**Electives (3 credits):**

Areas may include graduate-level courses in other disciplines, with permission of the instructor, or additional music courses other than ensembles.

Total credit: 36

Note: No more than a total of 16 credits of 7520 courses may be applied to the degree.

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*It is recommended that each student’s graduate committee recommend the appropriate elective credits.

**Two semesters ensemble participation required for degrees completed in two semesters. Four semesters ensemble participation required for degrees completed in four semesters.
Program Requirements

Note: Even though an applicant is eligible for consideration, an offer of admission is not guaranteed.

Admission Requirements

• Meet the general requirements for admission to the Graduate School.

• Essay of no more than 500 words outlining reasons for choosing graduate program in Communication at The University of Akron.

• Possess an undergraduate major in communication, journalism or a related field; or, complete at least 15 semester credits of undergraduate communication coursework approved by the department.

Note: Even though an applicant is eligible for consideration, an offer of admission is not guaranteed.

Program Requirements

• Complete 36 credits, distributed as follows:

  School core courses - 15 credits:
  7600:600 Introduction to Graduate Study in Communication 3

  Electives - zero to two credits.

  Additional music courses - zero to two credits.

  Graduate-level (music) workshops, applied music (other than composition), advanced problems, and/or courses to be selected by student and advisor.

• Electives - zero to two credits. To be selected by student and advisor. Areas include graduate-level courses in other disciplines in which student obtains permission of instructor or 7520:642 Applied Composition.

Degree total: 34-36 credits.

*Participation in Orchestra required for all semesters in residence. The applicant must successfully pass an interview and audition with the orchestra conducting faculty member and an audition on his/her particular applied instrument.

Theory Option

(C50009MM)

• Music core courses – six credits (to be selected):
  7500:555 Advanced Conducting: Instrumental 2
  7500:556 Advanced Conducting: Choral 2
  7500:621 Music History Survey: Middle Ages and Renaissance 2
  7500:622 Music History Survey: Baroque 2
  7500:623 Music History Survey: Classic and Romantic 2
  7500:624 Music History Survey: Music Since 1900 2
  7500:625 Bibliography and Research 2

• Major required courses – 26-28 credits:
  7500:615 Musical Styles and Analysis I (Chant through Palestrina) 2
  7500:616 Musical Styles and Analysis II (Baroque through early Beethoven) 2
  7500:617 Musical Styles and Analysis III (Late Beethoven through Mahler/Strauss) 2
  7500:618 Musical Styles and Analysis IV (20th Century) 2
  7500:619 Theory and Pedagogy 2
  7500:697 Advanced Problems in Music 2
  7500:699 Master’s Thesis/Project 4-6
  7510:690-21 Orchestration* 4
  7520:6xx Applied Music (required) 8
  Total credits 37

• Additional music courses – zero to two credits.

  Graduate-level (music) workshops, applied music (other than composition), advanced problems, and/or courses to be selected by student and advisor.

• Electives – zero to two credits.

  To be selected by student and advisor. Areas include graduate-level courses in other disciplines in which student obtains permission of instructor or 7520:642 Applied Composition.

Degree total: 34-36 credits.

Communication

(C60004MA)

The School of Communication offers the master of arts degree in a coordinated program of communication arts.

Admission Requirements

• Meet the general requirements for admission to the Graduate School.

• Essay of no more than 500 words outlining reasons for choosing graduate program in Communication at The University of Akron.

• Possess an undergraduate major in communication, journalism or a related field; or, complete at least 15 semester credits of undergraduate communication coursework approved by the department.

Note: Even though an applicant is eligible for consideration, an offer of admission is not guaranteed.

Program Requirements

• Complete 36 credits, distributed as follows:

  School core courses - 15 credits:
  7600:600 Introduction to Graduate Study in Communication 3

  Electives – zero to two credits.

  Additional music courses – zero to two credits.

  Graduate-level (music) workshops, applied music (other than composition), advanced problems, and/or courses to be selected by student and advisor.

  Electives – zero to two credits.

  To be selected by student and advisor. Areas include graduate-level courses in other disciplines in which student obtains permission of instructor or 7520:642 Applied Composition.

Degree total: 34-36 credits.

*Participation in Orchestra required for all semesters in residence. The applicant must successfully pass an interview and audition with the orchestra conducting faculty member and an audition on his/her particular applied instrument.

Theatre Arts

The School of Dance, Theatre, and Arts Administration offers a master of arts degree.

Admission Requirements

• Complete the general requirements for admission to the Graduate School.

• Complete an undergraduate major in the area of proposed graduate work or equivalent work as approved by the coordinator of the graduate arts administration/theatre program.

• Statement of purpose (no more than 300 words) summarizing background and outlining career goals.

All application materials must be received by March 15 for fall enrollment.

Arts Administration Option

(C80006MA)

• Complete a minimum of 45 credits.

• Required theatre arts courses (30-33) credits:
  7850:600 Research and Writing Techniques 3
  7850:605 Colloquium in the Arts 3
  7850:665 Audience Development 3
  7850:666 Principles of Arts Administration 3
  7850:662 Fund Raising and Grantsmanship in the Arts 3
  7850:691 Arts Administration Policies and Practices 3
  7850:692 Legal Aspects of Arts Administration 3
  7850:694 Internship 4-6
  7850:699 Master’s Thesis 6

• Required business courses (9 credits):
  6200:590 Special Topics in Accounting 3
  6500:600 Management and Organizational Behavior 3
  6600:600 Marketing Concepts 3
  or 6600:630 Marketing of Services 3

• Electives in related fields (3-6 credits):

  Options here include coursework in business, computer science, urban studies, art, music, law, theatre and dance.

• Complete an oral defense of the thesis.

• General electives 0-3

Theatre Option

(C80002MA)

(Summer program)

Complete a minimum of 36 credits distributed as follows:

• School core courses - 24 credits:
  7780:600 Research and Writing Techniques 3
  7780:614 Problems in Directing 3
  7780:645 Seminar in Dramatic Literature 3
  7780:646 Graduate Acting Techniques 3
  7780:658 History of Theatre 3
  7780:662 Seminar in Scenic Design 3
  7780:699 Master’s Thesis 6

• Electives:

  12 credits to be selected from Theatre Arts, English, Communication, Music, etc., in consultation with the student’s advisor or the graduate program coordinator.
College of Nursing

Roberta DePompeii, Ph.D., Interim Dean
Diana L. Biori, Ph.D., R.N., FA.A.N., Associate Dean, Research and Graduate Programs
Marlene Huff, Ph.D., R.N., Coordinator, Progression and Graduate Programs
Kathleen Ross-Alaolmiki, Ph.D., R.N., Associate Dean, Undergraduate Nursing Programs and Innovation
Annette Mitzel, M.S.N., R.N., Director, Nursing Center for Community Health

http://www.uakron.edu/nursing/

Mission Statement

As an integral part of The University of Akron, the College of Nursing promotes the general mission of The University of Akron. The college offers diverse and comprehensive nursing education programs at the undergraduate and graduate levels. The programs of study, based on professional standards, prepare individuals to provide nursing care in a variety of settings. The College of Nursing supports nursing research that contributes to the health and well-being of society. The college is committed to serving culturally, socially, and ethically diverse populations. Through academic and community collaboration, the college promotes excellence in nursing education, research, practice, and service.

Goals

• Prepare generalist and advanced practice nurses who are eligible for initial licensure and for certification.
• Prepare scholars in nursing at the doctoral level, focusing on the conduct of nursing research and the dissemination of research findings with their implications for nursing practice and health care policy.
• Provide a foundation for lifelong commitment to professional development and scholarship through continuing education and advanced study at the master’s and doctoral levels.
• Prepare nurses who are sensitive in caring for diverse populations in a variety of settings.
• Prepare professional practitioners who integrate leadership roles and ethical standards in a continuously changing health care arena and society.

Philosophy

The College of Nursing faculty believe that the foci of professional nursing are individuals, families and communities.

The Individual is seen as a complex whole whose existence involves patterns, dynamic change, transformation and interdependence. The individual interrelates within the environment in biological, psychological, social, spiritual, cultural and other dimensions. The individual is unique and universal. The individual is a thinking, feeling, interacting, evolving, creating, valuing being.

Families are individuals dynamically connected with each other over time in traditional and nontraditional family configurations.

Communities are groups of people with one or more common characteristics who are in relationship to one another and may or may not interact.

Health is comparative, dynamic, multidimensional and has personal meaning. It includes disease, nondisease and quality of life. People have the right to participate in decisions affecting and effecting personal health.

Environment includes all living and nonliving dimensions with which the individual, family and community have interrelationships. The dynamic environmental interrelationships define and establish rules for health and modes of action.

Nursing is an art and a science. The discipline of nursing is concerned with individual, family and community and their responses to health within the context of the changing health care environment. Professional nursing includes the appraisal and the enhancement of health. Personal meanings of health are understood in the nursing situation within the context of familial, societal and cultural meanings. The professional nurse uses knowledge from theories and research in nursing and other disciplines in providing nursing care. The role of the nurse involves the exercise of social, cultural, and political responsibilities, including accountability for professional actions, provision of quality nursing care, and community involvement.

Education is an individualized, life-long process. Learning includes the individual’s interrelations with the environment, knowledge and skill acquisition, development of critical thinking, and self-awareness. Self-expression enables the student to respond to clients who have unique human values and cultural heritage. Each nursing student brings attitudes, beliefs, values, feelings, knowledge and experience into the learning environment. These variables influence learning that occurs through continual construction and reconstruction of experience in relation to environmental influences.

Nursing education at the baccalaureate level synthesizes knowledge from nursing, humanities, social, cultural, physical and natural sciences to operationalize clinical decision-making. The student is prepared to function as nurse generalist in a variety of settings. Faculty and student continually seek to refine the commitment to and understanding of the relationship between theory and practice. Students are encouraged to become self-directed, collaborative, interdependent and independent. These variables are the foundation for life-long learning and professional development.

Nursing education at the master’s level builds upon baccalaureate nursing education and provides a foundation for doctoral study. Graduate education at this level prepares advanced practice nurses with expertise in critical thinking and decision making, effective communication, and therapeutic interventions. Through a variety of learning experiences, master of science in nursing students analyze and use theoretical formulations and research findings in advanced practice.

Nursing education at the doctoral level prepares nurses for full participation in the discipline as scholars and researchers. Emphasis is placed on the development of nurses who are informed about the many dimensions of scholarship, including research, practice and teaching, and the integration of the three. Through various didactic, collaborative and research opportunities, doctoral students learn how to develop and test knowledge about health, illness and nursing care, and how to use this knowledge to enhance teaching, improve patient care, and influence health care policy.

JOINT PROGRAM FOR THE DOCTOR OF PHILOSOPHY IN NURSING

(B20000PHD)

Kent State University and The University of Akron offer the Joint Ph.D. in Nursing (JPDN), a single doctoral program with a single, unified doctoral nursing faculty and doctoral student body. Students may choose which university will grant their degree. The diploma will be issued from the student’s university of record and will recognize the Joint Doctor of Philosophy program. JPDN courses will be cross listed and scheduled at each university.

Program Purpose and Description: Preparation of Scholars in Nursing

The JPDN program is characterized by excellence through scholarship, integrity, and caring. The primary purpose of the JPDN is to produce nurse scholars. This purpose will be realized through the development and testing of theories and models of nursing science and nursing practice, the consideration of the social, political, legal, and economic implications of health care policies and practices, and the dissemination of knowledge.

Graduates will be characterized by their leadership and their ability to conduct and apply research, to integrate and extend knowledge through teaching, and to develop and implement health care policy. Interdisciplinary collaboration and community outreach will be emphasized throughout the program.

Admission, Progression, and Graduation

Students may apply to the joint program through the Graduate Colleges or the Colleges of Nursing at either Kent State University or The University of Akron. Completed applications should be returned to the addresses indicated on the application forms. Applications are accepted on a rolling basis and will be reviewed by the JPDN admissions committee with a single set of JPDN admission criteria.

Each applicant for admission into the Ph.D. in Nursing Program must meet the following criteria:

• Evidence of successful completion of a master’s degree in nursing at an accredited program with a minimum graduate grade point average of 3.0 on a 4.0 scale.
• Evidence of current licensure, or eligibility for licensure, by the Ohio Board of Nursing.
• Official evidence of scores on the Graduate Record Examination.
• A clear and succinct statement about the applicant’s need for the doctorate and its application toward clearly defined career goals.
• A sample of written work that indicates the logic and writing skills of the applicant, for example, by an essay, term paper, thesis, published article, or professional report.
• Three (3) letters of reference from professionals or professors who can adequately evaluate the applicant and the applicant’s previous work or potential for success.
• At the request of the JPDN admission committee, successfully complete a personal interview with a graduate faculty member who will assess research interests and motivation for successful completion of doctoral study in the JPDN program.
Program Description and Curriculum

The JPDN is a post master’s degree, requiring 72 semester credit hours including the dissertation. It consists of five components, with selected customization to student interests. The nursing knowledge component examines knowledge and theory development as well as courses in selected domains of nursing knowledge related to student interest and faculty expertise. Research methods, designs, and statistics examines approaches to both qualitative and quantitative research. Students must select at least one advanced research methods course to promote their research agenda; i.e., program evaluation, advanced qualitative or quantitative methods, or grantsmanship. Cognates will be chosen from courses outside the program, which support the student’s research interest. Health care policy courses focus on health care and nursing issues. These four components culminate into the fifth component, the dissertation, which follows the successful completion of the qualifying examination. The course work in each of these five components follows.

Structure and content of nursing knowledge:

Five required courses (15 credits)
8200:810 History and Philosophy of Nursing Science 3
8200:815 Theory Construction and Development in Nursing 3
8200:820 Introduction to Nursing Knowledge Domains 3
8200:840 Nursing Science Seminar I 3
8200:850 Nursing Science Seminar II 3

Research methods, designs, and statistics:

Four required methods/design courses (12 credits)
8200:824 Foundations of Scholarly Inquiry in Nursing 3
8200:826 Quantitative Research Methods 3
8200:830 Qualitative Research Methods 3
8200:845 Advanced Methods for Research 3
(1 advanced nursing research methods course selected with the approval of the student’s academic adviser)

Two required statistics courses (6 credits)
8200:827 Advanced Health Care Statistics I 3
8200:837 Advanced Health Care Statistics II 3

Cognates:

Three required courses (8 credits)

Cognates
(2 courses are selected with the approval of the student’s academic advisor)

Electives:

8200:892 Field Experience in Nursing 1-12
8200:895 Special Topics in Nursing 1-6
8200:896 Individual Investigation in Nursing 1-3
8200:898 Research in Nursing 1-15

Qualifying for Candidacy for the Doctoral Dissertation

• All students in the JPDN Program are required to successfully complete a qualifying examination before proceeding to conduct dissertation research. To be eligible for candidacy for the dissertation, students must have completed 42 hours of required courses, have maintained a minimum GPA of 3.0 on a 4.0 scale in the doctoral program, have successfully completed the qualifying examination, and have been approved by the appropriate administrative bodies of the program.

• Dissertation Prospectus. The dissertation prospectus is a written document that includes an outline of the parameters of the projected dissertation topic with a rationale and statement of the problem to be researched, the methodology and design of the study, a preliminary review of the literature substantiating the need for the study, and the principle sources of information for the dissertation. Approval of the prospectus permits the student to proceed with the dissertation.

• Dissertation. The dissertation is based upon original investigation and demonstration of mature scholarship and critical judgment in the theoretical and methodological approaches to development of nursing knowledge. The dissertation is expected to be the first step in the development of a program of research and scholarly activity. A minimum of 30 dissertation credit hours are required.

• Oral defense. When the dissertation is completed a meeting will be scheduled for the student’s defense of the dissertation. The candidate is expected to respond to substantive and methodological questions related to the dissertation.

• Dissertation committee. A four person doctoral dissertation committee will guide and approve the acceptability of the dissertation. The Chair must be a member of the JPDN faculty, as must be two committee members. The remaining member must be selected from outside the program. Other qualifications of members will be consistent with the student’s area of research and with the requirements for doctoral committees as stated in the policies and general catalogs of both universities.

Innovative Curriculum Pathways to the Joint Ph.D. in Nursing Program for BSN Graduates and for Students Enrolled in MSN Option

The Innovative Pathways into the Joint Ph.D. in Nursing Program (JPDN) is an accelerated program that allows individuals with a BSN and students enrolled in the RN-MSN program direct admission into the JPDN program. Acceleration is accomplished by restructuring MSN and Ph.D. curricula to recognize the mastery of specific content, thereby facilitating graduate study. There are two pathways: one for BSN graduates and one for RN-option students. Since existing acceleration pathways differ at The University of Akron and Kent State University, individuals applying for admission to this program must apply for admission through the Graduate School of The University of Akron.

BSN Graduates:

BSN students within one semester of graduation and professional nurses with a BSN degree may apply in December prior to the fall in which admission is desired. Admission criteria include:

• Enrollment in an accredited BSN program within one semester of graduation or hold the BSN degree.

• Provide evidence of successful completion (or the potential to complete the BSN by the following fall semester) of a baccalaureate degree program in nursing at an accredited school with a minimum grade point average of 3.0 on a 4.0 scale.

• Provide evidence of current licensure, or eligibility for licensure, by the Ohio Board of Nursing.

• Provide evidence of acceptable scores on the Graduate Record Examination.

• Submit a statement about nursing career interests and goals.

• Give a sample of written work. This may include, for example, a scientific term paper, a research paper, an honor’s project, a professional report, or a published article.

• Submit three (3) letters of recommendation from professors or other professionals who can adequately evaluate previous work and potential for success in the Ph.D. program. One of the three letters must be from a Doctoral Faculty Council member who has worked closely with the student.

• Satisfactorily complete a personal interview with a Doctoral Faculty Council member.

• Register for full-time study during the fall semester after acceptance into the Ph.D. program, or otherwise the acceptance is void.

Health Care and nursing policy:

One required course (3 credits)
8200:835 Nursing and Health Care Policy 3

Doctoral dissertation

30 credit hours required
8200:899 Doctoral Dissertation 30

Students who need more than 30 credit hours to complete the dissertation will enroll in 8200:880 Doctoral Dissertation II.
• Register for full-time study during the fall semester after acceptance into the Ph.D. program, or otherwise the acceptance is void.
• Enroll in full-time study for four calendar years for students who are entering directly from the BSN program or full-time study for two academic years plus two calendar years for post-BSN applicants.

Students receive a maximum of 12 credit hours of by-passed credit for master’s level courses after successfully completing 12 credit hours of doctoral level courses. By-passed credit is given in accordance with applicable University of Akron policy.

Upon successful completion of 8200:915, 8200:825, 8200:830, and 8200:835, students receive a maximum of 12 hours of by-passed credit for master’s level courses.

Internship: Students entering directly from the BSN program will be required to complete two 10-week internships with the Co-op program (paid positions).

• Internship in generalist practice during Summer Session I
• Internship in advanced nursing practice during Summer Session II

MSN-Option Students:
Currently enrolled RN-option students at The University of Akron may apply for admission following completion of the RN-option bridge courses. Admission criteria include:

• Enrollment in The University of Akron RN-option program.
• Minimum grade point average of 3.0 on a 4.0 scale for all previous coursework.
• Provide evidence of current licensure, or eligibility for licensure, by the Ohio Board of Nursing.
• Provide evidence of current malpractice insurance.
• Provide evidence of acceptable scores on the Graduate Record Examination.
• Submit a statement about nursing career interest and goals.
• Give a sample of written work. This may include, for example, a scientific term paper, a research paper, an honor’s project, a professional report, or a published article.
• Submit three (3) letters of recommendation from professors or other professionals who can adequately evaluate previous work and potential for success in the Ph.D. program. One of the three letters must be from a Doctoral Faculty Council member who has worked closely with the student.
• Satisfactorily complete a personal interview with a Doctoral Faculty Council member.
• Register for full-time study during the fall semester after acceptance into the Ph.D. program, or otherwise the acceptance is void.

Students enrolled in The University of Akron RN-Option receive a maximum of six (6) by-passed credits after successfully completing six credit hours of doctoral level courses. By-passed credit is given for Nursing Inquiry I (8200:613) and Nursing Inquiry II (8200:618) after the student successfully completes Quantitative Research Methods (8200:625) and Qualitative Research Methods (8200:830) in accordance with applicable University of Akron policy. Students admitted to this innovative pathway are required to take the RN-BSN research course 8200:436, rather than receive by-passed credits for it.

PROFESSIONAL DOCTOR OF NURSING PRACTICE
(820000DNP - Post MSN DNP)
Admission Requirements
• Current Ohio licensure as a registered nurse.
• An undergraduate cumulative grade point average of 3.0 on a 4.0 scale (post-BSN applicants), Post-MSN applicants must have earned a master’s degree from an accredited university with a cumulative grade point average of 3.0 on a 4.0 scale.
• Three letters of recommendation from individuals who can address the applicant’s potential to succeed in the DNP graduate program and who can attest to clinical expertise.
• A pre-admission interview, by telephone or in person, with the concentration program director. The interview is used to establish a fit between student goals and the desired College of Nursing graduate concentration as recommended by the interviewer(s).
• A 300 word essay describing professional goals and reasons for seeking the particular specialty concentration.

Applications to the Doctor of Nursing Practice are accepted on a rolling basis. Note: Only students holding the MSN are currently eligible to apply. The College of Nursing will begin accepting applications from students holding only the BSN in Fall 2012.

Development of the curriculum is structured by four broad areas of knowledge described in the AACN’s Essentials of Doctoral Education for Advanced Practice Nursing (2006). Acquisition of knowledge within the areas of Scientific/Physiologic Foundation for Advanced Evidence Based Practice; Leadership Information Management; Practice Inquiry; and Advanced Specialty Practice, will be demonstrated by the student’s development of essential competencies. The following outcome competencies are expected.

Graduates of the program will:
• Use appropriate theories and concepts to identify health-related phenomena of interest.
• Design and deliver interventions that can withstand scientific analysis.
• Evaluate health care delivery and nursing practices using sound evaluation principles.
• Use evaluation and other methods to account for quality of care and patient safety for focus populations.
• Critically appraise and/or use sources informing best evidence, i.e. epidemiology, statistics, health data, and/or methodologies.
• Deliver and evaluate care processes and outcomes based on best evidence.
• Analyze and define critical choices among health care technologies and information systems toward the betterment of care processes and outcomes.
• Understand the dynamics of health care policy and financing at the organizational and national levels.
• Provide or assist in the leadership of collaborative, inter-professional teams in health care delivery.

Program Description
The University of Akron Professional Doctor of Nursing Practice (DNP) program requires a minimum of 71 graduate credit hours and 1,040 clinical hours for those students entering with a baccalaureate in nursing degree from an accredited program. Post-master’s entry requires: a) 37 credits of DNP core courses; b) 540 clinical practice hours; and c) transfer from the student’s master’s degree in nursing program a minimum of 34 credits of nursing and advanced practice role-specific coursework, which includes 500 clinical hours (or is taken as part of the DNP program).

Core Courses (20 credits):
8200:603 Theoretical Basis for Nursing 3
8200:607 Policy Issues in Nursing 2
8200:608 Pathophysiological Concepts of Nursing Care 3
8200:612 Advanced Clinical Pharmacology 3
8200:613 Nursing Inquiry I 3
8200:618 Nursing Inquiry II 3
8200:604* Advanced Health Assessment 3

Specialty Courses (12-34 credits):
Satisfies course requirements that impact the delivery of health care in the advanced nursing role

DNP Courses (minimum of 37 credits and includes 540 clinical hours): 8200:627K/8200:707K Advanced Healthcare Statistics 3

This course is part of the joint PhD in Nursing curriculum. Students register at their home university.)
EPS2015 (KSU) Fundamentals of Public Health Epidemiology 3
NURS70602 (KSU) Synthesis and Application of Evidence for Advanced Practice Nursing 3
8200:848 Program Evaluation in Nursing 3
8200:701 Advanced Seminar in Clinical Genomics and Health Information Management 3
8200:700 Information Management in Healthcare 3
NURS70640 (KSU) Advanced Leadership in Healthcare 3
8200:706 Clinical Scholar I 3
8200:707 Clinical Scholar II 4
8200:708 Capstone Project I 2-6
8200:708 Capstone Project I 1-3

MART OF SCIENCE IN NURSING
http://www.uakron.edu/nursing/academic-programs/

Accreditation
The master’s degree programs are fully accredited by the Commission on Collegiate Nursing Education (CCNE). CCNE is a resource of information regarding tuition, fees, and length of program and can be contacted at: One Dupont Circle, N.W., Suite 530, Washington, D.C., 20036, (202) 887-6791.

Expected Outcomes of the Program
• Applies scientific theories and research to implement the advanced nursing role
• Demonstrates competence according to national standards and guidelines in the advanced nursing role
• Demonstrates knowledge of legal, ethical, fiscal, policy, and leadership issues that impact the delivery of health care in the advanced nursing role
• Demonstrates knowledge of legal, ethical, fiscal, policy, and leadership issues that impact the advancement of the nursing profession in the advanced nursing role
• Identifies researchable nursing problems and contributes to research studies for advanced nursing and health care practice

Admission
• Baccalaureate degree in nursing from an NLNAC or CCNE accredited program.**
• 3.00 GPA on a 4.00 scale for all previous college work.
• GRE (preferred or Miller Analogies Test) taken within the last five years for the Nurse Anesthesia track.
• Three (3) letters of reference from a recent employer; a member of the nursing profession; a former faculty member.
• 300-word essay describing professional goals.
• Interview prior to admission to the program.
• Current state of Ohio license to practice nursing.
• Prerequisite course requirements: Undergraduate Statistics, Nursing Research, Basic Health Assessment and Computer Skills, Graduate Level Statistics. Applicants for the Adult/Gerontological Health Nurse Practitioner track are required to have clinical experience as a registered nurse for 12 or more months within the last two years in acute medical/surgical care or long-term acute care (LTAC) with adult and gerontological populations.
• A one year experience in an area where critical care and emergencies occur is required for all students admitted to the nurse anesthesia specialty.
• A one year experience in care of children or in the acute care of children or adults is required for those two specialties.
• Applicants who are certified nurse practitioners will be evaluated and have their program planned on an individual basis.
• Applications are accepted on a rolling basis except for Nursing Anesthesia. All application materials for the Nursing Anesthesia program must be received by August 1. Admission to this program is competitive.

Admission Procedures
The student should access the online graduate application through the Graduate School webpage or the webpage of the College of Nursing. Criteria specific for admission to the Graduate Nursing Program may be secured from the Coordinator of the Graduate Program in Nursing or the Office of Student Affairs. A graduate admissions committee of the College of Nursing will review all applications and make recommendations to the Coordinator of the Graduate Program regarding the applicant’s status. The Coordinator will send a recommendation to the dean of the Graduate School, who will notify the student of admission status. Applications received in the graduate office of the College of Nursing will be reviewed when the file is complete to facilitate the admission process.

*National League for Nursing Accreditation Commission.
**A baccalaureate degree in nursing from a foreign university which is recognized by The University of Akron.

Instructional Program
The Master of Science in Nursing curriculum includes a minimum of 36 credit hours of study depending on the specialty track. The advanced practice tracks include Adult/Gerontological Health Nursing, Psychiatric Mental Health Nursing, Child and Adolescent Health Nursing, and Nurse Anesthesia. Graduates are prepared for advanced practice as clinical nurse specialists, nurse practitioners, or nurse anesthetists, or for roles as administrators or educators. The curriculum is based on theory and research both in nursing and in related disciplines. It provides the foundation for doctoral study and for ongoing professional development.

Nursing Core
The curriculum consists of a core of 17 credit hours. These courses encompass advanced theory, research, computers in nursing, health policy, and pathophysiological concepts.

Nursing Research
All students enroll in a research core for a total of 6-7 credits: 8200:613, Nursing Inquiry I and 8200:699 Master’s Thesis or 8200:618 Nursing Inquiry II.

RN Sequence
(This sequence is limited to registered nurse graduates of Associate Degree and Diploma nursing programs)
The RN program is designed for registered nurses who hold a diploma or associate degree in nursing or a baccalaureate degree in another field. It is specifically designed for RN’s who are interested in obtaining the baccalaureate degree in nursing and/or continuing on to a master’s degree in nursing. Students must complete 68-69 hours of prerequisite undergraduate coursework prior to acceptance into the sequence. The RN program consists of 32 credit hours of upperdivision baccalaureate coursework. Students wishing to begin work on the Master’s degree RN/MSN option may do so while meeting the baccalaureate requirements and must apply to the graduate program in the fall or early spring prior to graduation. Additional admission requirements and a graduate research class (Inquiry I) are part of the RN/MSN option. Continuation in the graduate program is predicated on meeting graduate program requirements and acceptance into the graduate nursing program.

Advanced Practice Options
Options are provided for advanced practice as a clinical nurse specialist, nurse practitioner, or nurse anesthetist, or for advanced roles as an administrator. Requirements for admission include at least one year of practice in the area of interest.
The Master of Science in Nursing curriculum requires from 36 to 60 credits, depending on the Advanced Practice option selected by the student.

Core courses required of all students:
8200:603 Theoretical Basis for Nursing 3
8200:606 Information Management in Advanced Nursing Practice 3
8200:607 Policy Issues in Nursing 2
8200:608 Physiological Concepts of Nursing Care † (*) 3
8200:613 Nursing Inquiry I 3
8200:618 Nursing Inquiry II 3 or
8200:659 Master’s Thesis 1-6

Functional role courses selected by students based upon area of specialty. (* Anesthesia students take 8200:561 and 8200:562

• Nurse Anesthesia
(820300MSN)
The Anesthesia Track (60 credit hours) is accredited by the Council on Accreditation of Nurse Anesthesia Programs. The Nurse Anesthesia track meets certification requirements through American Association of Nurse Anesthetists’ Council on Certification of Nurse Anesthetists (CCNA).
8200:561 Advanced Physiological Concepts in Health Care I 3
8200:562 Advanced Physiological Concepts in Health Care II 3
8200:609 Pathophysiology for Nurse Anesthetists 3
8200:637 Nurse Anesthesia Residency I 4
8200:640 Scientific Components of Nurse Anesthesia 3
8200:641 Pharmacology for Nurse Anesthesia I 3
8200:642 Introduction to Nurse Anesthesia 2
8200:643 Principles of Anesthesia I 4
8200:644 Pharmacology for Nurse Anesthesia II 3
8200:645 Principles of Anesthesia II 4
8200:646 Nurse Anesthesia Residency II 4
8200:647 Professional Role Seminar 2
8200:648 Nurse Anesthesia Residency III 4
8200:649 Nurse Anesthesia Residency IV 4

• CRNA-MSN Anesthesia Option
8200:640 Scientific Components of Nurse Anesthesia 3
8200:641 Pharmacology for Nurse Anesthesia I 3
8200:642 Introduction to Nurse Anesthesia 2
8200:643 Principles of Anesthesia I 4
8200:644 Pharmacology for Nurse Anesthesia II 3
8200:645 Principles of Anesthesia II 4
8200:647 Professional Role Seminar 2

• Child and Adolescent Acute Care Nurse Practitioner
(820401MSN)
The Child and Adolescent Acute Care Nurse Practitioner track (45 credit hours) focuses on the integration of evidenced based knowledge and skills in acute/critical care with children and adolescents with complex, acute, critical, and chronic health conditions. Emphasis is on advanced practice in emergency departments, sub-specialty clinics, acute areas of hospitals, and intensive care units with children with complex, acute, critical, and chronic health conditions.
7400:585 Nutrition for Pediatric Nurse Practitioners 2
8200:650 Pediatric/Adolescent Assessment 3
8200:651 Child and Adolescent Health Nursing I 3
8200:652 Child and Adolescent Health Nursing I Practicum 2
8200:653 Child and Adolescent Health Nursing II Practicum 2
8200:655 Child and Adolescent Health Nursing II 3
8200:656 Pharmacology for Child and Adolescent Health Nursing 3
8200:656 Child and Adolescent Health Nursing-Acute Care II 3
8200:657 Child and Adolescent Health Nursing-Acute Care Practicum 2
8200:658 Child and Adolescent Health Nursing-Acute Care IV 3
8200:658 Child and Adolescent Health Nursing-Acute Care IV Practicum 2

• Child and Adolescent Health Nurse Practitioner
Primary Health Care
(820301MSN)
The Child and Adolescent Health Nurse Practitioner track (Primary Health Care) (45 credit hours) meets certification requirements through the American Nurses Credentialing Center (ANCC) and the Pediatric Council for Pediatric Nurse Practitioners and Nurses (PCBPNN). Emphasis is on the primary health care needs of children and adolescents.
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8200:585 Nutrition for Pediatric Nurse Practitioners 2
8200:650 Pediatric/Adolescent Assessment 3
8200:651 Child and Adolescent Health Nursing I 3
8200:652 Child and Adolescent Health Nursing I Practicum 2
8200:653 Child and Adolescent Health Nursing II Practicum 2
8200:654 Child and Adolescent Health Nursing III Practicum 2
8200:655 Child and Adolescent Health Nursing II 3
8200:656 Pharmacology for Child and Adolescent Health Nursing 2
8200:657 Child and Adolescent Health Nursing III 3
8200:658 Child and Adolescent Health Nursing IV 3
8200:659 Child and Adolescent Health Nursing IV Practicum 2
8200:660 Child and Adolescent Health Nursing IV 3

• Child and Adolescent Health Nurse Practitioner (Primary/Acute Care) (820308MSN)

The Child and Adolescent Health Nurse Practitioner track (Primary/Acute Care) (55 credit hours) focuses on the integration of evidenced based knowledge and skills in primary and acute care with children with complex, acute, critical, and chronic health conditions. Emphasis is on advanced practice in emergency departments, sub-specialty clinics, acute areas of hospitals, and intensive care units with children with complex, acute, critical, and chronic health conditions.

8200:585 Nutrition for Pediatric Nurse Practitioners 2
8200:650 Pediatric/Adolescent Assessment 3
8200:651 Child and Adolescent Health Nursing I 3
8200:652 Child and Adolescent Health Nursing I Practicum 2
8200:653 Child and Adolescent Health Nursing II Practicum 2
8200:654 Child and Adolescent Health Nursing III Practicum 2
8200:655 Child and Adolescent Health Nursing II 3
8200:656 Pharmacology for Child and Adolescent Health Nursing 2
8200:657 Child and Adolescent Health Nursing III 3
8200:658 Child and Adolescent Health Nursing IV 3
8200:659 Child and Adolescent Health Nursing IV Practicum 2
8200:660 Child and Adolescent Health Nursing IV 3

• Psychiatric Mental Health Nursing (820306MSN)

Psychiatric Mental Health Nursing Track (46 credit hours and meets eligibility requirements for certification through American Nurses Credentialing Center (ANCC) as Psychiatric Clinical Nurse Specialist or psychiatric nurse practitioner).

8200:610 Advanced Adult/Gerontological Assessment with Practicum 3
8200:611 Advanced Mental Health Assessment 3
8200:661 Psychiatric Mental Health, APN I Practicum 2
8200:662 Clinical Psychopharmacology 3
8200:663 Psychiatric Mental Health APN Internship (selective only) 1-4
8200:664 Psychiatric Mental Health-Acute, APN II Practicum 2
8200:665 Psychiatric Mental Health-Acute, APN II 3
8200:667 Psychiatric Mental Health-Chronic, APN III Practicum 2
8200:669 Psychiatric Mental Health-Synthesis, APN IV Practicum 2
8200:670 Psychiatric Mental Health-Synthesis, APN IV 3

• Psychiatric Family Nurse Practitioner (820400MSN)

The Psychiatric Family Nurse Practitioner track (48-42 credit hours) provides the educational preparation necessary to provide primary mental healthcare at an advanced level to individuals of all ages and families. Preparation as a Psychiatric Family Nurse Practitioner is emphasized and includes clinical supervision of individuals and families, differential diagnosis and management of psychiatric and mental health disorders, medication management, psychotherapeutic interventions, and case management. Graduates of the Psychiatric Family Nurse Practitioner track are eligible to sit for certification from the American Nurses Credentialing Center (ANCC) as a Family Psychiatric and Mental Health Nurse Practitioner (PMHNP).

8200:610 Advanced Adult/Gerontological Assessment with Practicum 3
8200:611 Advanced Mental Health Assessment 3
8200:660 Psychiatric Mental Health, APN I Practicum 2
8200:661 Psychiatric Mental Health, APN I 3
8200:662 Clinical Psychopharmacology 3
8200:664 Psychiatric Mental Health-Acute, APN II Practicum 2
8200:665 Psychiatric Mental Health-Acute, APN II 3
8200:667 Psychiatric Mental Health-Chronic, APN III Practicum 2
8200:669 Psychiatric Mental Health-Synthesis, APN IV Practicum 2
8200:670 Psychiatric Mental Health-Synthesis, APN IV 3

Advanced Role Option

• Nursing Administration (36 credits) (820307MSN)

8200:630 Resource Management in Nursing Settings 3
8200:632 Fiscal Management in Nursing Administration 3
8200:633 Nursing Leadership in Nursing Organizations I 3
8200:634 Nursing Leadership in Nursing Organizations II 3
8200:635 Organizational Behavior in Nursing Settings 3
8200:638 Practicum Nursing Administration I 2
8200:639 Practicum Nursing Administration II 2

• Adult Gerontological Health Nursing Clinical Nurse Specialist (820302MSN)

Meets eligibility requirements for certification through American Nurses Credentialing Center (ANCC) or Clinical Nurse Specialist in selected areas. (99 credits)

8200:610 Advanced Adult/Gerontological Assessment with Practicum 3
8200:612 Advanced Clinical Pharmacology 3
8200:671 Adult/Gerontological Health Nursing CNS I 2
8200:674 Adult/Gerontological Health Nursing CNS I Practicum 2
8200:675 Adult/Gerontological Health Nursing CNS II 2
8200:676 Adult/Gerontological Health Nursing CNS II Practicum 2
8200:677 Adult/Gerontological Health Nursing CNS III 2
8200:678 Adult/Gerontological Health Nursing CNS III Practicum 2
8200:679 Adult/Gerontological Health Nursing CNS Practicum 3
8200:673 Adult/Gerontological Health Nursing CNS IV 1

• Adult Gerontological Health Nurse Practitioner (820303MSN)

Meets eligibility requirements for certification through American Nurses Credentialing Center (ANCC) and American Academy of Nurse Practitioners (AANP). (48 credits)

Students must achieve a “B-” or higher in core specialty courses: 8200:608 Pathophysiological Concepts, 8200:610 Advanced Adult/Gerontological Assessment with Practicum, and 8200:612 Advanced Clinical Pharmacology and in all Adult/Gerontological Speciality Clinical track courses required to progress in the Adult/Gerontological Health Nurse Practitioner track.

8200:610 Advanced Adult/Gerontological Assessment with Practicum 3
8200:612 Advanced Clinical Pharmacology 3
8200:620 Adult/Gerontological Health Nursing NP I 2
8200:621 Adult/Gerontological Health Nursing NP II 2
8200:622 Adult/Gerontological Health Nursing NP III 2
8200:624 Adult/Gerontological Health Nursing NP IV 2
8200:627 Adult/Gerontological Health Nursing NP I Practicum 2
8200:628 Adult/Gerontological Health Nursing NP II Practicum 2
8200:629 Adult/Gerontological Health Nursing NP III Practicum 2
8200:631 Adult/Gerontological Health Nursing NP IV Practicum 3
8200:690 Clinical Management I 3
8200:692 Clinical Management II 3
8200:694 Clinical Management III 3

Graduate Degree Completion Program for the Certified Registered Nurse Anesthetist

The Graduate Degree Completion Program for Certified Registered Nurse Anesthetist (CRNAs) is designed to give practicing CRNAs the opportunity to complete additional course work that integrates their current clinical expertise within the framework of advanced practice nursing at the master’s level. This program allows CRNAs to advance their current status to be congruent with the master’s level education mandated for all current nurse anesthesia educational programs.

Admission Requirements:

• Evidence of successful completion of an accredited program of nurse anesthesia
• Evidence of successful completion of an accredited BSN program
• Current certification/recertification as a CRNA
• Current employment as a CRNA
• Three professional recommendations
• Satisfactory completion of a graduate-level statistics course

Program Requirements:

• Professionalism Core:
  8200:603 Theoretical Basis 3
  8200:607 Policy Issues in Nursing 2

• Inquiry Core:
  3470:689 Statistics 3
  8200:606 Information Management in Advanced Nursing Practice 3
  8200:613 Inquiry I 2
  8200:618 Inquiry II 3

• Additional Courses:
  8200:704 Advanced Clinical Pharmacology Across the Lifespan 3
  8200:632 Fiscal Management in Nursing 3
  8200:630 Resource Management in Nursing 3
  8200:635 Organizational Behaviors in Nursing 3
  8200:xxx Elective 3

Portfolio 7

Total 36

8200:639 Practicum Nursing Administration II 2

1 Cognate electives may be substituted for 8200:608 in the Administration option.
College of Polymer Science and Polymer Engineering

Stephen Z.D. Cheng, Ph.D., Dean
Mark D. Foster, Ph.D., Associate Dean of Programs, Policies, and Engagement

HISTORY

The University of Akron has been a focus for education and research in polymer science since 1910 when Professor Charles M. Knight began offering courses in rubber chemistry. Master’s theses treating rubber chemistry on the University library shelves date to 1920. The University began developing major laboratories in 1942 under the leadership of Professor G.S. Whitby, and the UA program played a significant role in the synthetic rubber industry of the U.S. government during World War II. An Institute of Rubber Research under the direction of Professor Maurice Morton was created in 1956, which became an Institute of Polymer Science in 1964. A Ph.D. program in Polymer Chemistry was introduced in 1956. In 1967, a Department of Polymer Science in the College of Arts and Sciences was formed which awarded M.S. and Ph.D. degrees in Polymer Science.

A Center for Polymer Engineering was created in 1983 and a Department of Polymer Engineering in the College of Engineering in January 1984 with Professor James L. White as director and department chair to give thrust to polymer processing and engineering applications. In 1988 the College of Polymer Science and Polymer Engineering was established to consolidate the administration of the two academic departments, the Institute of Polymer Science and the renamed Institute of Polymer Engineering.

MISSION STATEMENT

The mission of the College of Polymer Science and Polymer Engineering is to serve its students through a high quality educational experience, incorporating both classroom and laboratory learning, as well as a stimulating research environment. Its graduates and former research associates provide a well-trained workforce for employers throughout the world, but especially for the State of Ohio. With the generation of new knowledge from research and the application of that knowledge, the College serves society with benefits to both the economy and the environment.

- The primary purpose of the College is to educate its students in the science and engineering of polymers and to disseminate that knowledge to the broader community of researchers, technologists, and manufacturers who employ that knowledge to their own aims.

- The College provides a variety of services through its institutes and centers to aid the economic and cultural development of our society. Individual faculty members provide services as consultants to industry, government, and civic institutions, concerning the developments in knowledge and applications of polymers.

- An additional function of the College is to provide training for those individuals who wish to improve their skills and knowledge concerning various types of polymers, their properties, processes and uses. Undergraduate students from other colleges within the University participate in specialized courses taught by the polymer college faculty as they pursue their traditional degree programs. Also, a variety of non-credit offerings are presented as continuing education, intensive short courses, and seminars.

DESCRIPTION

The College of Polymer Science and Polymer Engineering carries out a program of research and education, primarily at the graduate level, and serves as a major intellectual resource for the scientific and technological development of polymers and related materials and processes. The college consists of the Department of Polymer Science, the Department of Polymer Engineering, the Maurice Morton Institute of Polymer Science and the Institute of Polymer Engineering.

The Department of Polymer Science and The Institute of Polymer Science, empha- size polymer synthesis, the physical chemistry, physics and mechanical behavior and technology of polymers, and many of their applications. The Department of Polymer Engineering and the Institute of Polymer Engineering, emphasize polymer processing (including reactive processing), solid state structure/morphology and properties of polymers as related to process history as well as engineering analysis and design. Collaborative research among the faculty in the two departments is common and provides a unique environment and capability for solving modern-day problems. This provides a fertile environment for students to obtain multidisciplinary training.

ADMISSION REQUIREMENTS

Admission to the graduate programs in the college is competitive. The departmental admission committees carefully consider each applicant. Early application is suggested.

DEPARTMENT OF POLYMER SCIENCE

Students with an undergraduate degree in chemistry, physics, or engineering and a grade point average of 3.0 or better may apply. Students holding a degree in biology or natural sciences will be expected to take additional courses on the undergraduate level in calculus, organic chemistry, thermodynamics, and physics. For highly qualified students lacking no more than one of the required courses a provisional admission may be given for one semester, followed by full admission upon successful completion of the undergraduate course.

In addition to the graduate application and official transcripts applicants must submit three letters of recommendation, a statement of purpose, and GRE scores.

A student with a M.S. in the sciences from another university can be admitted to the Ph.D. program. Three letters of recommendation are required in such cases to be certain that the student is likely to be successful in doctoral research.

All application materials must be received by December 15 for early consideration. The final deadline for all applicants is February 1.

DEPARTMENT OF POLYMER ENGINEERING

Students with an undergraduate degree in engineering disciplines, materials science, or related degrees with a grade point average of 2.75/4.0 or better are admissible. Students holding a degree in the natural sciences usually need additional undergraduate engineering courses, which are required for the Ph.D. program. For such students, depending upon their background, a provisional admission may be given followed by full admission upon successful completion of a series of required remedial courses.

In addition to the graduate application and official transcripts applicants must submit three letters of recommendation and GRE general test scores.

A student with a M.S. in Mechanical or Chemical Engineering from another university can be admitted to the Ph.D. program. Three letters of recommendation are required as well as GRE general test scores.

Applications are processed throughout the year for fall semester admission; however, priority consideration is given to those applicants whose materials are received by January 15 each year.

DOCTOR OF PHILOSOPHY

Students may pursue the Doctor of Philosophy degree in either Polymer Science or Polymer Engineering.

Doctor of Philosophy in Polymer Science (987010PHD)

An interdisciplinary program leading to the Doctor of Philosophy in Polymer Science is administered by the Department of Polymer Science. Graduates from the three main disciplines (chemistry, physics and engineering) are guided into the appropriate courses of study and research in that field under the supervision of a faculty member. Research facilities of the Institute of Polymer Science are available for dissertation research. Students may be admitted directly to the Ph.D. program upon screening of their qualifications and recommendation by the department chair and dean.

In addition to satisfying the general requirements of the Graduate School, a student working toward the Doctor of Philosophy in Polymer Science must meet the following requirements:

- Complete a course of study prescribed by the student’s advisory committee based on the committee’s judgment of the student’s background and on the result of any special examinations it might impose. This course will consist of a minimum of, but usually more than, 36 credits in graduate courses, or their equivalent, plus sufficient Ph.D. research credits to make a total of 84 credits (exclusive of Master of Science thesis credit). Credits for participation in either Polymer Science of Polymer Engineering seminars do not apply toward the degree. At least 18 credits of graduate course work and all dissertation credits must be completed at the University.

There is a university minimum residence time requiring one year, although graduate students starting with a B.S. or B.A. typically spend 4 years in residence.
• Completion of 17 credits among the following core courses (2 credits each) in polymer science:
  4 credits of polymer chemistry courses:
  9871:601 Polymer Concepts
  9871:602 Synthesis and Chemical Behavior of Polymers
  4 credits of polymer physical chemistry courses:
  9871:674 Polymer Structure and Characterization
  9871:675 Polymer Thermodynamics
  4 credits of polymer physical property courses:
  9871:631 Physical Properties of Polymers I
  9871:632 Physical Properties of Polymers II
  2 credits of polymer engineering and technology courses:
  9871:701 Polymer Technology I
  3 credits of polymer science laboratory:
  9871:613 Polymer Science Laboratory
• Completion of 19 credits of elective courses appropriate to each student’s area of interest.
• Pass six cumulative examinations which are given once a month for eight months of the year (none in June, July, August, or December). Candidates must begin taking cumulative exams after completion of their second semester. Thereafter, students are required to take all of the exams until they pass six. (A maximum of 24 total cumulative examinations may be taken)
• Complete 9871:6078 Polymer Science Seminar I and II.
• Attendance at and participation in seminar-type discussions scheduled by the department. Credits for participation in either polymer science or polymer engineering seminars do not apply toward the degree.
• Present a publicdepartmental seminar on the completed research.
• Pass an oral examination upon completion of a research dissertation.
• Demonstrate competency in computer programming.
• Pass the general requirements for the Doctor of Philosophy degree.
• Satisfy the foreign language requirement for the doctoral degree by meeting the requirements of Plan A, B, or C as specified by the student’s advisory committee. Appropriate research skills for Plan C are to be specified by the department on the basis of the student’s area of specialization and intended research. These skills include proficiency in computer programming language, special mathematical methods, applied statistical analysis, and special literature search techniques.

Doctor of Philosophy in Polymer Engineering (984010PHD)

The Department of Polymer Engineering administers a graduate program in which students, with primarily engineering backgrounds, are guided through a course of study and research under the supervision of a faculty member. Students may be admitted directly to the Ph.D. program upon screening of their qualifications and recommendation by the department chair and dean. Students in Polymer Engineering will earn the degree of Doctor of Philosophy in Polymer Engineering. Requirements in the interdisciplinary field of Polymer Engineering for that degree are as follows:

• Complete courses as developed in a plan of study approved by the student’s advisor and the department chair. A minimum of 96 credits of graduate work must be earned. A total of 36 credit hours of lecture courses and 60 credit hours of research must be completed. Twelve credit hours of the 60 credits must be dissertation research.
• Polymer engineering core (12 credits):
  9841:611 Structural Characterization of Polymers with Electromagnetic Radiation 2
  9841:621 Rheology of Polymeric Fluids 3
  9841:622 Analysis and Design of Polymer Processing Operations I 3
  9841:631 Engineering Properties of Solid Polymers 2
  9841:641 Polymeric Materials Engineering Science 2
• Polymer Engineering 600-level electives (9 credits):
  9841:601 Polymer Engineering Seminar 1
  9841:622 Analysis and Design of Polymer Processing Operations II 3
  9841:650 Basic Engineering for Polymer Engineers 3
  9841:651 Polymer Engineering Laboratory 3
  9841:661 Polymerization Reactor Engineering 3
  9841:675 Carbon-Polymer Nanotechnology 3
  9841:680 Polymer Coatings 3
The Committee recommends 9841:651 to be compulsory for all full-time Ph.D. students, but it may be exempted as an elective for part-time students who are currently employed in polymer and related industries.

Doctoral students are also required to take 9841:601 four (4) times. While the one credit earned in this course will count only one time toward degree requirements, all grades will be counted and calculated into the student’s GPA.

• Mathematics electives (3 credits):
  3450:xxx Approved Mathematics 3
• Technical electives (2 credits):
  3450:xxx Approved Mathematics 3
  4300:651 Advanced Engineering Materials 3
  4600:622 Continuum Mechanics 3
  9841:xxx Approved Polymer Engineering 3
  9871:603 Polymer Science Laboratory 2
  9871:674 Polymer Structure and Characterization 2
  9871:675 Polymer Thermodynamics 2
• Polymer Engineering 700-level electives (10 credits):
  9841:7xx Electives 10
Electives may be taken from other departments such as polymer science, chemical engineering, mechanical engineering, physics, mathematics, computer science, or other engineering departments with the advisor’s approval.
• Research (60 credits):
  Students may take a combination of 9841:898 (Preliminary Research) and 9841:899 (Doctoral Dissertation) to meet this requirement, however, a minimum of 12 credits of the total 60 required must be of 9841:899.
• Foreign Language Requirement:
  Additionally, a foreign language or research technique (e.g., computer skill/statistics) is required for the Ph.D. degree in Polymer Engineering, using either Plan A, B, or C (see section under “Language Requirements” as described in this publication).
• Take a Basic Engineering exam after the first Fall semester of study. The exam will cover heat transfer, fluid mechanics and solid mechanics, as determined by the department. If a student fails the examination or a portion of the examination he/she may be asked to take remedial undergraduate courses (at his/her own expense) or graduate level courses within one year from the date of the exam. NOTE: Any student who successfully completes course 9841:650, Basic Engineering for Polymer Engineers, with a “B+” or better grade is deemed to have satisfied the requirement of the Basic Engineering exam and does not have to take the exam. Students who achieve a “B-” or lower in the course would still be required to take the exam.
• Successfully complete six one-hour qualifying examinations within three semesters after admission into the program. The examinations shall cover graduate courses that the student has completed and basic undergraduate topics.
• Each doctoral student must (1) pass a candidacy exam and (2) must present his/her research proposal for approval by the advisory committee within three years of entry into the program.
• Each candidate must pass an oral examination in defense of the dissertation.
• Submit the written Doctoral Dissertation to the Graduate School by the required deadlines.
• A student receiving a Master of Science degree from The University of Akron in Polymer Engineering may use all lecture course credits toward the 36 lecture course credit requirement.
• A student entering with a master’s degree or graduate credits from another institution may be given 18 credit hours toward the lecture course requirement.

M.A.S.T.E.R’S Degree

Students may pursue Master of Science degrees in either Polymer Science or Polymer Engineering. Admission requirements to the master’s program are the same as those for the doctoral program as listed on page 81 of this bulletin.

Master of Science in Polymer Science (987010MS)

• A minimum of 24 credits in appropriate courses in biology, chemistry, mathematics, physics, polymer science and engineering as prescribed by the advisory committee.
• Completion of 11 of credits in the following required core courses in polymer science: 9871:601 Polymer Concepts; 615 Polymer Science Laboratory; 631 Physical Properties of Polymers I; 674 Polymer Structure and Characterization; 701 Polymer Technology.
• Completion of 13 credit hours of elective courses appropriate to each student’s area of interest.
• Completion of a research project (9871:699) and the resulting 6 credits.
• Attendance at and participation in seminar-type discussions scheduled by the department. Credits for participation in either polymer science or polymer engineering seminars do not apply toward the degree.
• Demonstrated competency in computer skills.
• At least 12 credits of graduate coursework and all theses credits must be completed at the University.
• Pass one cumulative exam.
**Master of Science in Polymer Engineering (984010MSPE)**

The major emphases of the graduate program in polymer engineering are in polymer processing, engineering performance and structural and rheological characterization of polymers.

Students in Polymer Engineering will earn the degree of Master of Science in Polymer Engineering. Requirements for the degree are as follows:

- Complete courses as developed in a plan of study approved by the student’s advisor and the department chair. A minimum of 30 credits of graduate coursework must be earned. A total of 24 credit hours of lecture courses and 6 credit hours of research must be completed.

- Polymer engineering core (12 credits):
  - 9841:611 Structural Characterization of Polymers with Electromagnetic Radiation 2
  - 9841:621 Rheology of Polymeric Fluids 3
  - 9841:622 Analysis and Design of Polymer Processing Operations I 3
  - 9841:631 Engineering Properties of Solid Polymers 2
  - 9841:641 Polymer Materials Engineering Science 2

- Polymer engineering 600-level electives (6 credits):
  - 9841:601 Polymer Engineering Seminar 1
  - 9841:623 Analysis and Design of Polymer Processing Operations II 3
  - 9841:650 Basic Engineering for Polymer Engineers 3
  - 9841:651 Polymer Engineering Laboratory 3
  - 9841:661 Polymerization Reactor Engineering 3
  - 9841:675 Carbon-Polymer Nanotechnology 3
  - 9841:680 Polymer Coatings 3

The Committee recommends 9841:651 to be compulsory for all full-time M.S. students, but it may be exempted as an elective for part-time students who are currently employed in polymer and related industries.

Master’s students are also required to take 9841:601 two (2) times. While the one credit earned in this course will count only one time toward degree requirements, both grades will be counted and calculated into the student’s GPA.

- Technical electives (6 credits):
  - 3450:xxx Advanced Mathematics 3
  - 4300:681 Advanced Engineering Materials 3
  - 4600:622 Continuum Mechanics 3
  - 9841:xxx Approved Polymer Engineering 3
  - 9871:613 Polymer Science Laboratory 3
  - 9871:675 Polymer Structure and Characterization 2
  - 9871:675 Polymer Thermodynamics 2

- Thesis (6 credits):
  - 9841:699 Master’s Thesis 6

*These courses will be applied to the requirements of both the bachelor’s and master’s degree.

**Master’s students are required to take 9841:601 two times. While the one credit earned in this course will count only one time toward the degree requirement, both grades will be counted into the student’s GPA.

A student must maintain a 3.0 or better grade point average to stay in the program. If a student is not able to do this, then he or she will have the option to complete the regular bachelor’s degree program in applied mathematics or the Natural Sciences divisional major instead of the five-year accelerated plan.

**BS/MS Program in Applied Mathematics/Polymer Engineering (984021MSPE)**

This is an accelerated five-year BS/MS program. After successfully completing this program, a student will receive a bachelor’s degree in applied mathematics as well as a master’s degree in polymer engineering. Under the supervision of faculty advisors in applied mathematics and polymer engineering, a student in the program will finish the core course requirements and most of the electives for the bachelor’s degree in the first three years. During the third year of the baccalaureate degree a student will formally apply to the program through the Graduate School. Upon acceptance a student will be cleared to complete the remaining electives of the bachelor’s degree and complete 30 credits of graduate work for the master’s degree in the last two years. A student will be eligible for a graduate assistantship only in these last two years and must be registered for at least nine graduate credits in each of those semesters.

Graduate coursework will include:

- 3450:539 Advanced Engineering Mathematics II 3
- 9841:550 Engineering Properties of Polymers* 3
- 9841:641 Polymer Materials Engineering Science 3
- 9841:650 Basic Engineering for Polymer Engineers 3
- 9841:661 Polymerization Reactor Engineering 3
- 9841:671 Seminar: Polymer Engineering** 1
- 9841:675 Characterization 2
- 9841:681 Rheology of Polymeric Fluids 3
- 9841:651 Polymer Engineering Lab 3
- 9841:622 Analysis and Design 3
- 9841:6xx Electives 3
- 9841:699 Master’s Thesis 3

BA/MS Program with BA Physics/Chemical Physics at the College of Wooster and MS Polymer Engineering at UA (984030MSPE)

The five-year BA/MS program at The University of Akron with BA Physics/Chemical Physics at the College of Wooster and MS Polymer Engineering at UA is an accelerated program which involves initial completion of three years of BA coursework in Physics/Chemical Physics at the College of Wooster followed by two years of undergraduate and graduate coursework, along with graduate thesis work in the Department of Polymer Engineering, at The University of Akron. The College of Wooster will award the BA in Physics/Chemical Physics after completion of the fourth year of coursework at The University of Akron. Students intending to enroll in the BA/MS program will consult with the faculty counselors at both the College of Wooster and The University of Akron.

Students must apply to the Graduate School during the third year of the BA at the College of Wooster. The admissions committee of the Department of Polymer Engineering will evaluate applications of potential BA/MS students in their third year. Students will be admitted to the MS program at The University of Akron after completing three years of the BA at the College of Wooster. The MS in Polymer Engineering will be awarded at the completion of the fifth year when all graduate degree requirements have been successfully completed.
Interdisciplinary and Certificate Programs

Overview

To add to the dimensions of the traditional disciplines, the University has established interdisciplinary and interdepartmental programs of study. In addition to a major, the student may elect to pursue one of these programs.

Interdisciplinary Studies programs feature courses which integrate and analyze issues and concepts from more than one field. The goal of this type of study is to place knowledge into greater perspective than would be possible through any one traditional field. This is accomplished by taking courses from a variety of departments as well as courses which may be team taught.

Upon completion of any of these programs, a statement will be placed on the student’s permanent record indicating the area of concentration. The certificate indicating the area of concentration will be awarded when the student completes the requirements for a degree unless the program specifies that it is free-standing and does not require participation in a degree program.

ACUTE CARE NURSE PRACTITIONER

(820007GC)

The Post-Master’s Acute Care Nurse Practitioner certificate program prepares acute care nurse practitioners to provide advanced practice nursing care to acutely and/or critically ill adults. The program requires one calendar year of intense study including advanced clinical practice and theory. The program is built upon a core of advanced assessment, pathophysiology, and pharmacology. Acute Care Nurse Practitioners are prepared to conduct comprehensive physical assessments, appraise health risks and promote health behaviors, order and interpret diagnostic tests, diagnose and manage commonly occurring health problems and diseases. The program consists of 16 credits of graduate level course work and 525 hours of clinical practice.

Admission Criteria

Hold an MSN degree from a professionally accredited nursing program.

Minimum of a 3.0 GPA on a 4.0 scale for the master’s degree program.

Recent acute/critical care experience (within the past three years).

A 300 word essay describing professional goals.

Completion of the following prerequisite courses: graduate level pharmacology, pathophysiology, and advanced assessment.

Completion of an interview with the selection committee.

Advanced Cardiac Life Support (ACLS) Certification.

Program of Study

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>8200:691</td>
<td>Acute Care Nurse Practitioner I</td>
<td>4</td>
</tr>
<tr>
<td>8200:692</td>
<td>Clinical Management II</td>
<td>3</td>
</tr>
<tr>
<td>8200:693</td>
<td>Acute Care Nurse Practitioner II</td>
<td>4</td>
</tr>
<tr>
<td>8200:694</td>
<td>Acute Care Nurse Practitioner III</td>
<td>4</td>
</tr>
<tr>
<td>8200:696</td>
<td>Clinical Reasoning</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
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<td>16</td>
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</tbody>
</table>

ADDITION COUNSELING

(560102GC)

Robert C. Schwartz, Ph.D., Coordinator

(Admissions temporarily suspended.)

The Addiction Counseling certificate program prepares master’s-level practitioners to assess, diagnose, and treat persons with addictive disorders using various counseling strategies. Trainees will complete coursework related to theory, assessment, treatment planning, and treatment of addicted clientele. Trainees will then gain supervised clinical experience specifically related to counseling clients with addictive disorders. Licensed mental health practitioners may list addiction counseling under their identified scope of practice after completion of this certificate program.

Admission

Persons are eligible for admission to the Graduate Certificate Program in Addiction Counseling if they are currently enrolled in a master’s degree program in counseling or a closely related field or currently hold a master’s degree in counseling or a closely related field. To participate in the program the student should:
- Be formally admitted to The University of Akron as a degree seeking or a special non-degree graduate student.
- Make written application to the program to the Counselor Education Coordinator in the Department of Counseling and Special Education.
- Receive written notification for admission from the Counselor Education Admissions Committee.
- Consult with the Counselor Education Program Coordinator to plan for an internship in an appropriate addictions counseling setting.

### Requirements

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>5600:752</td>
<td>Addiction Counseling I: Theory and Assessment</td>
<td>3</td>
</tr>
<tr>
<td>5600:734</td>
<td>Addiction Counseling II: Treatment Planning and Intervention Strategies</td>
<td>3</td>
</tr>
<tr>
<td>5600:685</td>
<td>Internship in Counseling</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Total credit hours</td>
<td>12</td>
</tr>
</tbody>
</table>

### Program of Study

**Prerequisite Courses:**
- 8200:608 Pathophysiological Concepts: 3
- 8200:610 Advanced Adult/Gerontological Assessment: 3
- 8200:612 Advanced Clinical Pharmacology: 3

**Post MSN Adult/Gerontological Health Nursing CNS Certificate Program Courses:**
- 8200:677 Adult/Gerontological Health Nursing CNS III: 2
- 8200:678 Adult/Gerontological Health Nursing CNS III Practicum: 2
- 8200:673 Adult/Gerontological Health Nursing CNS IV: 1
- 8200:679 Adult/Gerontological Health Nursing CNS IV Practicum: 3
- 8200:636 Adult/Gerontological Health Nursing CNS Residency: 2-4

Total 10-12 credit hours contingent on individual program plan and completion of clinical hours required for certification.

### Program of Study

**Students must complete a minimum of 500 clinical hours for eligibility to sit for certification.**

**Required Courses:**
- 8200:627 Adult/Gerontological Health Nursing NP I Practicum: 2
- 8200:628 Adult/Gerontological Health Nursing NP II Practicum: 2
- 8200:629 Adult/Gerontological Health Nursing NP III Practicum: 2
- 8200:623 Adult/Gerontological Health Practicum NP: 1
- 8200:690 Clinical Management I: 3
- 8200:692 Clinical Management II: 3
- 8200:694 Clinical Management III: 3

Total: 17

**Advanced Certificate in Family Conflict at the Center for Conflict Management (300010GC)**

The University of Akron has a long history of the interdisciplinary study of conflict, because understanding the nature of conflict is the first step toward reducing conflict and violence at home, in our communities, workplaces, and schools. This graduate certificate, jointly administered by the departments of Political Science and Sociology, will build on that tradition to enhance the capacity of students to effectively work toward reducing the harms associated with family conflict and violence.

**Required Core Courses:**
- Conflict Analysis Core Courses:
  - 3700:622 Seminar in Alternatives to Violence at Home and Abroad: 3
  - 3850:555 Family Violence: 3
- Skill Development Core Courses:
  - 7400:585-008 Seminar: General Mediation Training: 3
  - 7400:585-007 Seminar: Divorce Mediation Training: 3

**Elective Courses:** (choose three)*
- 3850:523 Sociology of Women: 3
- 3850:528 Victim in Society: 3
- 3700:620 Special Topics (conflict related): 1-3
- 9200:638** Family Law: 3
- 9200:684** Alternative Dispute Resolution: 3

**Total credit hours:** 16

*To complete the certificate, students must submit a seminar paper from one of their courses selected from the electives list to the Director of the Center for approval as a scholarly investigation of the issues surrounding family conflict.

**Advanced Certificate in Global Conflict at the Center for Conflict Management (300011GC)**

The University of Akron has a long history of the interdisciplinary study of conflict, because understanding the nature of conflict is the first step toward reducing conflict and violence at home, in our communities, workplaces, and schools. This graduate certificate, jointly administered by the departments of Political Science and Sociology, will build on that tradition to enhance the capacity of students to effectively work toward reducing the harms associated with global conflict and violence.

**Required Core Courses:**
- Conflict Analysis Core Courses:
  - 3700:622 Seminar in Alternatives to Violence at Home and Abroad: 3
  - 3850:555 Family Violence: 3
- Skill Development Core Courses:
  - 7400:585-008 Seminar: General Mediation Training: 3
  - 7400:585-007 Seminar: Divorce Mediation Training: 3

**Elective Courses:** (choose three)*
- 3850:521 Race and Ethnic Relations: 3
- 3700:512 Global Environmental Politics: 3
- 3700:610 Seminar in International Politics: 3
- 3700:690 Special Topics (global conflict related): 1-3

**Total credit hours:** 19

*To complete the certificate, students must submit a seminar paper from one of their courses selected from the electives list to the Director of the Center for approval as a scholarly investigation of the issues surrounding global conflict.
ADVANCED ROLE SPECIALIZATIONS IN NURSING MANAGEMENT AND BUSINESS (820101GC)

This certificate program is open to all current master’s and doctoral students in the College of Nursing, post-baccalaureate students, post-MSN students, and post-doctoral nurses who are currently in advanced practice.

Admission:

Formal admission to the University of Akron is required as either a post-baccalaureate student, graduate student, or non-degree graduate student. The awarding of this certificate is not contingent upon a degree completion program.

Program of Study:

Students should successfully complete all four courses listed below.

- 8200:630 Resource Management in Nursing Settings 3
- 8200:632 Fiscal Management in Nursing Administration 3
- 8200:634 Nursing Leadership in Organizations II 3
- 8200:635 Organizational Behavior in Nursing Settings 3

Total credit hours 12

APPLIED POLITICS (370005GC)

John C. Green, Ph.D., Director

The Ray C. Bliss Institute and the Department of Political Science have combined to offer a Certificate Program in Applied Politics for graduate students. The Certificate Program in Applied Politics offers course work in the history, organization and management of campaigns intended to influence the outcome of political decisions. Working from a set of core courses, students are allowed to concentrate in the area of applied politics of greatest interest—campaigns, communications, lobbying, political parties, etc. Believing that democracy is best served by having active and informed citizens, the certificate is designed for all students, no matter what their degree program as long as they have a deep interest in practical politics.

Requirements

Persons are eligible for admission to the Certificate Program in Applied Politics if they have been admitted to study as full-time students, special, or non-degree in any department of the University. Students who are pursuing a graduate degree in other departments at the University may be admitted to the Master’s level certificate program upon the recommendation of the chair/director of the department/school in which they are enrolled. The student shall schedule courses with the assistance of an advisor at the earliest possible time.

Core Courses (required – 12 credits):

- 3700:570 Campaign Management I 3
- 3700:571 Campaign Management II 3
- 3700:672 Seminar: Political Influence and Organizations 3
- 3700:696 Internship in Government and Politics 3

Electives: (required – 6 credits):

Three credits selected from the following:

- 3700:540 Survey Research Methods 3
- 3700:572 Campaign Finance 3
- 3700:574 Political Opinion, Behavior and Electoral Policies 3
- 3700:577 Lobbying 3
- 3700:655 Campaign and Election Law 3
- 8000:575 Political Communication 3

Three credits of additional course work from above or from approved courses from Political Science, Communication, Public Administration, or other departments.

Certificate

Upon completion of their degree, M.A. in Political Science students who have completed certificate requirements will be awarded an M.A. degree in Political Science with a Certificate in Applied Politics. Majors in other disciplines will be given a Certificate in Applied Politics and have the certificate noted on their transcript.

ASIAN STUDIES GRADUATE CERTIFICATE (340001GC)

Dr. Janet Klein, Director

Department of History, (330) 972-2562 or klein@uakron.edu

The graduate certificate in Asian Studies offers students a multidisciplinary course of study that will provide them with in-depth training in a special area that may be particularly useful as they pursue careers in such fields as Academia, Law, Public History, Education, Business, or Medicine where they will practice their profession abroad or use their international experience to expand their understanding of these regions as they work with topics on or populations from diverse societies in Asia. The certificate complements any graduate major and is also appropriate for students with a graduate degree who might like to return to the university for mid-career training.

Requirements

Two years of an Asian language (or equivalent), which serves as the program’s core requirement plus four courses of approved electives. A minimum 3.0 grade point average in the courses that will fulfill the certificate. The student must be in good academic standing in his/her major department if enrolled in a degree program.

Language Core:

The entering student who does not have proficiency in an Asian language will have to satisfy the language requirement by completing two years of an Asian language offered by The University of Akron or any other accredited institution. Students may also fulfill the language requirement by demonstrating competency in the equivalent of a fourth-semester level of his/her chosen language at the FS-1 level (U.S. Department of State) or equivalent level. Currently The University of Akron offers the following:

- 3500:101 Beginning Chinese 4
- 3500:102 Beginning Chinese II 4
- 3500:201 Intermediate Chinese 3
- 3500:202 Intermediate Chinese II 3
- 3500:301 Beginning Japanese 4
- 3500:302 Beginning Japanese II 4
- 3500:401 Intermediate Japanese 3
- 3500:402 Intermediate Japanese II 3

Elective Courses:

Complete four of the following courses. At least one must be outside the student’s major department.Exceptions or substitutions require approval from the Director.

Credits will be provided with Director’s approval for study and certain experiences abroad in Asian countries.

- 3370:695 Field Studies in Geology* 3
- 3400:500 Women in Revolutionary China 3
- 3400:501 Japan and the Pacific War, 1895-1945 3
- 3400:516 Modern India 3
- 3400:596 Special Studies in Asian History 3
- 3400:610 Comparative Studies in World Civilization 3
- 3400:640 Reading Seminar: China 4
- 7100:501 Special Topics** 3

*Field Studies in Geology abroad counts for double credits.

**Recent 500-level Selected Topics in the School of Art have included “The Art of India,” “The Art of China,” “The Art of Korea and Japan,” and “The Art of Buddhist Japan.”

Courses with comparative content are encouraged. Any course that has significant Asian content and for which the student has presented substantial written work on an Asian topic may count toward the certificate program with the Director’s approval. Students should consult with the Director for help planning an appropriate course of study.

CASE MANAGEMENT FOR CHILDREN AND FAMILIES (H40202GC)

Richard Glotzer, Ph.D., Coordinator

Program

This certificate program is a special course of study which can be added to any graduate degree program. It may also be completed by a non-degree graduate student with special permission from the director of the Center for Family Studies. This certificate represents a concentration in theoretical and practical knowledge in collaborative cross-systems case management for children and families in the context of community-based services. This course of study promotes collaboration among disciplines and services.

Admission

To participate in the program the student should:

Be formally admitted to The University of Akron as a postbaccalaureate, graduate or non-degree graduate student.

Make written application to the program and receive written notification of admission from The Center for Family Studies.

Requirements

Core:

Students should successfully complete all three of the core courses listed below. However, the first two courses plus three hours of electives must be completed prior to the student’s enrollment in the practicum course.

- 7400:561 Case Management for Children and Families I 3
- 7400:562 Case Management for Children and Families II 3
- 7400:563 Practicum in Cross-Systems Case Management for Children and Families 3
Electives:
Students must successfully complete six credits of coursework selected from the various departmental courses listed below.
- Family and Consumer Sciences
  - 7400:501 American Families in Poverty (online) 3
  - 7400:504 Middle Childhood and Adolescence 3
  - 7400:540 Family Crisis 3
  - 7400:546 Culture, Ethnicity and the Family (online) 3
  - 7400:602 Family in Life-Span Perspective 3
  - 7400:610 Child Development Theories 3
  - 7400:651 Family and Consumer Law 3
  - 7400:666 Development in Infancy and Early Childhood 3
- Home-Based Intervention
  - 1820:503 Home-Based Intervention Theory 3
  - 1820:504 Home-Based Intervention Techniques and Practice 3

**CHILD AND ADOLESCENT HEALTH NURSE PRACTITIONER**

(820006GC)
The Post-MSN Child and Adolescent Health Nurse Practitioner certificate program is designed for those nurses who hold the Master of Science in Nursing degree and are seeking preparation for the role of the pediatric nurse practitioner. Upon completion of the 17 credit hour program, the students are eligible to sit for the pediatric nurse practitioner certification examination.

**Admission**
Admission criteria include the following:
- Hold an MSN degree from a professionally accredited nursing program.
- Minimum of a 3.0 GPA on a 4.0 scale for the master's degree program.
- A minimum of one year of clinical experience in a pediatric setting.
- Complete an interview with the program coordinator.
- Completion of the following prerequisite courses: Pathophysiological Concepts, Advanced Pediatric/Adolescent Assessment, Nutrition.

**Program of Study**
Students are required to complete a minimum of 500 clinical practice hours in conjunction with the Child and Adolescent Health Nursing courses.

**Required Courses**
- 8200:651 Child and Adolescent Health Nursing I 3
- 8200:651 Child and Adolescent Health Nursing I Practicum 2
- 8200:656 Child and Adolescent Health Nursing II Practicum 2
- 8200:656 Pharmacology for Child and Adolescent Health Nursing 3
- 8200:658 Child and Adolescent NP Internship (required 4 credits) 1-4

**Total** 17

**Electives:**
Students who have already completed coursework in Law, Accounting or Family Studies and the Graduate School for admission as non-degree students. Persons currently working toward a doctorate or Juris Doctor at the University may participate in the certificate program as a cognate or minor. In this case, students must receive permission from their academic department as well as admission from the Center for Family Studies. Since the educational preparation prior to entry to this program will be quite diverse, the selection of courses within the certificate will vary among the participants. However, all students are expected to complete the core courses in addition to 10 credit hours selected from among several disciplines related to divorce mediation.

**COMPOSITION**

(330002GC)
Lance Svehla, Ph.D., Director

**Requirements**
To be eligible for the certificate in composition, a person must be admitted to the University as a graduate student (with either full or provisional status). An eligible person interested in the program should contact the program director. Five courses in composition or linguistics are required. Other appropriate English courses in composition or linguistics may be substituted as optional courses with the permission of the director.

**Required Courses:**
- 3300:676 Theory and Teaching of Basic Composition 3
- 3300:673 Theories of Composition 3
- 3300:674 Research Methodologies in Composition 3

**Optional Courses:**
- 3300:570 History of English Language 3
- 3300:571 U.S. Dialects: Black and White 3
- 3300:589 Seminar in English: Grammatical Structures of Modern English 3
- 3300:575 Theory of Rhetoric 3
- 3300:589 Seminar in English: Sociolinguistics 3
- 3300:670 Modern Linguistics 3
- 3300:689 Seminar in English: Stylistics 3
- 3300:689 Seminar in English: Contextual Linguistics 3

**DIVORCE MEDIATION**

(H40201GC)
Richard Glotzer, Ph.D., Coordinator

**Requirements**
This graduate certificate program in divorce mediation requires a minimum of 15 graduate credits dependent upon previous educational background. The program has been designed to serve the practicing or prospective divorce mediator.

- All applicants to the program should have previously earned a law degree or a master's degree (at minimum in the behavioral sciences, such as psychology, social work, counseling, and marriage and family therapy, or child and family development). Applicants planning to pursue the certificate must apply to the Center for Family Studies and the Graduate School for admission as non-degree students. Persons currently working toward a doctorate or Juris Doctor at the University may participate in the certificate program as a cognate or minor. In this case, students must receive permission from their academic department as well as admission from the Center for Family Studies. Since the educational preparation prior to entry to this program will be quite diverse, the selection of courses within the certificate will vary among the participants. However, all students are expected to complete the core courses in addition to 10 credit hours selected from among several disciplines related to divorce mediation.

**Core:**
- 1800:601 Divorce Mediation 3
- 1800:602 Divorce Mediation Practicum 2

**Select at least one from each area:**
- **Law**
  - 9200:638 Family Law 3
- **Accounting**
  - 6200:601 Financial Accounting 3
  - 9200:621 Accounting for Lawyers 3
- **Family**
  - 5600:655 Marriage and Family Therapy: Theory and Techniques 3
  - 5600:667 Marital Therapy 3
  - 7400:67 Family Dynamics 3

**Electives:**
Students who have already completed coursework in Law, Accounting or Family may select from courses listed below:
- 5600:647 Career Counseling 3
- 5800:669 Systems Theory in Family Therapy 3
- 7400:540 Family Crisis 3
- 7400:590 W: Family and Divorce 2
- 7400:602 Family in Life-Span Perspective 3
- 9200:684 Alternate Dispute Resolution 3
E-BUSINESS (560100GC)
B. S. Vijayaraman, Ph.D., Director

A new breed of technologies have offered new vistas and business opportunities. These technologies (called Web 2.0) have created possibilities for organizations to be innovative by incorporating internet social network and community tools such as blogs, wikis, and mashups. These technologies have also opened up new avenues and business models for entrepreneurs. The e-business certificate program is designed for students to learn how individuals can create exciting business opportunities on the internet. Persons are eligible for admission to the graduate certificate program if they have been admitted to the Graduate School at The University of Akron. Students admitted to the e-business certificate program may enroll only in those courses required for the completion of the certificate.

Required Courses:
- 5600:608 Entrepreneurship 3
- 5600:644 Knowledge Management and Business Intelligence 3
- 6600:600 Marketing Concepts 3
- 6600:635 E-Commerce and Interactive Marketing 3

Choose one of the following:
- 6500:665 Management of Technology 3
- 6500:663 Data Analysis for Managers 3
- 6600:645 Innovative Marketing Strategies 3
- 6600:650 Customer Relationship Marketing 3

E-LEARNING (510006GC)
Cheryl Ward, Ph.D., Coordinator

Program
This certificate program in e-Learning requires a minimum of 16 credit hours. The certificate in e-Learning Technologies has been designed to assist students in becoming competent, employable professionals capable of making a significant contribution in the field of education and training. The graduate curriculum provides its students with exposure to a wide range of distance learning technologies, while still ensuring the basic competencies required of all practitioners. In this way, the program directly addresses the rapidly accelerating changes in distance learning technologies. Courses are delivered in online, face-to-face, and blended formats that model e-Learning delivery modes.

Applicants wishing to pursue only the certificate program must apply to the graduate school for admission as a non-degree student.

Requirements (16 credits):
- 5400:501 Learning with Technology 1
- 5150:631 Instructional Design 3
- 5150:632 Web-based Learning Systems 3
- 5150:633 Multimedia/ hypermedia 3
- 5150:639 Strategies for Online Teaching and Learning 3
- 5150:696 Technology Project 3

Total 16

EDUCATIONAL ASSESSMENT AND EVALUATION (510004GC)

This graduate certificate program is geared toward current or future classroom teachers and other educators, who want to expand their knowledge of the basic principles and applications of assessment and evaluation. The coursework in the certificate program focuses on data-driven decision making as a cyclical process, and the student will apply their new knowledge and skills to their unique professional situations. The program is applicable to all educators with a focus across disciplines, content areas, and grade levels. Eighteen credit hours are required to earn the certificate. The following skill-set describes the overall goals of the program.

- Designing and implementing formative and summative assessments;
- Analyzing and interpreting assessment data to improve teaching and learning;
- Applying evaluation theory and diverse approaches in authentic situations;
- Implementing assessment and evaluation to impact practices at the classroom, school, and district level;
- Locating, analyzing, interpreting, and using multiple data sources to make data-evidenced decisions.

Required Courses:
- 5100:640 Techniques of Research 3
- 5100:642 Introduction to Classroom Assessment for Teachers 3
- 5100:650 Implementing Assessment in the Classroom 3
- 5100:651 Data-Driven Decision Making for Educators 3
- 5100:652 Introduction to Educational Evaluation 3
- 5100:653 Practical Applications of Educational Evaluation 3

ENVIRONMENTAL ENGINEERING (430009GC)

This certificate program provides practicing professionals an opportunity to expand their knowledge base in environmental engineering. It is designed for people who cannot make the full time commitment to the graduate degree program but would like to receive recognition of their continued effort in the area of study or would like to cumulate credit hours toward their ultimate graduate degree goal.

Admission Criteria
This certificate is designed primarily for students with a B.S. degree in Civil Engineering or a closely related field.

Program of Study
Civil Engineering students may earn a Geotechnical Engineering Certificate by completing a total of 15 credit hours.

Civil Engineering students may earn an Environmental Engineering Certificate by completing five of the following courses:

- 4300:523 Chemistry for Environmental Engineers 3
- 4300:526 Environmental Engineering Design 3
- 4300:527 Water Quality Modeling and Management 3
- 4300:623 Physical/Chemical Treatment Processes 3
- 4300:624 Biological Wastewater Treatment Processes 3
- 4300:631 Soil Remediation 3

ENVIRONMENTAL STUDIES (300100GC)
Ira D. Sasowsky, Ph.D., Director

Program
This graduate certificate program is designed for environmental professionals who wish to broaden their background or update their skills. In order to satisfy the course prerequisites, it is recommended that students have an undergraduate degree in one of the natural sciences, engineering, or a strong background in mathematics and science. For advising please contact the Department of Geology and Environmental Science.

Admission
To participate in the program the student should:

- Be formally admitted to The University of Akron as a graduate or non-degree graduate student.
- Make a written application to the program and receive written notification of admission from the Center for Environmental Studies.

Requirements
A plan of study will be developed in consultation with the Director of the Center for Environmental Studies. Students must complete the core requirement and a minimum of 14 credits from the list of electives or other courses approved by the Director. Electives must be selected from a minimum of three different departments.

Core (required):
- 3370:580 Seminar in Environmental Studies 2
  (may be repeated as an elective)

Electives (minimum of 14 credits):
- 3100:500 Food Plants 2
- 3100:521 Tropical Field Biology 4
- 3100:526 Wetland Ecology 4
- 3100:660 Environmental Physiology 3
- 3100:624 Advanced Aquatic Ecology 4
- 3350:505 Geographic Information Systems 3
- 3350:507 Advanced Geographic Information Systems 3
- 3350:547 Remote Sensing 3
- 3350:549 Advanced Remote Sensing 3
- 3350:596 Soil and Water Field Studies 3
- 3370:511 Glacial Geology 3
- 3370:570 Geochemistry 3
- 3370:574 Groundwater Hydrology 3
- 3370:580 Seminar in Environmental Studies 2
- 3370:661 Geologic Record of Past Global Change 3
- 3370:674 Advanced Groundwater Hydrology 3
- 3400:571 American Environmental History 3
- 3470:561 Applied Statistics I 4
- 3700:512 Global Environmental Politics 3
FAMILY NURSE PRACTITIONER CERTIFICATE FOR CERTIFIED PNP S (820106GC)
The Post-MSN Family Nurse Practitioner Certificate program is designed for those nurses who hold the master's degree in Child and Adolescent Health or Pediatric Nursing, are certified as Pediatric Nurse Practitioners, and are seeking preparation to practice as a family nurse practitioner. Upon completion of the 16-18 credit hour program, students are eligible to sit for the family nurse practitioner certification examination.

Prerequisites:
5600:648 Individual and Family Development Across the Life-Span 3
8200:602 Advanced Adult/Gerontological Assessment/FNP 2
8200:612 Advanced Clinical Pharmacology 3

Required Courses:
8200:620 Adult/Gerontological Health Nursing NP I 2
8200:621 Adult/Gerontological Health Nursing NP II 2
8200:625 Primary Care of the OB Patient for the Family Nurse Practitioner 1
8200:690 Clinical Management I 3
8200:692 Clinical Management II 3
8200:694 Clinical Management III 3
8200:626 Adult/Gerontological NP Residency (consisting of 225-300 clinical hours) 1-4

FAMILY NURSE PRACTITIONER CERTIFICATE FOR ADULT AND/OR GERONTOLOGICAL NPs (820107GC)
The Post-MSN Family Nurse Practitioner Certificate program is designed for those nurses who hold the master's degree in Adult and/or Gerontological Nursing, are certified as Adult or Gerontological Nurse Practitioners, and are seeking preparation to practice as a family nurse practitioner. Upon completion of the 17-18 credit hour program, students are eligible to sit for the Family Nurse Practitioner certification examination.

Required Courses:
5600:648 Individual and Family Development Across the Life-Span 3
8200:617 Advanced Pharmacology: Child/Adolescent Health Nursing/FNP 2
8200:625 Primary Care of the OB Patient for the Family Nurse Practitioner 1
8200:651 Child and Adolescent Health Nursing I 3
8200:655 Child and Adolescent Health Nursing II 3
8200:658 CAHNP Residency (consisting of 225 clinical hours) 1-4

GRADUATE CERTIFICATE IN GENDER CONFLICT AT THE CENTER FOR CONFLICT MANAGEMENT (300014GC)
An 18 credit graduate certificate offering graduate students an opportunity to examine the scholarly debates surrounding gender conflicts.

Required Courses:
3700:522 Understanding Racial and Gender Conflict 3
3890:547 Sociology of Sex and Gender 3

Electives:
3700:502 Politics and the Media 3
3700:622 Seminar in Alternatives to Violence at Home and Abroad 3
3850:646 Social Inequalities 3
3850:510 Social Structures and Personality 3
3880:541 Sociology of Law 3
3850:555 Family Violence 3
3850:753 ST. Gender and Crime 3
3220:516 Anthropology of Sex and Gender 3
3220:563 Social Anthropology 3
3300:589 Seminar in English: Subversive Women 3
3300:589 Seminar in English: British Women Writers 3
3400:591 Special Studies: Women, Film, and History 3
3400:669 Reading Seminar in American History Since 1877 (US Women's History) 4

GRADUATE CERTIFICATE IN CROSS-CULTURAL NEGOTIATION (370013GC: South and East Asia Track) (370014GC: Middle Eastern Track)

South and East Asian Track
Conflict Core (6 credits):
3700:622 Alternatives to Violence at Home and Abroad 3
6600:576 Business Negotiations 3

Language Core (6 credits):
Complete second year Chinese or Japanese Language; or complete second year language work in another South or East Asian Language at an institution approved by the Director; or an equivalent approved by the Director.

Electives (9 credits):
3250:560 Economics of Developing Countries 3
3250:561 Principles of International Economics 3
3400:516 Modern India 3
3400:500 Women in Revolutionary China 3
3400:610 Graduate Reading Seminar:Comparative Studies: World Civilization 3
3700:610 Seminar in International Politics 3
3700:620 Seminar in Comparative Politics 3
3850:555 Family Violence 3
3850:521 Racial and Ethnic Relations 3
5500:590 China for Educators 3
6600:630 International Marketing Policies 3
7600:550 Communication in Conflict 3
7600:645 Intercultural Communication Theory 3
9200:684 Alternative Dispute Resolution 3

Middle Eastern Track
Conflict Core (6 credits):
3700:622 Alternatives to Violence at Home and Abroad 3
6600:576 Business Negotiations 3

Language Core (6 credits):
Complete second year language work on a Middle Eastern Language at an institution approved by the Director; or an equivalent approved by the Director.

Electives (9 credits):
3250:560 Economics of Developing Countries 3
3250:561 Principles of International Economics 3
3400:516 Modern India 3
3400:500 Women in Revolutionary China 3
3400:610 Graduate Reading Seminar:Comparative Studies: World Civilization 3
3700:610 Seminar in International Politics 3
3700:620 Seminar in Comparative Politics 3
3850:555 Family Violence 3
3850:521 Racial and Ethnic Relations 3
5500:590 China for Educators 3
6600:630 International Marketing Policies 3
7600:550 Communication in Conflict 3
7600:645 Intercultural Communication Theory 3
9200:684 Alternative Dispute Resolution 3

*Law School classes are offered on a space availability basis only.

GRADUATE CERTIFICATE IN GEOGRAPHIC INFORMATION SCIENCES (335008GC)
Program
The geographic information sciences (GIs) integrate concepts, methods, and tools for collecting, analyzing, and visualizing spatial data, including physical, environmental, social, and economic information. An education in this rapidly growing professional and scientific field leads to careers in the public and private sectors as GIS scientists, as geographic information systems (GIS) analysts, programmers, or technicians, or as cartographers or remote sensing analysts.
This graduate certificate can be taken by degree-seeking students in geology, biology, business, engineering, computer science, emergency management, anthropology, political science, public administration, geography, and other related disciplines. It can also be taken as a freestanding certificate by non-degree seekers such as professionals who want to enhance their knowledge and skills as well as by anyone who wants to learn about this rapidly advancing scientific and practical field.

For further program information contact Graduate Advisor, Department of Geography and Planning, (330) 972-7620.

**Requirements**

**Geotechniques Requirements (9 credits):**
- 3350:505 Geographic Information Systems 3
- 3350:540 Cartography 3
- 3350:547 Remote Sensing 3

**Geotechniques Electives (9 credits):**
- 3350:507 Advanced Geographic Information Systems 3
- 3350:541 Global Positioning Systems (GPS) 1
- 3350:542 Cartographic Theory and Design 3
- 3350:544 Applications in Cartography and Geographic Information Systems 3
- 3350:545 GIS Database Design 3
- 3350:546 GIS Programming and Customization 3
- 3350:549 Advanced Remote Sensing 3
- 3350:581 Research Methods in Geography and Planning 3
- 3350:583 Spatial Analysis 3
- 3350:596 Field Research Methods 3

**GEOTECHNICAL ENGINEERING (430008GC)**

This certificate program provides practicing professionals an opportunity to expand their knowledge base in geotechnical engineering. It is designed for people who cannot make the full time commitment to the graduate degree program but would like to receive recognition of their continued effort in the area of study or would like to cumulate credit hours toward their ultimate graduate degree goal.

**Admission Criteria**

This certificate is designed primarily for students with a B.S. degree in Civil Engineering or a closely related field.

**Program of Study**

Civil Engineering students may earn a Geotechnical Engineering Certificate by completing a total of 15 credit hours.

At least three (3) of the following courses must be taken:
- 4300:612 Advanced Soil Mechanics 3
- 4300:614 Foundation Engineering I 3
- 4300:615 Foundation Engineering II 3
- 4300:617 Numerical Methods in Geotechnical Engineering 3
- 4300:717 Soil Dynamics 3

Four of the following workshop courses may be taken and substituted for two (2) of the courses above:
- Load and Resistance Factor Design of Foundations and Geotechnical Features 1.5
- Ground Improvement Methods 1.5
- Mechanically Stabilized Earth Walls and Reinforced Soil 1.5
- Slopes 1.5
- Deep Foundations 1.5

Students interested in these workshop courses should contact the Department of Civil Engineering.

**GÉRONTOLOGIE**

(300006GC)

Harvey L. Sterns, Ph.D., Director

**Requirements**

This certificate program is a special course of study in gerontology that compliments graduate degree programs in various departments and colleges throughout the University. There is a combined graduate certificate program with Kent State University. Combined, the two universities offer a diverse range of graduate courses with aging-related content and joint faculty that are nationally and internationally recognized scholars in gerontology. The graduate certificate is to be received with either a master’s or doctoral degree. Individuals who already hold a graduate degree may also pursue the certificate. The program represents a concentration involving current knowledge and research in gerontology. It adds another dimension to the knowledge and skills a student is able to offer in the many professions that are becoming specialized in research and service to adults and older adults. This course of study coordinates interdisciplinary training of personnel in adult development and aging and helps to meet the critical shortage of trained individuals in the field of gerontology.

The graduate curriculum committee of the Institute for Life-Span Development and Gerontology will oversee this certificate program and certify, through the director of the Institute, that all requirements of the certificate have been completed.

**Admission**

To participate in the program at the graduate level, a student must:
- Obtain admittance to the Graduate School.
- Submit an application to the program countersigned by the student’s major academic advisor.
- Participate in an interview with the Director or designated faculty member of the Institute for Life-Span Development and Gerontology.
- Consult with the director or a designated faculty member to formulate a program of study.
- Receive written notification for admission from the director of the Institute for Life-Span Development and Gerontology.

**Program**

Minimum: 18 credits

**Core:**

- 3006:680 Research Methods Course 3*
- 3006:690 Interdisciplinary Seminar in Life-Span Development and Gerontology 3
- 3006:695 Practicum in Life-Span Development and Gerontology 3

**Electives:**

- 3006:686 Retirement Specialist 2
- 3006:690 Workshop — Women: Middle and Later Years 2
- 3006:694 Workshop — Aging: Process and Intervention 2
- 3700:569 Policy Problems: Aging Offered every other year 3
- 3750:620 Psychology Core II: Developmental, Perceptual, Cognitive 2
- 3750:727 Psychology of Adulthood and Aging 4
- 3850:681 Cross Cultural Perspectives in Aging 3
- 3850:678 Social Gerontology 3
- 5400:541 Educational Gerontology Seminar 3
- 5400:661 Current Issues in Higher Education: Life-Span and Community Education 3
- 6500:683 Health Services Systems Management (with permission) 3
- 7400:541 Family Relationships in Middle and Later Years 3
- 7700:624 Neurogenic Speech and Language Disorders 3
- 7705:550 Social Needs and Services for Later Adulthood and Aging 3

*From student’s home department.

**HEALTHCARE MANAGEMENT (650205GC)**

Healthcare is one of the fastest growing sectors in the economy. According to some estimates healthcare has accounted for as much as a third of new private jobs in recent times. The healthcare management certificate program is designed for students to understand the structure and components of the healthcare sector and their interdependencies. In addition, students will learn how services such as ambulatory care and inpatient care will affect the cost, quality, and accessibility of healthcare delivery.

Persons are eligible for admission to the graduate certificate program if they have been admitted to the Graduate School at The University of Akron. Students admitted to the healthcare management certificate program may enroll only in those courses required for the completion of the certificate.

**Required Courses:**

- 6500:680 Introduction to Healthcare Management 3
- 6500:682 Health Services Operations Management 3
- 6500:683 Health Services Systems Management 3

**Elective Courses (Choose six credits from the following):**

- 6500:655 Special Topics in Health Services Administration 1-3
- 6500:666 Health Services Research Project 3
- 6500:668 Independent Study in Health Services Administration 1-3
- 3250:536 Health Economics 3
- 3850:615 Epidemicologic Methods in Health Research 3
- 3850:656 Sociology of Healthcare 3
- 4800:630 Biomedical Computing 3
- 8200:622 Fiscal Management in Nursing Administration 3
- 6500:602 Computer Techniques for Managers 3
- 6500:641 Database Systems 3
- 6500:650 Human Resource Systems for Managers 3
- 6500:663 Data Analysis for Managers 3
- 6500:675 Supply Chain Management 3
- 6500:68x Any course with the approval of the Director 3
**HIGHER EDUCATION**

*590900GC*

**Requirements**
This certificate program in higher education requires a minimum of 18 credits. The program of studies has been designed to serve the practicing or prospective college or university administrator or instructor.

**Admission**
All applicants to the program should have previously earned a bachelor’s degree. Special admission for concurrent studies toward a master’s degree and the higher education certificate may be allowed for persons currently employed in higher education. Students interested in admission should first meet with the program coordinator. Persons wishing to pursue a master’s degree in Educational Administration-Higher Education Option must, however, also apply to the Graduate School for admission to the program. Applicants wishing to pursue only the certificate program must apply to the Graduate School for admission as a special non-degree student.

**Program**
Courses and internships in higher education are directed toward the study of administrative and academic operations of colleges and universities. Specific program options include: administration, student services, curriculum, and instruction options, a higher education teaching internship developed in conjunction with the student’s major academic advisor and the center staff may be anticipated. Internships may be completed at the University or at one of several cooperating institutions.

**Required (12):**

- **5100:703** Seminar: History and Philosophy of Higher Education 3
- **5190:513** Administration in Higher Education 3
- **5190:600** Advanced Administrative Colloquium in Higher Education 3
- **5190:601** Internship in Higher Education 2
- **5190:602** Internship in Higher Education Seminar 1

**Electives (6):**

- **5190:521** Law and Higher Education 3
- **5190:526** Student Services in Higher Education 3
- **5190:527** The American College Student (B) 3
- **5190:530** Higher Education Curriculum and Program Planning 3
- **5190:620** Finance in Higher Education 3
- **5190:626** Policy, Assessment, and Accountability in Higher Education 3

**Total hours required:** 18

**HUMAN-BASED INTERVENTION THERAPY**

*(H40200GC)*

Richard Glotzer, Ph.D., Coordinator

**Program**
This certificate program is a special course of study along with undergraduate and graduate degree programs in various departments and colleges throughout the University. Undergraduate students will earn the certificate upon graduation in their degree program. Individuals who have already hold undergraduate or graduate degrees may also pursue the certificate. Students with an undergraduate degree who do not seek a graduate degree may pursue the certificate in the postbaccalaureate program. Students who already hold a graduate degree may be admitted to the program as non-degree graduate students. Students pursuing graduate degrees will receive their graduate certificate upon completion of the requirements for their graduate degree. The program represents a concentration in current theoretical knowledge and skills a student is able to offer in the many professions that relate to services to at-risk children and their families. This course of study coordinates multidisciplinary training of personnel in home-based intervention and helps to meet the need for trained professionals in home-based intervention.

The undergraduate and graduate curriculum committees of the Center for Family Studies will oversee the certificate program and certify through the Director of the Certificate Programs in Home-Based Intervention that all requirements for the certificate have been completed.

**Admission**
To participate in the program at the graduate level, the student should:

- Be formally admitted to The University of Akron Graduate School.
- Make written application to the program countersigned by student’s major academic advisor (if applicable).
- Have an interview with the Director of the Certificate Programs in Home-Based Intervention.
- Receive written notification for admission from the Director of the Certificate Programs in Home-Based Intervention.

- Consult with the Director of the Certificate Programs in Home-Based Intervention to formulate a program of study.

All students enrolled in the home-based certificate programs will enroll in the core course in Home-Based Intervention. Students enrolled in the undergraduate and postbaccalaureate program will enroll in the courses at the undergraduate level. Students admitted to the Graduate School as degree seeking or non-degree students will enroll in graduate courses. Graduates students enrolled in the core courses at the 500 level will have an additional graduate level project.

**Requirements**

**Core Courses:**

1820:503 Home-Based Intervention Theory 3
1820:504 Home-Based Intervention Techniques and Practice 3
1820:505 Home-Based Intervention Internship 3-5

**Eligibility Courses:**
Students must have completed at least 9 credits of coursework in theoretical frameworks from their discipline or related areas follows:

**Theoretical Frameworks:**

- **Systems Theory**
  3850:620 General Systems Theory 3
  5600:643 Theories and Philosophy of Counseling 3
  5600:655 Marriage and Family Therapy: Theory and Techniques 3

- **Developmental Theory**
  3850:512 Socialization: Child to Adult 3
  7400:602 Family in Life-Span Perspective 3
  7400:606 Developmental Parent-Child Interactions (online) 3
  7400:610 Child Development Theories 3

- **Therapeutic Communication**
  5600:651 Techniques in Counseling 3
  5600:667 Mental Therapy 3
  5600:669 Systems Theory in Family Therapy 3

**Elective Courses (9 credits):**
Select one course from three different disciplines. (Must be outside student’s major degree area.)

**Specific Skill Areas:**

- **Psychology**
  3750:530 Psychological Disorders of Children 4
  3750:704 Theories of Personality 3

- **Sociology**
  3850:550 Sociology of Mental Illness 3
  3850:688 Human Ecology 3
  3850:753 Family and Health (Special Topics) 1-3

- **Counseling**
  5600:550 Counseling Problems Related to Life-Threatening Illness and Death 3
  5600:620 Issues in Sexuality for Counselors 3

- **Special Education**
  5610:540 Developmental Characteristics of Exceptional Individuals 3
  5610:560 Family Dynamics and Communication in the Educational Process 3
  5610:604 Collaboration and Consultation Skills for Special Educators 3

- **Multicultural Education (Curricular and Instructional Studies)**
  5500:571 Characteristics of Culturally Diverse Populations 3

- **Family and Consumer Sciences**
  7400:501 American Families in Poverty (online) 3
  7400:504 Middle Childhood and Adolescence 3
  7400:506 Family Financial Management 3
  7400:540 Family Crisis 3
  7400:542 Human Sexuality 3
  7400:546 Culture, Ethnicity, and the Family (online) 3
  7400:590 Workshop in Family and Consumer Sciences: Family and Divorce 2
  7400:596 Parent Education (online) 3

- **Social Work**
  7750:510 Minority Issues in Social Work Practice 3
  7750:551 Social Work and Child Welfare 3
  7750:552 Social Work and Mental Health 3
  7750:554 Social Work in Juvenile Justice 3

**HUMAN RESOURCE MANAGEMENT**

*(65000SGC)*

**Program**
The Human Resource Management Certificate is a course of study that educates an individual who seeks a career in Human Resources or who is working in Human Resources without having had formal training.
Admission
To participate in the program, the student must be formally admitted to The University of Akron as a graduate or non-degree student and must complete 15 credits. Students should visit the Director of Graduate Studies in Business Administration to request that notification of the certificate be included on the student’s transcript as soon as the course of study is completed. Students admitted to the Human Resource Management Certificate Program may enroll only in those courses required for completion of the certificate.

Requirements (complete all 15 credits)
6500:600 Management and Organizational Behavior* 3
And Pick Four Out Of:
6500:650 Human Resource Systems for Managers 3
6500:651 Management of Organizational Transformation 3
6500:658 Strategic and Global Human Resource Management 3
6500:660 Staffing and Employment Regulation 3
6500:654 Management of Organizational Conflict 3

*Students who waive 6500:600 will be required to substitute either 6500:651 Management of Organizational Transformation or 6500:654 Management of Organizational Conflict per approval of Department of Management Chair.

INFORMATION SYSTEM PROJECT MANAGEMENT
(650206GC)
Program
Information system project portfolios consist of a combination of off-shored and onshore outsourcing as well as in-house development. The successful collaboration between the various stakeholders in global teams is now a necessity. Project management has thus assumed a key role in determining the success of IT based initiatives in this complex and dynamic environment. The IS Project Management graduate certificate program has been designed to meet the needs of IT and other professionals who are interested in developing this expertise. The fifteen credit hour certificate program consists of coursework addressing key areas in the project management life cycle. These include project planning, requirements analysis and design, rapid application development (RAD), and implementation.

Required Courses:
6500:643 Systems Analysis and Design 3
6500:646 Software Development and Quality Assurance 3
6500:646 Enterprise Systems Implementation 3
6500:678 Project Management 3

Choose one of the following:
6500:644 Knowledge Management and Business Intelligence 3
6500:640 Information Systems and IT Governance 3
6500:641 Business Database Systems 3
6500:651 Management of Organizational Technology 3

LITERACY SPECIALIST
(520101GC)
Program
The Literacy Specialist certificate program, offered by a consortium of eight Ohio universities, is an advanced program in literacy education. The program is designed as a one-year program, consisting of 18 credit hours, including both online coursework and an internship. Successful completion of the program qualifies the individual to serve in instructional leadership positions at the state, regional, and local educational levels.

Required Courses (18 credits):
5500:660 Coaching in Diverse Classrooms 2
5500:661 Coaching for Effective Assessment Practice 2
5500:662 Pedagogy of Effective Literacy Instruction 2
5500:663 Professional Development in Literacy 2
5500:664 Advanced Literacy Research 2
5500:665 Internship 8

LANGUAGE
(330010GC)
Henry Nunn, Ph.D., Coordinator
To be eligible for the graduate certificate in literature, a person must be admitted to the University as a graduate student (with either full or provisional status). An eligible person interested in the program should contact the Graduate Coordinator in the Department of English. Of the five required courses (15 credits), two must be core courses, Chaucer and Shakespearean Drama; four of the five courses must be at the 600-level; and one must be in American literature.

Core Courses:
3300:506 Chaucer* 3
3300:615 Shakespearean Drama 3

*Unless the student has passed a comparable course at the undergraduate level with a grade of B or better.

MANAGEMENT OF TECHNOLOGY AND INNOVATION
(650107GC)
R. Ray Gehani, D.Eng., Ph.D., Director
In an increasingly global economy integrated with technology, the innovative enterprises with effective and efficient management of technology and innovation will gain competitive advantage over their rivals. To respond to these needs of our potential employers, this certificate program in Management of Technology and Innovation was developed by the College of Business Administration with the cooperation of the College of Polymer Science and Polymer Engineering and the guidance of the members of the Advancement Councils of the two colleges. This graduate certificate program offers courses in Management of Technology and other innovation-related business disciplines, including marketing, finance, accounting, entrepreneurship, and more. This certificate program will prepare the learners to innovate and manage a technology-driven enterprise.

To participate in the program the student should:
- Be formally admitted to The University of Akron as a graduate or non-degree graduate student.

Students admitted to the Management of Technology and Innovation Certificate Program may enroll only in those courses required for completion of the certificate.

Required Courses:
6500:665 Management of Technology 3
6500:659 Polymer Management Decisions 3
6500:600 Marketing Concepts 3
6500:601 Financial Accounting 3

Recommended Electives:
Select six credits from the following for which the proper prerequisites have been met:
6200:610 Process Analysis and Cost Management 3
6400:600 Managerial Finance 3
6500:600 Management and Organizational Behavior 3
6500:602 Computer Techniques for Management 3
6500:608 Entrepreneurship 3
6500:650 Human Resource Systems for Managers 3
6500:654 Management of Organizational Conflict 3
6500:656 Management of Global Supply Chain and Operations 3
6600:625 Brand Management 3

MIDDLE EASTERN STUDIES
GRADUATE CERTIFICATE
(340002GC)
Dr. Janet Klein, Director
Department of History, (330) 972-2562 or klein@uakron.edu
The graduate certificate in Middle Eastern Studies offers students a multidisciplinary course of study that will provide them with in-depth training in a special area that may be particularly useful as they pursue careers in such fields as Academia, Law, Public History, Education, Business, or Medicine where they will practice their profession abroad or use their international experience to expand their understanding of these regions as they work with topics on or populations from diverse societies in the Middle East. The certificate complements any graduate major and is also appropriate for students with a graduate degree who might like to return to the university for mid-career training.

Requirements
Two years of a Middle Eastern language (or equivalent), which serves as the program’s core requirement plus four courses of approved electives. A minimum 3.0 grade point average in the courses that will fulfill the certificate. The student must be in good academic standing in his/her major department if enrolled in a degree program.

Language Core:
The entering student who does not have proficiency in a Middle Eastern language will have to satisfy the language requirement by completing two years of a Middle Eastern language offered by The University of Akron or any other accredited institution. Students may also fulfill the language requirement by demonstrating competency in the equivalent of a fourth-semester level of his/her chosen language at the FS-1 level (U.S. Department of State) or equivalent level. Currently The University of Akron offers the following:
3500:101 Beginning Arabic 4
3500:102 Beginning Arabic II 4
3500:201 Intermediate Arabic 3
3500:202 Intermediate Arabic II 3
NURSE ANESTHESIA (820102GC)
The Post-Master’s Nurse Anesthesia certificate program prepares Registered Nurses to become Certified Registered Nurse Anesthetists and requires 27 months of concentrated theory and clinical practice. The program is built upon a core of biophysical sciences, pharmacology, principles of anesthesia, and professional role issues. Graduates of the program are prepared to deliver all types of perioperative anesthesia care to patients of all ages in a wide variety of health care settings and are eligible to take the National Certifying Examination. The program consists of 18 credits of graduate-level course work upon completion of required prerequisites and approximately 1000-1500+ hours of direct anesthetic management.

For information concerning Phase I required prerequisite courses (22 credit hours), please contact the College of Nursing, Graduate Program, (330) 972-7555.

**Admission**
Admission criteria include the following:
1. Hold an MSN degree from a professionally credentialed nursing program.
2. Minimum GPA of 3.0 on a 4.0 scale for the master’s degree program.
3. GRE (800 or greater on verbal and quantitative; 3.5 or greater on analytical) or MAT (greater than 50) within the last five years.
4. Current Ohio state license as a registered nurse.
5. Recent one-year experience in adult critical care.
6. Three letters of reference from a recent employer; a member of the nursing profession; a former faculty member.
7. Interview prior to admission to the program.
8. Acceptance into the anesthesia track is competitive and is decided by voting of the Admission Committee members.
9. Prerequisite: 3470:661 Statistics for Life Sciences

**Program of Study (Phase II):**

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>8200:637</td>
<td>Residency I (Pediatrics and Obstetrical)</td>
<td>4</td>
</tr>
<tr>
<td>8200:646</td>
<td>Residency II (Cardiac, Thoracic, Cardiovascular, and Neurology)</td>
<td>4</td>
</tr>
<tr>
<td>8200:648</td>
<td>Residency III (Hepatic, Renal, Endocrine, Head &amp; Neck, Trauma, and Burns/Pain Management)</td>
<td>4</td>
</tr>
<tr>
<td>8200:647</td>
<td>Professional Role Seminar</td>
<td>2</td>
</tr>
<tr>
<td>8200:649</td>
<td>Residency IV (Senior Seminar)</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>18</strong></td>
</tr>
</tbody>
</table>

NURSING EDUCATION (820100GC)
The certificate in Nursing Education allows for advanced role specialization in nursing education. Four sequential courses for a total of 12 credit hours comprise the certificate requirements. The certificate program is open to all current master’s and doctoral students in the College of Nursing, post-baccalaureate students, post-MSN students, post-doctoral and faculty currently teaching in nursing programs. Formal admission to The University of Akron is required as either a post-baccalaureate student, graduate student or non-degree graduate student. The awarding of this certificate is not contingent upon a degree completion program.

For information concerning admission to the certificate program, please contact the College of Nursing, Graduate Program, (330) 972-7555.

**Required Courses:**

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>8200:681</td>
<td>Instructional Methods in Nursing Education</td>
<td>3</td>
</tr>
<tr>
<td>8200:682</td>
<td>Nursing Curriculum Development</td>
<td>3</td>
</tr>
<tr>
<td>8200:683</td>
<td>Evaluation in Nursing Education</td>
<td>3</td>
</tr>
<tr>
<td>8200:684</td>
<td>Practicum: The Academic Role of the Nurse Educator</td>
<td>3</td>
</tr>
</tbody>
</table>

PARENT AND FAMILY EDUCATION (440203GC)

**Susan D. Witt, Ph.D., Coordinator**

**Program**
The certificate program is a special course of study which can be added to any graduate degree program. It may also be completed by a non-degree graduate student with special permission from the Coordinator. This certificate represents a concentration in theoretical and practical knowledge in parent and family education for community-based services. This course of study promotes collaboration among disciplines and services.

**Admission**
To participate in the program the student should:

Be formally admitted to The University of Akron as a postbaccalaureate, graduate or non-degree graduate student.

Contact the Coordinator of the program for requirements.
Interdisciplinary and Certificate Programs

**PSYCHIATRIC NURSE PRACTITIONER (820008GC)**

The Post-MSN Psychiatric Nurse Practitioner certificate program is designed for those nurses who hold the Master's degree in Psychiatric Mental Health Nursing or another nursing specialty and are seeking preparation for the role of the psychiatric nurse practitioner. Upon completion of the 10-13 credit hour program, students are eligible to sit for the psychiatric nurse practitioner certification examination. Post-MSN students who do not have their MSN in Psychiatric Nursing will be assessed on an individual basis and may have to take additional coursework in the track to acquire the competencies required to be eligible to sit for national certification.

**Admission**

Admission criteria include the following:

1. Holds an earned master's degree with a specialty of psychiatric nursing.
2. A GPA of 3.0 or better from the master's degree program.
3. Completes an interview with the program coordinator.

**Program of Study**

Students must complete a minimum of 500 clinical hours for eligibility to sit for certification.

**Prerequisite Courses:**

- 8200:608 Pathophysiological Concepts 3
- 8200:610 Advanced Adult/Gerontological Assessment 3
- 8200:611 Advanced Mental Health Assessment 3

**Required Courses:**

- 8200:662 Clinical Psychopharmacology 3
- 8200:665 Psychiatric Mental Health-Acute, APN II 3
- 8200:667 Psychiatric Mental Health-Chronic, APN III 3
- 8200:666 Psychiatric Mental Health Nursing Post-MSN Residency 1-4

*Total 10-13*

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**PUBLIC ADMINISTRATION AND URBAN STUDIES**

**Admission**

To participate in the certificate program an applicant first must satisfy the requirements for entrance into the Graduate School, or have a bachelor's degree and the equivalent of five years experience in a professional, administrative, or leadership position. Only applicants for admission as a non-degree graduate student within...
the department or students who are fully admitted to other graduate programs of the University and meet the experiential requirements are eligible for the certificates. Students admitted to the graduate programs of the department are not eligible for the certificate programs. Should a student wish to pursue additional coursework, the student must seek formal admission to either the MA in Urban Studies or MPA program. Participation in the certificate program in no way promotes or assures admission to graduate programs of the department, nor does it alter the requirements for admission to those degree programs. Subject to the Graduate School’s time limitation rule for degree completion, once a student has been admitted to a degree program, courses taken as part of a certificate program may be transferred into either of the department’s master’s programs.

Program

There are six variations of the Certificate Program in Public Administration and Urban Studies: a certificate in Public Management, a certificate in Non-profit Management, a certificate in Local and Regional Development Administration, a certificate in Political Analysis, a certificate in Program Evaluation, and a certificate in Urban Affairs. Each certificate requires the successful completion of 15 credit hours of required and elective coursework offered by the Department of Public Administration and Urban Studies, as specified below.

Public Management

- 3980:611 Introduction to the Profession of Public Administration (required) 3
- 3980:615 Public Organization Theory (required) 3
- 3980:616 Public Personnel 3
- 3980:617 Leadership and Decision Making (required) 3
- 3980:618 Citizenship Participation 3
- 3980:626 Grantmanship 3
- 3980:660 Strategic Management in Public and Non-profit Sectors 3
- 3980:680 Special Topics 3

Non-profit Management

- 3980:617 Leadership and Decision Making 3
- 3980:619 Community Organizing 3
- 3980:626 Grantmanship (required) 3
- 3980:660 Strategic Management in Public and Non-profit Sectors (required) 3
- 3980:662 Fund Raising and Resource Management (required) 3
- 3980:663 Non-profit Management (required) 3
- 3980:680 Special Topics 3

Local and Regional Development

- 3980:602 History of Urban Development (required) 3
- 3980:612 National Urban Policy 3
- 3980:619 Community Organizing 3
- 3980:641 Urban Economic Growth and Development (required) 3
- 3980:650 Comparative Urban Systems 3
- 3980:661 Public Project Design and Management (required) 3
- 3980:681 Special Topics 1-3

Policy Analysis

- 3980:600 Basic Quantitative Research (required) 3
- 3980:601 Advanced Quantitative Research (required) 3
- 3980:640 Fiscal Analysis 3
- 3980:643 Introduction to Public Policy 3
- 3980:673 Computer Applications in Public Organizations 3
- 3980:674 Analytical Techniques for Public Administration (required) 3
- 3980:680 Special Topics 3

Program Evaluation

- 3980:600 Basic Quantitative Research (required) 3
- 3980:601 Advanced Quantitative Research (required) 3
- 3980:640 Fiscal Analysis 3
- 3980:671 Program Evaluation in Urban Studies (required) 3
- 3980:673 Computer Applications in Public Organizations 3
- 3980:674 Analytical Techniques for Public Administration 3
- 3980:680 Special Topics 3

Urban Affairs

- 3980:602 History of Urban Development (required) 3
- 3980:612 National Urban Policy (required) 3
- 3980:618 Citizenship Participation 3
- 3980:619 Community Organizing 3
- 3980:621 Urban Society and Service Systems 3
- 3980:650 Comparative Urban Systems 3
- 3980:680 Special Topics 3

Electives:

- 3700:502 Politics and the Media 3
- 3700:562 Supreme Court and Civil Liberties 3
- 3700:530 Management of Probation and Parole 3
- 3700:622 Seminar in Alternatives to Violence at Home and Abroad 3
- 3850:646 Social Inequalities 3
- 3850:510 Social Structures and Personality 3
- 3850:530 Juvenile Delinquency 3
- 3850:541 Sociology of Law 3
- 3230:510 Evolution and Human Behavior 3
- 3230:563 Social Anthropology 3
- 3400:538 Nazi Germany 3
- 3400:554 The Civil War and Reconstruction, 1850-1877 4

Internship 3 credits from Sociology, Political Science, Anthropology, or History

STRUCTURAL ENGINEERING

(430006GC)

This certificate program provides professionals an opportunity to expand their knowledge base in the design and behavior of structural systems. It is designed for people who cannot make the full time commitment to the graduate degree program but would like to receive recognition of their continued effort in the area of study or would like to cumulate credit hours toward their ultimate graduate degree goal.

Admission Criteria

This certificate is designed primarily for students with a B.S. degree in Civil Engineering or a closely related field.

Program of Study

Civil Engineering graduates may earn a Structural Engineering Certificate by completing the following five courses:

- 4300:551 Computer Methods of Structural Analysis 3
- 4300:554 Advanced Mechanics of Materials 3
- 4300:655 Structural Stability 3
- 4300:664 Advanced Reinforced Concrete Design 3
- 4300:685 Advanced Steel Design 3

Total 15

SUPPLY CHAIN MANAGEMENT

(650202GC)

Supply chain management (SCM) is the process of planning, implementing, and controlling the operations of the supply chain as efficiently as possible. Supply chain professionals are actively involved in key management and coordination functions related to purchasing, contract negotiation, inventory management, transportation, and import/export policies. Today, it would be difficult to find an organization, large or small, that doesn’t understand the importance of supply chain management, and how successful implementation of supply chain management principles can have a positive impact on its overall success.

The Supply Chain Management graduate certificate program has been designed to meet the needs of business professionals who are interested in developing expertise in supply chain operations management. The fifteen credit hour certificate program consists of coursework addressing key aspects of supply chain operations management, including logistics, sourcing, and globalization.

Requirements (12 credits)

- 6500:576 Supply Chain Sourcing 3
- 6500:656 Management of Global Supply Chain 3
- 6500:675 Supply Chain Management 3
- 6500:680 Supply Chain Logistics Management 3

Requirements (Choose 3 credits from the following)

- 6500:600 Management and Organization Behavior 3
- 6500:662 Supply Chain Operations and Analysis 3
- 6500:670 Management of Supply Chains and Operations 3

TEACHING ENGLISH AS A SECOND LANGUAGE†

(330003GC)

Wei Zhang, Ph.D., Director

Requirements

This program is intended for those seeking training and an initial qualification in the teaching of English as a second language for the purpose of teaching ESL in settings other than the Ohio public school system.

The program is designed to introduce the student to the central issues in the theory and practice of teaching English to non-native speakers through courses in modern and applied linguistics, in second language pedagogy and in related disciplines.

Students who do not have English as a native language must demonstrate adequate proficiency in English with a valid TOEFL score of at least 550.
Program

3300:573 Seminar in Teaching ESL: Theory and Method 3
3300:589 Seminar in English: Grammatical Structures of English 3
5500:570 Multicultural Education in the U.S.** 3
or
3300:589 Seminar in English: Sociolinguistics** 2-3
5500:543 Techniques of Teaching English as a Second Language 4

†The awarding of this certificate is not contingent upon completion of a degree program. Undergraduate certificate programs require a 2.00 grade-point average; graduate certificate programs require a 3.00 grade-point average.

‡Choice to be decided in consultation with the program director.

TECHNICAL AND SKILLS TRAINING

(Q40100GC)

Qetler Jensrud, Ph.D., Coordinator (e-mail: qetler@uakron.edu)

This certificate program in technical and skills training is a special course of study within the College of Education to serve the practicing or prospective business and/or industrial-technical trainer. Persons are eligible for admission to the Certificate in Technical and Skills Training if they have been fully admitted to The University of Akron to study as graduate students. Individuals who hold undergraduate or graduate degrees may also pursue this certificate. All coursework must be completed within six years. Beginning Fall 2006 all courses will also be available online.

Requirements

Minimum: 18 Credits

5400:500 Postsecondary Learner 3
5400:600 The Two-Year College 3
5400:520 Postsecondary Instructional Technology 3
5400:530 Systematic Curriculum Design for Postsecondary Instruction 3
5400:535 Systematic Curriculum Design in Postsecondary Education 3
5400:675 Instructional Applications Seminar 3

The Instructional Applications Seminar is the last course taken.

TRANSPORTATION ENGINEERING

(430007GC)

This certificate program provides practicing professionals an opportunity to expand their knowledge base in the design and operation of transportation systems. It is designed for people who cannot make the full time commitment to the graduate degree program but would like to receive recognition of their continued effort in the area of study or would like to cumulate credit hours toward their ultimate graduate degree goal.

Admission Criteria

This certificate is designed primarily for students with a B.S. degree in Civil Engineering or a closely related field.

Program of Study

Civil Engineering students may earn a Transportation Engineering Certificate by completing the following three courses:

4300:564 Highway Design 3
4300:556 Pavement Engineering 3
4300:566 Traffic Engineering 3

and two of the following courses:

4300:663 Advanced Transportation Engineering I 3
4300:664 Advanced Transportation Engineering II 3
4300:665 Traffic Detection and Data Analysis 3

Total 15

WOMEN’S STUDIES

(180001GC)

For information, contact Women’s Studies, located in the Schrank Hall North 58, (330) 972-7008.

Interdisciplinary and specialized, the Women’s Studies graduate program fosters a critical approach to knowledge about women. By focusing on cultural practices that have largely excluded and devalued differences in gender, sexual orientation, ethnicity, race, and class, Women’s Studies prepares students to appreciate and act in a pluralistic world. The Women’s Studies graduate certificate integrates scholarship and research on women and gender from literature, psychology, history, sociology, and communication. Students are challenged to explore diverse viewpoints and discover the partial and often self-interested emphases of our society’s most powerful institutions – family, church, academia, business, and government.

Admission

Hold a Bachelor’s Degree with a minimum 2.75 grade point average.
SECTION 5. Graduate Courses

Course Numbering Index*

Interdisciplinary Programs
1800 Divorce Mediation 3001 Women's Studies
1820 Home-Based Intervention Therapy 3006 Institute for Lifespan Development and Gerontology
3000 Cooperative Education Development and Gerontology

Buchtel College of Arts and Sciences
3100 Biology 3500 Modern Languages
3110 Biology/NEOMED 3501 Arabic
3115 Public Health 3502 Chinese
3150 Chemistry 3510 Latin
3200 Classics 3520 French
3230 Anthropology 3530 German
3240 Archaeology 3550 Italian
3250 Economics 3580 Spanish
3300 English 3600 Philosophy
3350 Geography and Planning 3650 Physics
3370 Geology 3700 Political Science
3400 History 3750 Psychology
3450 Mathematics 3850 Sociology
3460 Computer Science 3980 Public Administration
3470 Statistics 4050 Urban Studies
3490 Engineering Applied Mathematics

College of Engineering
4100 General Engineering 4400 Electrical Engineering
4200 Chemical Engineering 4450 Computer Engineering
4300 Civil Engineering 4600 Mechanical Engineering
4400 Electrical Engineering 4800 Biomedical Engineering

College of Education
5100 Educational Foundations and Leadership 5550 Physical Education
5150 Instructional Technology 5560 Outdoor Education
5170 General Administration 5570 Health Education
5190 Higher Education Administration and Counseling 5600 Educational Guidance
5400 Postsecondary Technical Education 5610 Special Education
5700 Curriculum and Instructional Studies 5620 School Psychology
5800 Special Educational Programs

College of Business Administration
6200 Accountancy 6600 Marketing
6300 Entrepreneurship 6700 Professional
6400 Finance 6800 International Business
6500 Management

College of Creative and Professional Arts
7100 Art 7600 Communication
7500 Music 7800 Theatre
7510 Musical Organizations 7810 Theatre Organizations
7520 Applied Music 7920 Dance Performance

College of Health Sciences and Human Services
7400 Family and Consumer Sciences 7750 Social Work
7700 Speech Language Pathology
7710 and Audiology

College of Nursing
8200 Nursing

College of Polymer Science and Polymer Engineering
9841 Polymer Engineering 9871 Polymer Science

* Each course at the University has two numbers. One designates the college and department of which it is a part; one specifies the subject matter of the particular course. For instance:

3300:507 Middle English Literature

In the above example, the first four digits of the number (3300) indicate the college and department. In the case, 3000 represents the Buchtel College of Arts and Sciences; 300 refers to the Department of English. The second set of digits (507) following the colon, indicates exactly which course in the Department of English is being specified. The course number also indicates the level at which the course is being taught and the point at which the student is ready to take the course. A student must apply for and be admitted to the Graduate School before registering for graduate credit.

An explanation of that numbering system follows:

500-699 Master’s-level courses (also, 600-799 J.D.-level courses)
700-899 Doctoral-level courses

Interdisciplinary Programs

DIVORCE MEDIATION 1800:

601 DIVORCE MEDIATION PRACTICUM 2 credits
Prerequisite: 601. Practical application of divorce mediation procedures. Review of strategies and ethical considerations.

HOME-BASED INTERVENTION THERAPY 1820:

503 HOME-BASED INTERVENTION THEORY 3 credits
Prerequisite: 503. Overview of home-based intervention to include philosophy and description of this programming as well as assessment of family, their home and community environment.

504 HOME-BASED INTERVENTION TECHNIQUES AND PRACTICE 3 credits
Prerequisite: 503. Provides intervention techniques and skill areas required for home-based intervention and learning opportunities for matching techniques with specific family problems.

505 HOME-BASED INTERVENTION INTERNSHIP 3-6 credits
Prerequisite: 504. Gives students the opportunity to apply knowledge of home-based intervention in actual delivery process working with families in their homes under the direct supervision of trained, experienced home-based intervention therapists.

COOPERATIVE EDUCATION 3000:

501 COOPERATIVE EDUCATION 0 credits
Prerequisite: must complete 12 graduate credit hours with at least a 3.0 overall grade point average. (May be repeated.) For cooperative education students only. Work experience in business, industry, or governmental agency. Comprehensive performance evaluation and written report required. Graded credit/noncredit.

WOMEN’S STUDIES 3001:

580 FEMINIST THEORY 3 credits
A summary of feminist theory to familiarize students with the main currents in contemporary feminist theory and the origins and evolution of that thought.

585 SPECIAL TOPICS IN WOMEN’S STUDIES 1-3 credits
(May be repeated.) Specialized topics and current issues in Women’s Studies. Covers content and issues not currently addressed in other academic courses. Emphases will be on original source materials, critical analyses and the synthesis of empirical and theoretical aspects.

589 INTERNSHIP IN WOMEN’S STUDIES 1-4 credits
(May be repeated for a maximum of 4 credits.) Prerequisite: permission of Director of Women’s Studies. This class provides supervised experience and on-the-job training in an organization, agency, corporation or group dealing with women’s issues.

590 WORKSHOP 1-3 credits
(May be repeated.) Group experiential study of special issues in Women’s Studies.

593 INDIVIDUAL STUDIES ON WOMEN 1-3 credits
(May be repeated.) Directed study of selected topics related to women. Projects are chosen by student in consultation with instructor and approval of Director of Women’s Studies.

INSTITUTE FOR LIFE-SPAN DEVELOPMENT & GERONTOLOGY 3006:

680 INTERDISCIPLINARY SEMINAR IN LIFE-SPAN DEVELOPMENT AND GERONTOLOGY 3 credits
Prerequisite: 3-6 credits. An investigation of issues related to the design and implementation of pre-retirement planning and examination of life-span planning education as employed by labor, business and education.

685 SPECIAL TOPICS 1-3 credits
Prerequisite: permission of instructor. Specialized topics and current issues in life-span development, gerontology, or gender. Emphasis is on original source materials, critical analyses and syntheses of empirical, theoretical and applied aspects.

686 RETIREMENT SPECIALIST 2 credits
An investigation of issues related to the design and implementation of pre-retirement planning and examination of life-span planning education as employed by labor, business and education.

690 WORKSHOP 1-3 credits
(May be repeated.) Group studies of special topics in life-span development and gerontology. May be used as elective credit but not as part of certificate or degree.

695 PRACTICUM IN LIFE-SPAN DEVELOPMENT AND GERONTOLOGY 3 credits
Prerequisite: permission. Supervised experience in research or community agency work.
Graduate Courses

568 THE PHYSIOLOGY OF REPRODUCTION 3 credits
Study of the physiological mechanisms of reproduction throughout the animal kingdom with special emphasis upon mammalian endocrinological control. Controversial issues in the field will be examined and current research presented.

569 RESPIRATORY PHYSIOLOGY 3 credits
Study of mechanisms determining gas exchange including mechanics, ventilation, blood flow, diffusion, and control systems. Emphasis is given to normal human lung function. (Clinical aspects are not considered in detail.)

570 LAB ANIMAL REGULATIONS 1 credit
Required of anyone working with animals, and covers government regulations, care of animals and a lab to teach basic animal handling and measurement techniques.

571 PHYSIOLOGICAL GENETICS 4 credits
The integrative study of how genetics and physiology influence complex systems from molecular to behavioral in plants and animals. Laboratory.

572 BIOLOGICAL MECHANISMS OF STRESS 3 credits
Study of mechanisms from molecular to behavioral of how stress influences body systems and signals. The latest research and experimental issues are discussed.

573 COMPARATIVE ANIMAL PHYSIOLOGY 3 credits
Study of respiration, circulation, digestion, metabolism, osmoregulation, and excretion in a variety of invertebrate and vertebrate animals. Adaptation to the environment is emphasized.

574 COMPARATIVE ANIMAL PHYSIOLOGY LABORATORY 1 credit
Laboratory experiments in animal physiology (respiration, circulation, metabolism, osmoregulation). Presentation of results in scientific format and as oral reports.

580 MOLECULAR BIOLOGY 3 credits
Fundamentals of molecular biology, including recombinant DNA technology, applications in biotechnology, medicine, and genetic engineering. Mechanisms of gene regulation.

581 ADVANCED GENETICS 3 credits
Nature of the gene; genetic codes; hereditary determinants; mutagenesis and genes in population. Lecture and seminar.

582 NEUROBIOLOGY 3 credits
History of neuroscience; organization, function and development of the central nervous system; electrophysiological properties of nerve cells; learning and memory; molecular basis for mental diseases.

585 CELL PHYSIOLOGY 4 credits
Explores molecular and biochemical aspects of energy metabolism, inter and intracellular signaling, growth and death of cells. Emphasizes up-to-date scientific literature and techniques. Laboratory.

589 BIOLOGICAL PROBLEMS 12 credits each
Prerequisite: permission. Honors-level work, usually consisting of laboratory investigations. A maximum of 4 credits may apply toward the major degree requirements.

601 EVOLUTIONARY ECology 3 credits
Advanced studies of topics in ecology and evolution, including population genetics, coevolution, metapopulations, and conservation genetics. Lecture/discussion format.

604 TOPICS IN INTEGRATIVE BIOLOGY 4 credits
Reading, critical analysis, presentation, discussion and debate of cutting edge biological research with an emphasis on understanding the integrative approach to biological investigations.

616 GRADUATE EVOLUTIONARY BIOLOGY 4 credits
A survey of theory and methods in evolutionary biology including evolutionary genetics, natural selection, drift, mating systems, trait integration, plasticity, phylogenetics, and paleontology.

617 GRADUATE ECOLOGY 3 credits
Advanced training for students pursuing a professional/academic career in ecology or associated disciplines. Exploration of interactions at the organismal, population, community, and ecosystem levels.

618 EXPERIMENTAL APPROACHES IN FIELD ECOLOGY 4 credits
Prerequisite: Graduate status. Field oriented course intended to help students learn to formulate questions and hypotheses, design field studies, and analyze and interpret data, and present conclusions. Laboratory.

624 ADVANCED AQUATIC ECOLOGY 4 credits
Prerequisite: permission. This course examines interactions between aquatic organisms and their environment across freshwater and marine systems. It includes primary literature, field trips, and student-designed experiments.

625 BASIC DNA TECHNIQUES 3 credits
Basic DNA techniques including extraction of DNA, cleavage of DNA and cloning. Laboratory.

626 TECHNIQUES IN MOLECULAR BIOLOGY 3 credits
Discussion of current techniques in molecular biology such as microscopy, cell culture, gene expression, and protein analysis. Laboratory.

628 ADVANCED TOPICS IN BEHAVIOR 3 credits
Prerequisites: 526 or equivalent. Advanced studies of topics in behavior, emphasizing current scientific literature.

651 ENDOmology 4 credits
Prerequisite: Graduate standing in Biology. Exploration of the diversity and biology of insects and their relatives. Laboratories emphasize field exercises and a collection.

660 ENVIRONMENTAL PHYSIOLOGY 3 credits
Prerequisites: 501, 502. Study of physiological reactions of healthy mammals to natural changes or extremes of physical environment.

663 ADVANCED EXERCISE PHYSIOLOGY 3 credits
Through lecture, reading, and critical analysis of current literature, physiologic mechanisms of exercise in animals will be explored.

665 HISTOLOGY, CELL BIOLOGY, AND INTRODUCTION PATHOLOGY 4 credits
This course integrates cell biology and histology to show how organs are structured and function and how they are altered during sample pathologies. Laboratory.

670 MEDICAL PHYSIOLOGY, PATHOPHYSIOLOGY, AND PHARMACOLOGY 3 credits
Prerequisite: Admission to M.S.N. program, or 3100:561, or consent of instructor. Selected principles of human physiology, pathophysiology, and pharmacology are examined in depth, interpreted, and related to the care of patients in the clinical setting.

671 DEVELOPMENTAL BIOLOGY 4 credits
The study of cellular and molecular mechanisms underlying animal development. Laboratory.
673 INTEGRATIVE STRESS PHYSIOLOGY 3 credits
Prerequisite: B.S. in Biology or equivalent. This course is designed to examine the neural, physiological, genomic, and molecular mechanisms of how various types of stressors affect the organism.

674 INTEGRATED CARDIOVASCULAR PHYSIOLOGY 3 credits
Prerequisite: B.S. in Biology or equivalent. Integration of epidemiological, behavioral, physiological, molecular, and genetic mechanisms of cardiovascular function in health and disease. Emphasis on critical thinking and class discussions.

675 INTEGRATIVE PHYSIOLOGICAL GENOMICS 4 credits
Prerequisite: B.S. in discipline. This course uses methodologies from genetics and physiology to integrate the study of complex systems in a holistically approach to studying whole body systems.

676 INTEGRATIVE PHYSIOLOGY 3 credits
Exploration of the integrative nature of physiology through lecture, reading, and critical analysis of current literature.

677 SYSTEMS PHYSIOLOGY 3 credits
Study of the complex nature of specific physiological systems both as separate entities and interacting units.

681 CYTOLOGY 4 credits
The study of how a cell's structure, biochemistry, metabolism, and molecular biology integrate to produce cell function. Laboratory.

683 SELECTED TOPICS IN MICROBIOLOGY 3 credits
The study of organization, function, and development of the vertebrate nervous system.

685 ADVANCED CELL PHYSIOLOGY 3 credits
Structure and functional organization of cells at ultrastructural level. Three lecture hours a week.

688 PRINCIPLES OF TRANSMISSION ELECTRON MICROSCOPY 3 credits
Modern biological methods using transmission electron microscopy. Portfolio required to demonstrate proficiency in fixation techniques, use of ultramicrotome, light and electron microscopes and darkroom techniques.

689 PRINCIPLES OF SCANNING ELECTRON MICROSCOPY 3 credits
An introduction of modern biological methods using the scanning electron microscope. A portfolio is required to demonstrate proficiency in fixation techniques, the use of supplemental equipment such as the critical point drying apparatus and the sputtercoating apparatus and the efficient use of the scanning electron microscope.

695 SPECIAL TOPICS: BIOLOGY 1-3 credits
May be repeated. Prerequisite: permission. Special courses offered once or only occasionally in areas where no formal course exists.

697 BIOLOGY COLLOQUIUM 1 credit each
May be repeated. Prerequisite: permission. Attendance at all departmental seminars and presentation of seminar based on original research. Required of all thesis option students who shall present their thesis research.

699 MASTER'S THESIS 1-6 credits
May be repeated. A minimum of six credits is required for thesis option student.

701 RESEARCH TECHNIQUES IN INTEGRATED BIOLOGY 4 credits
Students will learn standard, common techniques that are applicable across broad areas of research in integrated biology.

702 COMMUNICATING IN INTEGRATED BIOLOGY 2 credits
Communication of biological topics to professionals of a broad audience. Students present topics in areas of expertise to other (non-discipline) students in the course.

703 PROBLEM SOLVING IN INTEGRATED BIOLOGY 3 credits
Prerequisite: 702. Students will learn how to study complex systems and get hands-on experience working in interdisciplinary teams.

793 INTEGRATED BIOLOGY COLLOQUIUM 1 credit
May be repeated. Prerequisite: permission. Seminar of original research from a wide range of biology-related disciplines.

899 DOCTORAL DISSERTATION 1-12 credits
Original research by the doctoral student.

BIOLOGY/NEOUCOM 3110:

630 HUMAN GROSS ANATOMY I 3 credits
Prerequisites: graduate standing and permission. An intensive survey of human macroanatomy.

631 HUMAN GROSS ANATOMY II 3 credits
Prerequisite: graduate standing and permission. An intensive survey of human macroanatomy.

695 SPECIAL TOPICS: BIOLOGY/NEOUCOM 1-6 credits
Prerequisite: permission of instructor. Advanced topics in medical education covering areas not otherwise available. May be repeated with a change in topic.

PUBLIC HEALTH 3115:

601 PUBLIC HEALTH CONCEPTS 3 credits
Prerequisite: Admission to the MPH program. Organizational structure, history, law, ethics, essential services, global problems, and future of public health.

602 SOCIAL AND BEHAVIORAL SCIENCES IN PUBLIC HEALTH 3 credits
Prerequisite: Admission to the MPH program. Theories of health education and promotion; interventions (communication, collaboration, and strategies); socio-cultural, diverse, and local issues as pertains to public health.

603 EPIDEMIOLOGY IN PUBLIC HEALTH 3 credits
Prerequisite: Admission to the MPH program. Epidemiological concepts, methods, and public health applications. Study of presentations to focus on special topics such as infectious diseases, chronic conditions, etc.

604 BIOSTATISTICS IN PUBLIC HEALTH 3 credits
Prerequisite: Admission to the MPH program. Biostatistics basics, statistical inference, central tendency tests, analysis of variance, regression analysis, survival analysis, and applications in public health. Epi Info and JMP statistical packages.

605 HEALTH SERVICES ADMINISTRATION IN PUBLIC HEALTH 3 credits
Prerequisite: Admission to the MPH program. Management principles, planning and evaluation, grant-writing, economics, policy, data sources, and applications to public health.

606 ENVIRONMENTAL HEALTH SCIENCES IN PUBLIC HEALTH 3 credits
Prerequisite: Admission to the MPH program. Air/water quality, food Hygiene, sanitation, solid waste management, hazardous materials management, vectorborne disease, occupational health, legal issues, environmental hazard identification and response.

608 PUBLIC HEALTH PRACTICE AND ISSUES 3 credits
Prerequisites: 601, 602, 603, 604, 605, 606 and 607, or permission. Community, communication, diversity, cultural proficiency, biology, and ethics are applied in a public health organizational practice setting. This is a required online practice-based course.

610 GRANT WRITING IN PUBLIC HEALTH PRACTICE 3 credits
Prerequisite: admission to the MPH Program. Methods and techniques for writing grant proposals to fund public health programs and operations.

680-689 SPECIAL TOPICS IN PUBLIC HEALTH 1-6 credits
Special topics sections will focus on specific topics of current interest in public health.

685 INDEPENDENT STUDY 1-3 credits
Prerequisite: permission of academic advisor and instructor. Research or other individual projects designed jointly by student and instructor. Covers topics not available in elective listing. (May only be taken for a maximum of 3 credits).

699 PRACTICUM 1-3 credits
Prerequisite: permission of faculty advisor and community preceptor. To work on a meaningful public health issue. For students who desire additional field experience. Credit/No credit.

697 CAPSTONE PROJECT 2-4 credits
A required culminating experience for MPH students to be taken after all core courses are completed. In partnership with a community organization/agency.

699 CAPSTONE PROJECT I 3 credits
Prerequisites: 601, 602, 603, and 604. In depth assessment of public health competencies preparation for culminating community experience in Capstone II.

699 CAPSTONE PROJECT II 3 credits
Prerequisites: 601, 602, 603, 604, 605, 606, and 689. A required culminating experience for MPH students completed in partnership with a community organization/agency.

CHEMISTRY 3150:

501 BIOCHEMISTRY I 3 credits
Prerequisite: Graduate status or permission of department. Biochemistry of amino acids, carboxylic acids, lipids, and nucleic acids: structure/function relations. Enzymes as catalysts: kineticis and regulation. Co-factors.

502 BIOCHEMISTRY II 3 credits
Prerequisite: 501. Graduate status or permission of department. Overview of metabolism, thermodynamics, fatty acid, amino acid, and nucleoside anabolism and catabolism; hormonal control of metabolism. Protein biosynthesis.

507 ADVANCED INORGANIC CHEMISTRY 3 credits
Prerequisite: Graduate status or permission of department. Concepts of atomic structure and periodic systematic classification of elements. Periodic table. Chemistry of the representative elements. Transition elements including coordination compounds, organometallics and metal carbonyls.

508 WORKSHOP IN CHEMISTRY 1-3 credits
May be repeated. Group studies of special topics in chemistry. May not be used to meet undergraduate or graduate major requirements in chemistry.

509 SPECIAL TOPICS: CHEMICAL EDUCATION 1-3 credits
May be repeated up to 6 credits. Consideration of topics in chemical education.

603 BIOCHEMISTRY LECTURE III 3 credits
Prerequisites: 601 and 602. Graduate status or permission of department. DNA, RNA and proteins. Metabolism. Translation and transcription. Gene function and expression.

610 BASIC QUANTUM CHEMISTRY 3 credits
Prerequisite: Graduate status or permission of department. Quantum mechanics with applications to molecular orbital theory.

611 SPECTROSCOPY 3 credits
Prerequisite: 600. Graduate status or permission of department. Introduction of light with matter, linear and nonlinear spectroscopies. Rotational, vibrational and electronic spectroscopy. Radiationless transitions and photochemistry.

618 TRANSITION-METAL ORGANOMETALLICS 3 credits
Prerequisite: Graduate status or permission of department. The organometallic chemistry of transition metal elements. Topics covered include synthesis, characterization methods, structure, bonding, reactivity, and applications.

620 MAIN GROUP ORGANOMETALLICS 3 credits
Prerequisite: Graduate status or permission of department. The organometallic chemistry of main group elements. Topics covered include synthesis, characterization methods, structure, bonding, reactivity, and applications.

625 CHEMISTRY SEMINAR 1 credit
Prerequisite: Graduate status or permission of department. Lectures on current research topics in chemistry by invited speakers.

629 PHYSICAL INORGANIC CHEMISTRY 3 credits
Prerequisites: Graduate status or permission of department. Detailed treatment of chemistry of transition elements. Group theoretical applications, ligand field theory, kinetics and mechanisms, magnetic, electronic spectra, molecular orbital theory.

630 THEORETICAL INORGANIC CHEMISTRY 2 credits
Prerequisites: 629, graduate status or permission of department. Detailed treatment of chemistry of transition elements. Group theoretical applications, ligand field theory, kinetics and mechanisms, electronic spectra, molecular orbital theory.

631 METALS IN MEDICINE 3 credits
Prerequisite: 572. Graduate status or permission of department. This course will cover the synthesis and development of metal based medicines including the tumor drug cisplatin, technetium 99m based imaging agents, and silver antimicrobials.

635 THERMODYNAMICS AND STATISTICAL THERMODYNAMICS 3 credits
Prerequisite: Graduate status or permission of department. Rigorous treatment of laws of thermodynamics and their applications to selected chemical systems. Fundamentals of statistical thermodynamics and applications to systems in chemical equilibrium.

636 CHEMICAL KINETICS 3 credits
Prerequisite: 635. Graduate status or permission of department. Phenomenological kinetics, experimental methods of investigation and analysis of reaction systems. Theoretical treatments of reaction rates.

640 CHEMICAL SEPARATIONS 3 credits
Prerequisites: Graduate status or permission of department. General theory, instrumentation and application of methods of separation. Emphasis on modern chromatographic techniques and recent advances.

641 SPECTRAL METHODS 3 credits
Prerequisites: Graduate status or permission of department. Theory and application of instrumental measurements. Interpretation of data.
561 PRINCIPLES OF INTERNATIONAL ECONOMICS 3 credits
Prerequisites: Admission to the master's program in Economics or permission. International trade and foreign exchange, policies of free and controlled trade, international monetary problems.

575 DEVELOPMENT OF ECONOMIC THOUGHT 3 credits
Prerequisites: Admission to the master's program in Economics or permission. Evolution of economic theory and ideas of economists contemporary to conditions.

581 MONETARY AND BANKING POLICY 3 credits
Prerequisites: Admission to the master's program in Economics or permission. Control over current and credit, policies of central banks and governments, United States Treasury and Federal Reserve System.

587 URBAN ECONOMICS: THEORY AND POLICY 3 credits
Prerequisites: Admission to the master's program in Economics or permission. Analysis of urban issues from an economic perspective. Emphasis on urban growth, land-use patterns, housing, income distribution, poverty and urban fiscal policy.

591 WORKSHOP IN ECONOMICS 3 credits
(May be repeated Group studies of special topics in economics. May not be used to meet undergraduate or graduate major requirements in economics. May be used for elective credit only.

600 FOUNDATIONS OF ECONOMIC ANALYSIS 3 credits
Prerequisite: graduate standing. Determination of national income, employment and price level; aggregate consumption, investment and asset holding; decision problems faced by household and firm, Partial equilibrium and analysis of competition and monopoly and general-equilibrium analysis. May not be substituted for 602, 603, 609, or offered to the 30 graduate credits required for M.A. in economics.

602 MACROECONOMIC ANALYSIS I 3 credits
Prerequisite: Admission to the master's program in economics or permission of the department. Construction of static macroeconomic models. Analysis predominately in terms of comparative statics with only relatively brief mention of dynamic models.

606 ECONOMICS OF THE PUBLIC SECTOR 3 credits
Prerequisites: Admission to the master's program in economics or permission of the department. Examination of public sector economics emphasizes public revenues, public expenditures. Focus on the objectives of taxation, welfare aspects of the public sector, theory of public goods. Considers specific taxes, cost-benefit analysis, expenditures analysis, fiscal federalism.

610 FRAMEWORK OF ECONOMIC ANALYSIS 3 credits
Prerequisite: graduate standing. Development of theoretical and analytical framework for decision making. Discussion of applications of the framework to situations concerning demand, cost, supply, production, price, employment and wage.

611 MICROECONOMIC THEORY I 3 credits
Prerequisites: Admission to the master's program in economics or permission of the department. Modern theory of consumer behavior and of the firm. Determination of market prices. Optimization models, establishment of criteria for productive, allocative and distributive efficiency.

615 INDUSTRIAL ORGANIZATION 3 credits
Prerequisite: 611 or permission of instructor. Examines market, firm costs, and economic performance. Measurement and effects of monopoly power, industrial concentration and changes.

617 THE ECONOMICS OF REGULATION 3 credits
Prerequisite: 615 or permission of instructor. Examines rationale, methods and success of government regulation of public utility, transportation and communications industries.

620 APPLICATIONS OF MATHEMATICAL MODELS TO ECONOMICS 3 credits
Prerequisites: Admission to the master's program in economics or permission of the department. Review of selected topics of differential and integral calculus and their application to economic analysis. Theory of optimization in production and consumption; static macroeconometric models. Analysis of growth and stability.

621 APPLICATION OF LINEAR MODELS IN ECONOMIC ANALYSIS 3 credits
Prerequisites: Admission to the master's program in economics or permission of the department. Review of statistical models and their application to research in economics. Emphasis on estimation and hypothesis testing as a prelude to econometrics.

626 STATISTICS FOR ECONOMETRICIANS 3 credits
Prerequisites: Admission to the master's program in economics or permission of the department. Review of statistical theory and its application to research in economics. Emphasis is on estimation and hypothesis testing as a prelude to econometrics.

627 ECONOMETRICS 3 credits
Prerequisite: 626 or equivalent. Functional and multivariate regression: Application of statistical analysis for making inferences and constructing econometric models and methods of estimation.

628 SEMINAR IN RESEARCH METHODS 3 credits
Prerequisite: Admission to the master's program in economics or permission of the department. A seminar in the research use of applied mathematical economics or econometrics. Emphasis is on the individual development of a theoretical proposition or research statement, its empirical evaluation and policy implications.

633 THEORY OF WAGES AND EMPLOYMENT 3 credits
Prerequisites: Admission to the master's program in economics or permission of the department. Analytical approach to integration of economic theory with observed labor market phenomena. Discussion of wage and employment theories, effects of unions, collective bargaining, labor unions and their effect on government regulation.

640 SPECIAL TOPICS IN ECONOMICS 3 credits
Prerequisite: Admission to the master's program in economics or permission of the department. A seminar in the research use of applied mathematical economics or econometrics. Emphasis is on the individual development of a theoretical proposition or research statement, its empirical evaluation and policy implications.

664 SEMINAR ON ECONOMIC GROWTH AND DEVELOPMENT 3 credits
Prerequisite: Admission to the master's program in economics or permission of the department. Reviewed main theories of economic growth since age of classical economics. Problems in the development of emerging countries. Discussion of aggregate macroeconomic models of capital formation, investment, growth and development.

665 SEMINAR ON REGIONAL ECONOMIC ANALYSIS AND DEVELOPMENT 3 credits
Prerequisite: Admission to the master's program in economics or permission of the department. A seminar in the development of a particular national or international regional development. Any one or any combination of following regions may be considered: Middle East, North Africa, areas within Latin America, Western Europe, Southeast Asia, or Eastern Europe.

670 INTERNATIONAL MONETARY ECONOMICS 3 credits
Prerequisite: Admission to the master's program in economics or permission of the department. International financial relations, foreign exchange market and exchange rate adjustment, Balance of payments adjustment policies, International monetary system.

671 INTERNATIONAL TRADE 3 credits
Prerequisite: Admission to the master's program in economics or permission of the department. Recent developments in trade theory, policy implications in trade relations among developed and developing economies.

683 MONETARY ECONOMICS 3 credits
Prerequisite: Admission to the master's program in economics or permission of the department. Intensive study of the major areas of monetary theory. Emphasis on integration of money and value theory among other areas, plus some pressing policy issues.

695 GRADUATE INTERNSHIP IN ECONOMICS 1-3 credits
Prerequisites: Eighteen credit hours of economics graduate courses. Career application of student's graduate coursework in favor of future work on research, reports and assignments required. May be repeated for a maximum of three credits.

697 READING IN ADVANCED ECONOMICS 1-6 credits
Prerequisites: Admission to the master's program in economics or permission of the department. (A maximum of six credits may be applied toward the master's degree in economics.) Independent investigation of selected areas, or conferences and seminars of instruction. Since the subject matter is decided upon in each case, the course may be taken repeatedly for credit.

699 MASTER'S THESIS 3 credits
(May be repeated for a total of six credits)

ENGLISH 3300:

500 ANGLO SAXON 3 credits
Studies in Old English language and Old English prose and poetry, including Beowulf.

503 DEVELOPMENT OF THE ARTHURIAN LEGEND 3 credits
Traces evolution of Arthurian materials from 540 to 500 and beyond, with emphasis on characters, themes, events and treatments.

504 CHAUCER 3 credits
Close study of Chaucer’s major works – The Canterbury Tales and Troilus and Criseyde in Middle English.

507 MIDDLE ENGLISH LITERATURE 3 credits
Study of genres, topics, styles and writers of the Middle English literary works from 12th to 15th centuries. Readings in Middle English.

521 SWIFT AND POPE 3 credits
Representative study of the major satirists of Swift and Pope. Concentration on the satirical strategies of each author within the context of the shifting intellectual and cultural milieu at the end of the 17th and beginning of the 18th Centuries.

524 EARLY ENGLISH FICTION 3 credits

535 VICTORIAN POETRY AND PROSE 3 credits
Poetry and prose of the late 19th Century, excluding fiction, with attention to Tennyson, Browning, Arnold, Carlyle, Ruskin and other major writers.

531 VICTORIAN FICTION 3 credits
Reading major novels of Victorian era, of varying length, by Emily Bronte, Dickens, Eliot, Trollope, and Hardy. Characterization, theme, and attitude toward life emphasized.

535 20TH CENTURY BRITISH POETRY 3 credits
Concentrated study of major poets of Yeats, Eliot, and Auden with attention also to Hardy, Housman, Spencer, C. Day Lewis, Dylan Thomas and others.

536 BRITISH FICTION: 1900-1925 3 credits
Study of Conrad, Joyce, D.H. Lawrence, and Virginia Woolf with attention to their innovations in narrative and style, their psychological realism and symbolism.

537 BRITISH FICTION SINCE 1925 3 credits
Study of important British novelists since 1925, including Lawrence, Joyce, and Woolf. Attention to development of British short story from 1925 to present.

548 AMERICAN ROMANTIC FICTION 3 credits
Examination of early American fiction, tracing its genesis, romantic period and germinal movements toward realism. Writers discussed include Cooper, Poe, Hawthorne, and Melville.

549 AMERICAN FICTION: REALISM AND NATURALISM 3 credits
Examination of American writers of realistic and naturalistic fiction (e.g. Howells, James, Crane, Dreiser), tracing developments in American fiction against background of cultural and historical change.

550 MODERN AMERICAN FICTION 3 credits
Study of significant American short and long fiction from World War I to the present.

553 AMERICAN WOMEN POETS 3 credits
Study of modern poets' uses and revisions of tradition, women's relationships, concepts of art and of the artist-as-woman, and the debate between "public" and "private" poetry.

556 THORAEU, EMERSON, AND THEIR CIRCLE 3 credits
A study of work and life of Henry David Thoreau, Ralph Waldo Emerson, and other key figures of the American Renaissance.

560 FILM AND LITERATURE 3 credits
Analysis of literary texts and their film adaptations. Emphasis on genre, structure, and visual elements as counterparts to written texts.

567 MODERN EUROPEAN FICTION 3 credits
Representative European writers from about 1850 to present, in translation. Focus on fiction of such writers as Zola, Tolstoy, Dostoyevsky, Mann, Proust, Kafka and Salzheintz.

568 INTERNATIONAL POETRY 3 credits
This survey of world poetry focuses on the stylistic concerns and social consequences of literature from Latin America, Asia, Africa, and Europe, beyond.

569 EROS AND LOVE IN EARLY WESTERN LITERATURE 3 credits
An analysis of sex and love in the western literature from Greco-Roman times to 1800. Employs allegorical, satirc, fantastic or realistic uses of sexuality and "romantic" love.

570 HISTORY OF ENGLISH LANGUAGE 3 credits
Development of English language, from its beginnings: sources of its vocabulary, its sounds, its rules; semantic change, political and social influences on changes; dialects; uninflected.

571 U.S. DIALECTS: BLACK AND WHITE 3 credits
Study of the distinctive features of the African American dialects and of variations of English from the South, the Northeast, the Midwest, and the North Central states.

572 SYNTAX 3 credits
Principles of syntactic description. Sentence structures are investigated from a variety of languages, with emphasis on English.

573 SEMINAR IN TEACHING ESL: THEORY AND METHOD 3 credits
Theoretical issues in linguistic description and language acquisition as relevant to learning of a second language. Elaboration of principles for the teaching of English as a second language based on research in linguistics, psycholinguistics and second language pedagogy.
574 AFRICAN AMERICAN ENGLISH 3 credits

575 THEORY OF RHETORIC 3 credits
Ancient and modern theories of rhetoric, with attention to classical oration, "topics" of rhetoric and their application to teaching of English.

579 MANAGEMENT REPORTS 3 credits
Study of principles and writing in effective business style, specialized structure, and purpose for business reports.

585 SCIENCE FICTION 3 credits
A study of twentieth-century British and American science fiction, featuring primary forms of the science fiction story and the work of major authors.

589 SEMINAR IN ENGLISH 2-3 credits (May be repeated with different topics.) Special studies, and methods of literary research, in selected areas of English and American literature and language.

590 WORKSHOP IN ENGLISH 1-3 credits (May be repeated with different topics.) Group studies of special topics in English. Cannot be used to meet undergraduate or graduate major requirements in English; for elective credit only.

592 INTERNSHIP IN ENGLISH 1-3 credits
Prerequisite: permission of instructor. Graduate internship, including analytical reading and writing focused on liberal arts and career applications of the study of English. May count up to three credits.

600 TEACHING COLLEGE COMPOSITION PRACTICUM 3 credits
Prerequisite: teaching assistantship, preparation, and weekly analysis of teaching rationale and practice, limited to teaching assistants in the Department of English. (Credits may not be used to meet M.A. in English degree requirements.)

615 SHAKESPEAREAN DRAMA 3 credits
Concentrated study of several Shakespearean plays with emphasis on historical, critical and dramatic documents pertinent to development of Shakespeare's art.

616 SHAKESPEARE'S CONTEMPORARIES IN ENGLISH DRAMA 3 credits
Plays in such playwrights as Pope, Dryden, Congreve, Lanyon, Booth, Beaumont, Fletcher, Webster, Middleton and Ford and in contemporary writings relevant to theory and practice of drama.

618 MILTON 3 credits
Books on Milton's major poems and prose works: Paradise Lost, Paradise Regained, Areopagitica. Student becomes acquainted with Milton the man and Milton the artist.

643 SEVENTEENTH-CENTURY ENGLISH LITERATURE 3 credits
A study of the literature of seventeenth-century British authors, including Donne, Jonson, Marvell, Milton, Bacon and Bunyan, and their canonical positions, their craft and their literary criticism.

620 AUTOBIOGRAPHY AS LITERATURE 3 credits
This course examines the genre of autobiography and memoir. A wide representation of autobiographies will be the focus of discussion and analysis.

625 AUTOBIOGRAPHICAL WRITING 3 credits
Using a workshop format, this course examines autobiographical essays written by class members. Attention will also be given to the art and craft of writing autobiography.

627 KEATS AND HIS CONTEMPORARIES 3 credits
Writings of John Keats, studied against background of romantic poetic theory and poetry of Keats' contemporaries.

630 LITERATURE OF THE 1930s 3 credits
A study of 1930s American literature in its social context, using recent critical theory to examine relationships between history and literature.

643 SEMINAR IN JAMES 3 credits
A study of Henry James' life and works. Primary emphasis will be on James' fiction, both long and short, early and late, but some attention will also be given to his literary criticism, travel pieces and plays.

645 POE AND HAWTHORNE 3 credits
Substantial readings from each author: tales, novels, essays, letters, poetry. Also, representative literacy criticism about each author.

646 WHITMAN AND DICKINSON 3 credits
Students study the work of Walt Whitman, Emily Dickinson, and the appropriate recent scholarly analyses. Students conduct, write about, and present their own scholarly research.

650 THE NEW RHEtorICS 3 credits
This seminar examines the impact of rhetorical theory on the study and teaching of writing. We will study works from classical, modern, and postmodern rhetoricians.

651 THE PRAGMATISTS 3 credits
This seminar examines the pragmatic roots of composition studies - the "tactic tradition," including classical expressivism, and criticisms of that movement.

660 CULTURAL STUDIES: THEORY AND PRACTICE 3 credits
This course explores the relationship between Cultural Studies and English Studies, examining the impact of Cultural Studies on the practice of textual analysis.

665 LITERARY CRITICISM 3 credits
Inquiry into nature and value of literature and problems of practical criticism as represented in major statements of ancient and modern critics.

670 MODERN LINGUISTICS 3 credits
Incorporation examination of methods and results of modern grammatical research in syntax, semantics, phonology and dialects. Goals include understanding of language variation and background preparation for linguistic studies of literature.

673 THEORIES OF COMPOSITION 3 credits
Study of composition theories and research, with attention to their implications for writing and writing instruction. Particular focus on such topics as composing processes, invention, form, style, modes of writing, language varieties and evaluation of writing. Class sessions include discussion of readings and presentations.

674 PRAGMATIC METHODS IN COMPOSITION 3 credits
Research methodologies in composition and their application. Students will define research areas, summarize and evaluate work already done, and propose and complete semester research projects.

675 WRITING FOR MBAs 3 credits
Emphasizes managerial writing. Writing tasks are presented as decision-making tools, and students develop strategies for messages to subordinate, analytical reports and messages to outside audiences.

676 THEORY AND TEACHING OF BASIC COMPOSITION 3 credits
Review of current research and exploration of specific instructional methods for teaching basic composition.

677 SCIENCE WRITING 3 credits
Study of principles and writing practice for effective communication in the physical or social sciences, including purpose, audience, specialized document structure, and oral presentations.

679 SCHOLARLY WRITING 3 credits
Study of composing, analyzing and evaluating academic arguments. Practice in specific forms of academic writing such as reviews of research, articles and book reviews.

683 SEMINAR IN SATIRE 3 credits
A study of satire from the middle ages through the late 20th Century, with particular attention to techniques of satiric attack, modes of comedy and irony and literary criticism.

689 SEMINAR IN ENGLISH 2-3 credits (May be repeated with change of topics) Special topics within the general field of literature and language, usually focusing on major figures or themes.

698 INDIVIDUAL READING IN ENGLISH 1-3 credits
Individual study under guidance of professor who directs and coordinates student's reading and research.

699 MASTER'S THESIS 16 credits
Original work in the field of literature and language and completion of graduate student's required thesis.

690 GEOGRAPHY AND PLANNING 3350:

505 GEOGRAPHIC INFORMATION SYSTEMS 3 credits
Introduction to the principles and concepts underlying geographic information systems (GIS) and their application in professional practice and academic research. Laboratory.

507 ADVANCED GEOGRAPHIC INFORMATION SYSTEMS 3 credits
Prerequisite: 505 or permission. Advanced instruction in the theory and application of geographic information systems (GIS) including hands-on experience with both raster and vector datasets. Laboratory.

509 ARCHAEOGEOPHYSICAL SURVEY 3 credits
Prerequisite: Permission. Advanced instruction in subsurface geophysical survey techniques in archaeology. Emphasis on magnetic gradiometry and electrical resistivity techniques, image processing and geological and archaeological interpretation.

515 ENVIRONMENTAL PLANNING 3 credits
Scientific and technical principles for decision-making in planning, with emphasis on soils, land use, and water quality issues. Data sources and methods of site evaluation.

520 URBAN GEOGRAPHY 3 credits
Spatial structure of urban systems; interaction between cities; internal structure of cities. Perspectives on urban change; contemporary urban geographic problems; urban and regional planning issues.

522 TRANSPORTATION SYSTEMS PLANNING 3 credits
Study and analysis of transportation systems from a geographic perspective. Emphasis on transportation problems and issues, elements of transportation planning.

524 MILITARY GEOGRAPHY 3 credits
Influence of physical and human geography on military operations and military history. Role played by geography in international conflicts.

528 LAND USE PLANNING LAW 3 credits
Acquaint student with past and present approaches to land use control in the United States and examine the political, economic, social and legal forces which have shaped existing land-use legislation.

533 PRACTICAL APPROACHES TO PLANNING 3 credits
Role of geographic investigation in city, regional and resource planning.

537 PLANNING ANALYSIS AND PROJECTION METHODS 3 credits
Introduction to the primary analytic techniques for small-area demographic and economic analysis and projection.

538 LAND USE PLANNING METHODS 3 credits
Application of GIS and other computer-based tools to the preparation, implementation and evaluation of comprehensive land use plans.

539 HISTORY OF URBAN DESIGN AND PLANNING 3 credits
Origins of human settlements and planning from the perspective of urban design and related societal trends. Comparison of world regional and historical urban forms. Experience in "reading" settlements as visual landscapes.

540 CARTOGRAPHY 3 credits
Theoretical and practical applications of cartographic principles used to design and produce maps for research reports, public presentations, publication, and other professional uses.

541 GLOBAL POSITIONING SYSTEMS (GPS) 3 credits
Fundamentals of Global Positioning Systems (GPS), with emphasis on geographic and planning activities. Includes hands-on exercises.

542 CARTOGRAPHIC THEORY AND DESIGN 3 credits
Prerequisite: 540 or permission. Principles and techniques of thematic mapping. Stresses maps as communication tools. Examines principal thematic mapping techniques and means of presenting quantitative and qualitative data. Laboratory.

543 URBAN APPLICATIONS IN GIS 3 credits
Prerequisite: 540 or permission. Applications of GIS in the urban context, including methods used for analysis of population density gradients, migration, and accessibility.

544 APPLICATIONS IN CARTOGRAPHY AND GEOGRAPHIC INFORMATION SYSTEMS 3 credits
Prerequisite: 540, 541, or permission. Application of analytic and presentation techniques from cartography and geographic information systems to practical problems in geography and planning. Laboratory.

545 GIS DATABASE DESIGN 3 credits
Prerequisite: 505 or permission. Introduction to theory and concepts of geographic data modeling, geodatabase design, and topology. Emphasis on current practices and methodologies in geography and planning.

546 GIS PROGRAMMING AND CUSTOMIZATION 3 credits
Prerequisites: 505 or permission. Introduction to use of scripting languages for customizing the interface and extending the functionality of desktop GIS software.

547 REMOTE SENSING 3 credits
Concepts, systems, and methods of applying aerial photography, satellite imagery, and other remote-sensing data for analyzing geographic, geological, and other earth phenomena. Laboratory.

549 ADVANCED REMOTE SENSING 3 credits
Prerequisite: 547 or permission. In-depth study in current research in remote sensing. Applications in study of human cultural and biophysical environment. Practice in planning, design, execution and interpretation of remote sensing studies. Laboratory.
550 DEVELOPMENT PLANNING 3 credits
A study of planning concepts and techniques for developing countries, including growth and development planning, planning agencies, regional inequities and alternative approaches.

560 POLITICAL GEOGRAPHY 3 credits
Principles and theory in contemporary domestic and international political geographies. Emphasis on the changing local and global patterns of electoral politics, security, and diplomacy.

581 RESEARCH METHODS IN GEOGRAPHY AND PLANNING 3 credits
Investigation of library and archive resources. Emphasis on development of professional writing skills.

583 SPATIAL ANALYSIS 3 credits
Analysis of mapped statistical surfaces. Principles for use of map as model for statistical evidence, prediction, hypothesis testing.

589 SPECIAL TOPICS IN GEOGRAPHY 3 credits
(May be repeated) Selected topics of interest in geography.

590 WORKSHOP IN GEOGRAPHY 3 credits
(May be repeated for a total of six credits) Group studies of special topics in geography.

595 SOIL AND WATER FIELD STUDIES 2 credits
Properties, origins and uses of major soil and water regime landscapes. Stresses relationships between soil and the hydrological cycle, urbanization, suburbanization and agriculture. Field trips required.

596 FIELD RESEARCH METHODS 3 credits
Field work enabling student to become competent in collecting, organizing and analysis of data while carrying out field research projects. Field trips required.

597 REGIONAL FIELD STUDIES 1-3 credits
Off-campus intensive study of geographic features of a region or regions through direct observations and travel using appropriate field study methods. (Repeatable up to six credits.)

600 SEMINAR 3 credits
(May be repeated for a maximum of six credits each) Prerequisite: permission. Investigation and analysis of selected topics in particular fields of geography. Specialization indicated by second portion of title.

630 PLANNING THEORY 3 credits
Introduction to the political, institutional and ethical foundations and procedural theories of urban and regional planning.

631 FACILITIES PLANNING 3 credits
Study of need, process and limitation of urban facilities planning.

633 COMPARATIVE PLANNING 3 credits
A survey of national, regional and local planning implementation measures in use in the developed world. Particular attention will be given to the planning experiences of European nations and their impact on American planning theory and practice.

680 ADVANCED SPATIAL ANALYSIS 3 credits
Prerequisite: 683 or permission. Advanced concepts and methodologies in geographic research. Emphasis on quantitative revolution in geographical analysis, including multivariate procedures as factor, discriminant and econometric analysis, and multidimensional scaling.

685 PLANNING INTERNSHIP 3 credits
Prerequisite: permission. Individual experience in selected planning agencies for supervised performance in professional planning work. (May be repeated but only 3 credits may be applied to total credit hours needed for degree requirements.) Credit/Non-Credit.

697 HISTORY OF GEOGRAPHIC THOUGHT 2 credits
Critical review of major developments in geographic concepts from ancient times to the present.

695 GRADUATE COLLOQUIUM 1 credit
May be repeated for a maximum of four credits.) Lecture series on topics of interest in geography and planning, by academic and non-academic professionals for both faculty and students. Does not satisfy degree requirements. Credit/Non-Credit.

699 INDIVIDUAL READING AND RESEARCH 1-3 credits
(May be repeated for a total of six credits) Prerequisite: permission of instructor. Intensive investigation of selected topics under guidance of faculty member.

797 PHD RESEARCH 1-6 credits
Independent research and original work toward a thesis.

GEOLOGY

3370:

505 ARCHAEOLOGICAL GEOLOGY 3 credits (includes lab)
Prerequisite: Admission to the Geology major's program or permission. Provides background in geologic principles and techniques relevant to archaeologists. Topics include stratigraphy, absolute dating, locality assessment, zooarchaeology, taphonomy, and remote sensing. Required lab and field trips.

507 ARCHAEOGEOPHYSICAL SURVEY 3 credits
Prerequisite: Admission to the Geology major's program or permission. Advanced instruction in subsurface geophysical survey techniques in archaeology. Emphasis on magnetic gravity and electrical resistivity techniques, image processing and geological and archaeologic interpretation.

510 REGIONAL GEOLOGY OF NORTH AMERICA 2 credits
Prerequisite: Admission to the Geology major's program or permission. Examination of physiographic provinces of North America emphasizing structure, tectonic setting, stratigraphy and processes responsible for landforms in each province. Laboratory. Field trips.

511 GLACIAL GEOLOGY 3 credits
Prerequisite: Admission to the Geology major's program or permission. Causes and effects of Pleistocene expansion of polar ice masses with emphasis on glacial deposits and world climate changes. Field trips.

512 COASTAL GEOLOGY 3 credits
Prerequisite: Admission to the Geology major's program or permission. Study of the origins and evolution of coastal and estuarine deposits with particular attention paid to the interaction of waves and currents with sediment, and the development of associated sedimentary features. Field trips.

515 PRINCIPLES OF SEDIMENTARY BASIN ANALYSIS 3 credits
Prerequisite: Admission to the Geology major's program or permission. Primary study of depositional systems, regional and global stratigraphic cycles, and sedimentation and plate tectonics.

516 OPTICAL MINERALOGY-INTRADOTRHYOLITROGEOLOGY 3 credits
Prerequisite: Admission to the Geology major's program or permission. Optical techniques for identification, characterization, and classification of minerals and rocks using the petrography microscope. Laboratory.

533 ADVANCED PETROGRAPHY 3 credits
Prerequisite: 532. Petrogenesis of igneous, metamorphic and sedimentary rocks as determined by microscopic studies of textures and mineral assemblages using thin section. Laboratory.

535 PETROLEUM GEOLOGY 3 credits
Prerequisite: Admission to the Geology major's program or permission. Natural occurrences of petroleum. Characteristics, origin, emplacement and exploration methods. Laboratory. Field trips.

536 COAL GEOLOGY 3 credits
Prerequisites: Admission to the Geology major's program or permission. Origin, composition and occurrence of coal vitrinite in depositional environments, coalification processes, exploration, evaluation and exploration. Laboratory. Field trips.

537 ECONOMIC GEOLOGY 3 credits
Prerequisites: Admission to the Geology major's program or permission. Study of metallic and nonmetallic mineral deposits emphasizing paragenesis and exploration. Laboratory. Field trips.

541 FUNDAMENTALS OF GEOPHYSICS 3 credits
Prerequisites: Admission to the Geology major's program or permission. Fundamental concepts in solid earth geophysics, planetary geophysics, geoid and geomagnetism. Contributions of geophysics to recent major developments in geoscience.

544 ENVIRONMENTAL MAGNETISM 3 credits
Prerequisites: Admission to the Geology major's program or permission. Introduction to the theory and methods of environmental magnetics and the application of environmental magnetics to interpreting sedimentary deposits.

545 ENVIRONMENTAL AND ENGINEERING GEOPHYSICS 3 credits
Advanced subsurface exploration using ground penetrating radar and multi-channel electrical resistivity. Applications in environmental assessment, civil engineering, and geotechnical engineering. Field trips.

546 EXPLORATION GEOPHYSICS 3 credits
Prerequisites: Admission to the Geology major's program or permission. Basic principles and techniques of geophysical exploration with emphasis on gravimetric, magnetic, seismic and electrical methods and application to geological problems. Laboratory. Field trips.

550 ADVANCED STRUCTURAL GEOLOGY 3 credits
Prerequisite: Admission to the Geology major's program or permission. Fundamental and advanced concepts of structural geology with emphasis on current and developing concepts. Laboratory. Field trips.

551 FIELD/LAB STUDIES IN ENVIRONMENTAL SCIENCE 3 credits
Prerequisite: Permission of instructor. Field trip course emphasizing aspects of geology readily studied in Ohio. Includes pre-trip preparation and post-trip examination. Student will bear trip expenses. (May be repeated for up to four credits)

552 MACROEVOLUTION 3 credits
Prerequisite: Admission to the Geology major's program or permission. Provides a comprehensive treatment of macroevolutionary theory, focusing on evidence from the fossil record. Topics include genetics, speciation, development, and fossil-lineages. Laboratory.

553 ENVIRONMENTAL MICROPALAEONTOLOGY 3 credits
Prerequisite: Admission to the Geology major's program or permission. Introduction to techniques of micropaleontology as proxy indicators for environmental and climate change. Laboratory.

554 GEOECOLOGY 3 credits
Prerequisite: Graduate standing. A course addressing the physiology, ecology, and activities of microorganisms that mediate important biogeochemical processes, and the interdisciplinary approaches to studying them.

560 GEOCHEMISTRY 3 credits
Prerequisite: Admission to the Geology major's program or permission. Application of chemical principles to the study of geologic processes. Laboratory. Field trips.

561 STABLE ISOTOPE GEOCHEMISTRY 3 credits
Prerequisite: Admission to the Geology major's program or permission. Application of stable isotope geochemistry to the study of the hydrologic and carbon cycles, modern sedimentary environments, and the interpretation of sedimentary rocks.

570 GEOCHEMISTRY 3 credits
Prerequisite: Admission to the Geology major's program or permission. Fundamental and advanced concepts in geochemistry, with emphasis on the study of chemical principles of rock and mineral systems, and geologic processes. Laboratory.

572 STABLE ISOTOPE GEOCHEMISTRY 3 credits
Prerequisite: Admission to the Geology major's program or permission. Fundamental and advanced concepts in geochemistry, with emphasis on the study of chemical principles of rock and mineral systems, and geologic processes. Laboratory.

574 GROUNDWATER HYDROLOGY 3 credits
Prerequisite: Admission to the Geology major's program or permission. Origin, occurrence, regimen and utilization of groundwater. Qualitative and quantitative presentation of geological and geochemical aspects of groundwater hydrology. Laboratory. Field trips.

580 SEMINAR IN ENVIRONMENTAL STUDIES 2 credits
May be repeated for a maximum of six credits) Prerequisite: Graduate status. Discussion of specific environmental topics from an interdisciplinary viewpoint; resource persons are drawn from the University and surrounding community.

581 ANALYTICAL METHODS IN GEOLOGY 2 credits
Prerequisite: Admission to the Geology major's program or permission. A survey of analytical methods used to solve geologic problems with emphasis on method selection, proper sample collection, analysis, data quality and data presentation.

583 USE OF MINERAL GEOCHEMISTRY IN ANALYSIS OF ROCKS 2 credits
Prerequisite: Admission to the Geology major's program or permission. Use and application of techniques of mineral geochemistry in the analysis of rocks.

584 GEOSCIENCE INFORMATION ACQUISITION AND MANAGEMENT 2 credits
Prerequisite: must be a Geology Department graduate student or senior major in geology, or have written permission of instructor. Methods for finding, gathering, managing, and evaluating geoscience data. Emphasis on data quality and data presentation.

585 INTEGRATING GEOLOGICAL AND ENVIRONMENTAL SCIENCE 2 credits
Prerequisite: Permission of instructor. Field trip course emphasizing aspects of geology readily studied in Ohio. Includes pre-trip preparation and post-trip examination. Student will bear trip expenses. (May be repeated for up to four credits)

587 ANTHROPOGEOLOGY 3 credits
Prerequisite: Admission to the Geology major's program or permission. Fundamental and advanced concepts of environmental anthropology, with emphasis on current and developing concepts. Laboratory. Field trips.

589 ENVIRONMENTAL EARTH SCIENCE 2 credits
Prerequisite: Admission to the Geology major's program or permission. Focus on environmental science topics. Laboratory. Field trips.

590 WORKSHOP IN GEOLOGY AND ENVIRONMENTAL SCIENCE 1-3 credits
May be repeated Group studies of special topics in geology and environmental science. May not be used to meet graduate degree requirements in the department. May be used for elective credit only.

591 GRADUATE INTERNSHIP IN GEOLOGY AND ENVIRONMENTAL SCIENCE 1-3 credits
May be repeated for a maximum of six credits) Prerequisite: Permission of department chair. Supervised professional experience in geology or geophysics. May only apply three credits toward minimum graduate requirements in Geology and Environmental Science).
540 TUDOR AND STUART BRITAIN, 1485-1714
An examination of the development of, and increasing links between the British kingdoms in an early-modern context, with emphasis on culture, politics, and religion.

543 CHURCHILL'S ENGLAND
An examination of the changes that Britain experienced during the life of Winston Churchill, 1874-1965. Emphasis is on cultural, social, and political developments.

551 COLONIAL AMERICAN HISTORY
This course covers the history of Colonial America from the first European contact in the Americas in 1492 to the onset of the American Revolution.

552 THE AMERICAN REVOLUTIONARY ERA: POLITICAL, MILITARY, AND CONSTITUTIONAL ASPECTS
The struggle for the rights of Englishmen and independence; the impact of war on American society, and the creation of republican institutions.

553 THE EARLY AMERICAN REPUBLIC
Prerequisite: Graduate student status. The evolution of the American republic from its early beginnings after the American Revolution to the antebellum era. Emphasis upon political, social, and cultural developments.

554 THE CIVIL WAR AND RECONSTRUCTION, 1850-1877
Sectionalism, slavery and the causes of the Civil War; wartime activities of the Union and Confederacy; leading personalities; problems of reconstruction and the new union.

555 THE ORIGINS OF MODERN AMERICA, 1777-1917
United States from Reconstruction Era to World War I (1867-1920); emphasis on political responses to rise of an industrialized society, the populist and progressive movements.

556 AMERICA IN WORLD WARS AND DEPRESSION, 1917-1945
World War I and Versailles; the 1920s, the Great Depression and the New Deal; World War II.

557 THE UNITED STATES SINCE 1945
Nuclear age, cold war, foreign policy and domestic affairs to present. Social, political, constitutional, diplomatic, cultural and economic changes since 1945.

561 THE UNITED STATES AS A WORLD POWER
This course analyzes the emergence and functioning of the United States as a world power, with particular emphasis on the twentieth century.

563 U.S. CONSTITUTIONAL HISTORY SINCE 1870
This course will examine the rise and fall of constitutional government as well as civil liberties and individual rights from the Civil War to the present.

565 AMERICAN ECONOMY SINCE 1900
Survey of economic developments since 1800, topics include architecture, business and labor. Emphasis on economic growth and evolution of monetary and fiscal policy.

566 HISTORY OF AMERICAN POP CULTURE
Historical analysis of mass cultural phenomena and the social experiences associated with mass technologies that transformed modern American life in the nineteenth and twentieth centuries.

568 AFRICAN-AMERICAN SOCIAL AND INTELLECTUAL HISTORY
Examination of black thought and activities reflective of African-American culture, conditions facing black people within America and efforts toward coordinated black activity.

569 AFRICAN-AMERICAN WOMEN'S HISTORY
Study of black American women from colonial times to the present featuring autobiographical, fictional, and secondary works authored by black women.

570 OHIO HISTORY
Political, social, economic and intellectual history of Ohio, with special emphasis on Ohio's relationships to its North Central and Northeastern neighbors.

571 AMERICAN ENVIRONMENTAL HISTORY
Utilization, conservation of natural resources from beginnings of American society to present; combination of economic, technological history of extensive treatment of public policy, environmental issues.

575 MEXICO
History of Mexico from Indian civilizations to present with emphasis on relations with United States; social and political ramifications of the 20th Century Mexican revolution.

576 CENTRAL AMERICA AND THE CARIBBEAN
Selection of aspects of the histories of Central American and Caribbean countries with emphasis on populist and peasant movements, political reform, social revolution, economic and underdevelopment, and relations with the United States.

582 WAR AND WESTERN CIVILIZATION
War and society in Europe, Africa, and beyond from ancient world to present with special emphasis on period since 1940.

584 HISTORY MUSEUMS AND ARCHIVES
This course will focus on the work of history museums, historical societies and historic house museums, and archives.

585 HISTORY, COMMUNITIES, AND MEMORY
Courses examine the interactions between the work of academic historians and the public in areas such as local history, monuments, oral history, film, and the internet.

587 SCIENCE AND TECHNOLOGY IN WORLD HISTORY
Courses examine the interactions between the work of academic historians and the public in areas such as local history, monuments, oral history, film, and the internet.

589 OTTOMAN STATE AND SOCIETY
Courses examine the interactions between the work of academic historians and the public in areas such as local history, monuments, oral history, film, and the internet.

593 SPECIAL STUDIES: NORTH AMERICAN HISTORY
Prerequisite: Graduate student status. Special studies in the history of North America (Rio Grande to the Arctic). See departmental office for information on particular offerings.

594 WORKSHOP IN HISTORY
May be repeated for a total of six credits. (May be repeated) Group studies of special subjects pertaining to history. May be used for credit only. May not be used to meet undergraduate or graduate major requirements.

595 SPECIAL STUDIES: EUROPEAN HISTORY
Prerequisite: Graduate student status. Special studies in European history (from the fall of the Roman Empire to the present). See departmental office for information on particular offerings.

596 SPECIAL STUDIES IN HISTORY: OTHER
Prerequisite: Graduate student status. Special studies in history of Latin America, Asia, Africa, or the Pacific. See departmental office for information on particular offerings.

598 RACE, NATION, AND CLASS IN THE MIDDLE EAST
This course analyzes ideas and patterns of race, nation, and class in the Middle East from a historical perspective.
501 HISTORY OF MATHEMATICS
Prerequisite: Departmental permission. History and development of mathematical ideas. Credit does not count toward major requirements in the department. 3 credits

510 ADVANCED LINEAR ALGEBRA
Prerequisite: Departmental permission. Study of vector spaces, linear transformation, canonical and quadratic forms, inner product spaces. 3 credits

511 ABSTRACT ALGEBRA I
Prerequisite: Departmental permission. Study of groups, rings, fields, integral domains, vector spaces, field extensions, Galois theory. May be used to meet master’s degree requirements in the department. 3 credits

512 ABSTRACT ALGEBRA II
Prerequisite: 511 or departmental permission. Study of groups, rings, fields, integral domains, vector spaces, field extensions, Galois theory. May be used to meet master’s degree requirements in the department. 3 credits

513 THEORY OF NUMBERS
Prerequisite: Departmental permission. Euclidean algorithm, unique factorization theorem, congruences, primitive roots, quadratic residues, number-theoretic functions, Gaussian integers and continued fractions. 3 credits

515 COMBINATORICS AND GRAPH THEORY
Prerequisite: Departmental permission. Introduction to basic ideas and techniques of mathematical counting; properties of structures of systems. 3 credits

520 MATHEMATICAL TECHNOLOGY AND COMMUNICATION
Prerequisite: Departmental permission. Graphical, numerical, and algebraic computation with applications using a variety of mathematical hardware and software: symbolic manipulators, dynamic geometry software, programs, scripts and web browsers. 3 credits

521,2 ADVANCED CALCULUS I AND II
Prerequisite: Departmental permission. Real number system, sequences, series, set theory, continuity, differentiation, partial derivatives, multiple integration, maxima and minima, convergence and uniform convergence, power series, improper integrals, transformations, line and surface integrals. 3 credits each

527 APPLIED NUMERICAL METHODS I
Prerequisite: Departmental permission. Numerical methods in polynomial interpolation, root finding, numerical integration, and linear and non-linear algebras. May not be used to meet master’s degree requirements for applied mathematics. 3 credits

528 APPLIED NUMERICAL METHODS II
Prerequisite: Departmental permission. Numerical methods in the solution of ordinary and partial differential equations. Numerical differentiation, Runge-Kutta methods, and iterative methods for ODEs, finite differences for PDEs. 3 credits

531 PARTIAL DIFFERENTIAL EQUATIONS
Prerequisite: Departmental permission. The classical initial value and boundary value problems of mathematical physics developed and solved using Fourier series and integral transforms. 4 credits

535 SYSTEMS OF ORDINARY DIFFERENTIAL EQUATIONS
Prerequisite: Departmental permission. Analysis, solution of systems of equations, linear, non-linear. Topics: stability theory, perturbation methods, asymptotic methods, applications from physical, social sciences. 3 credits

536 MATHEMATICAL MODELS
Prerequisite: Departmental permission. Formulation and analysis of mathematical models in social and physical sciences. Analysis of deterministic and stochastic models. Topics may include stochastic processes, linear programming, graph theory, theory of measurement. 3 credits

538 ADVANCED ENGINEERING MATHEMATICS I
Prerequisite: Departmental permission. Matrices, eigenvalue problems, systems of ODEs, vector analysis, complex variables. May not be used to meet master’s degree requirements for applied mathematics. 4 credits

539 ADVANCED ENGINEERING MATHEMATICS II
Prerequisite: Departmental permission. Special functions, Fourier series and transforms, PDEs. 3 credits

541 CONCEPTS IN GEOMETRY
Prerequisite: Departmental permission. An overview of both Euclidean and non-Euclidean geometries. Other concepts included are finite geometry, transformations, constructions and invariances. 4 credits

545 INTRODUCTION TO TOPOLOGY
Prerequisite: Departmental permission. Introduction to topological spaces and topologies, mapping, cardinality, homeomorphisms, connected spaces, metric spaces. 3 credits

559 ADVANCED TOPICS IN MATHEMATICS
Prerequisite: May be repeated for a total of 12 credits. Prerequisite: Permission of instructor. Selected topics in mathematics and applied mathematics at an advanced level. 1-15 credits

561 WORKSHOP IN MATHEMATICS
Prerequisite: 559 or departmental permission. In-depth study of recent analysis – metric spaces, normed vector spaces, integration theory, Hilbert spaces. 3 credits

565 ANALYTIC FUNCTION THEORY
Prerequisite: 532 or departmental permission. Complex number system, holomorphic functions, continuity, differentiability, power series complex integration, residue theory, singularities, analytic continuation, asymptotic expansions. 3 credits

567 ADVANCED NUMERICAL ANALYSIS I
Prerequisites: 522 and knowledge of C++, FORTRAN, or MATLAB or departmental permission. Error propagation; theoretical analysis of numerical methods in interpolation, integration, and ordinary differential equations. 3 credits

568 ADVANCED NUMERICAL ANALYSIS II
Prerequisites: 522 and knowledge of C++, FORTRAN, or MATLAB or departmental permission. Theoretical analysis of numerical methods in linear algebra. 3 credits

571 CALCULUS OF VARIATIONS
Prerequisite: Departmental permission. Problems with fixed and movable endpoints, problems with constraints, generalization to several variables, the maximality principle, time-optimal problems, the connective between classical theory and the maximality principle. 3 credits

572 ADVANCED PARTIAL DIFFERENTIAL EQUATIONS
Prerequisite: 510 and departmental permission. Uniqueness and stability of solutions to general classes of partial differential equations. Methods for solving these classes introducing emphasis on analytical and numerical techniques. 3 credits

574 METHODS OF APPLIED MATHEMATICS I AND II
Prerequisite: 539 or departmental permission. Methods of applied mathematics concentrating on techniques for analysis of differential and integral equations – applied complex analysis, integral transforms, partial differential equations, and integral equations. 3 credits each

585 OPTIMIZATION
Prerequisite: 522 or departmental permission. Unconstrained and constrained optimization theory and methods in applied problems. 3 credits

586 ADVANCED COMBINATORICS AND GRAPH THEORY
Prerequisite: Departmental permission. Theory and techniques of combinatorics as applied to network problems and graph theory problems. 3 credits

588 THEORY AND APPLICATION OF WAVELETS
Prerequisite: Departmental permission. Theory of wavelets and applications to signal and image analysis. Topics include time-frequency representations, filter banks, discrete and continuous wavelet transforms, wavelet packets, and applications. 3 credits

589 ADVANCED TOPICS IN MATHEMATICS
May be repeated for a total of six credits. Prerequisite: permission of advisor. Seminar-type discussion on topics in mathematics leading to supervised research project. No more than 2 credits apply to major requirements. 1-9 credits
**SEMINAR IN MATHEMATICS**
Prerequisite: permission of advisor. Seminar-type discussion on topics in mathematics leading to suggestions for research.

**PRACTICUM IN MATHEMATICS**
(May be repeated) Prerequisite: graduate teaching assistant or permission. Training and experience in college teaching of mathematical sciences. May not be used to meet degree requirement. Credit/no credit.

**INDIVIDUAL READING**
(May be repeated for a total of four credits) Prerequisites: graduate standing and permission. Direct study in mathematics at graduate level under guidance of selected faculty. May not be used to meet master’s degree requirements for mathematics or applied mathematics.

**MASTER’S RESEARCH**
(May be repeated) Prerequisite: permission of advisor. Research in suitable topics in mathematics or applied mathematics culminating in a research paper. May not be used to meet master’s degree requirements for mathematics or applied mathematics.

**MASTER’S THESIS**
Prerequisite: permission of advisor. Properly qualified candidate for master’s degree may obtain 3 credits for research that culminates in a public oral presentation of the faculty-supervised thesis.

**FUNCTIONAL ANALYSIS I AND II**
3 credits each Prerequisites: 539, and 529 or departmental permission. Courses are sequenced. Study of normed linear spaces and transformations between them with an emphasis on the formulation and analysis of differential and integral equations as operator equations on these spaces.

**MATRIX ITERATIVE METHODS**
Prerequisite: Departmental permission. Basic iterative methods, Matrix Properties and Concepts, Linear and Nonlinear equation solver, Semi-iterative and conjugate-gradient methods.

**ADvanced Numerical Solution of Partial Differential Equations**
3 credits Prerequisites: 522 and 528, or 628, or departmental permission. Derivation, analysis, and implementation of difference and variational methods for the solution of partial differential equations and systems of differential equations.

**Advanced Partial Differential Equations II**
3 credits Prerequisites: 522 and 532 or departmental permission. Well-posedness of elliptic, hyperbolic, and parabolic problems, theoretical methods for Elliptic problems, Conservation Laws and numerical methods, potential theory and integral equations.

**Asymptotic Methods and Nonlinear Analysis I and II**
3 credits each Prerequisite: 623043 or equivalent. Survey of asymptotic and perturbation methods as applied to integrals and differential equations. Topics: bifurcation and stability with applications from the physical sciences and engineering.

**Dynamical Systems**
3 credits Prerequisite: 522 or departmental permission. The study of mathematical models of systems which evolve over time. An introduction to maps and applications to ordinary differential equations.

### COMPUTER SCIENCE

**Fundamentals of Data Structures**
Prerequisite: programming experience in C. Basic data structures and algorithms, stacks, queues, trees, lists, tree traversal, sorting and search algorithms. Introduction to data abstraction and algorithm analysis. (May not be used to meet computer science requirements.)

**Introduction to C and UNIX**
Prerequisite: Programming experience. C language programming, UNIX shell programming, file structure, system calls, and interprocess communication. (May not be used to meet computer science requirements.)

**Windows Programming**
Prerequisites: Admission to Computer Science master’s program or permission. Windows operating systems, event-driven environment, event-driven programming, graphical user interface design, using library objects, component object model, object linking and embedding, client-server architectures.

**Introduction to Discrete Structures**
Prerequisite: Admission to Computer Science master’s program or permission. Introduction to discrete structures commonly used in computer science. Topics include algorithms, Boolean algebra, flow chart language, graphs and digraphs, trees, lattices codes. (May not be used to meet computer science master’s degree requirements.)

**Object-Oriented Programming**
Prerequisite: Admission to Computer Science master’s program or permission. Object-oriented design, analysis, and programming using different development models. Comparison with other object-oriented programming paradigms.

**Operating Systems**
Prerequisites: Admission to Computer Science master’s program or permission. Introduction to and analysis of modern operating systems: types, storage management, process and resource control; interacting process synchronization. (May not be used to meet computer science master’s degree requirements.)

**UNIX System Programming**
Prerequisites: Admission to Computer Science master’s program or permission. An overview of the UNIX operating system. Shell programming, process management, processor management, storage management, scheduling algorithms, resource protection, and system programming.

**Theory of Programming Languages**
Prerequisite: Admission to Computer Science master’s program or permission. Advanced concepts underlying programming languages and their applications, formal definitions of programming languages, Böhm Jutting Normal Form, semantics. Alternative programming paradigms including functional programming. (May not be used to meet computer science master’s degree requirements.)

**Algorithms**
Prerequisites: Admission to Computer Science master’s program or permission. Design and analysis of efficient algorithms for random access machines; derivation of pattern classification algorithms.

**Compiler Design**
Prerequisites: Admission to Computer Science master’s program or permission. Techniques used in constructing compilers, including lexical and syntactic analysis, parsing techniques, object code generation and optimization. Course requires a compiler implementation project.

**Introduction to Bioinformatics**
Prerequisite: Admission to Computer Science master’s program or permission. Introduction to modern topics in bioinformatics. Topics include concepts of molecular biology, modeling and design, and bases, database searching, sequence alignment, phylogenetic trees, structure prediction, and microarray data analysis.

**Computer Security**
Prerequisites: Admission to Computer Science master’s program or permission. Principles of computer security: cryptography, authentications, secure network protocols, intrusion detection and countermeasures.

**Data Communications and Computer Networks**
Prerequisites: Admission to Computer Science master’s program or permission. ISO/OSI, TCP/IP, SNA data switching, protocols, flow and error control, routing, topology. Network design, trends in network technology, and socket-based programming.

**Computer Graphics**
Prerequisites: Admission to Computer Science master’s program or permission. Topics in vector and raster graphics, interaction and animation, clipping, geometric transformation, projection, shading, animation, and virtual reality.

**Artificial Intelligence and Heuristic Programming**
3 credits Prerequisite: Admission to Computer Science master’s program or permission. Study of computer programs which have displayed some intelligent behavior. Exploration of level at which computers can display intelligence.

**Pervasive Computing**
Prerequisite: Admission to Computer Science master’s program or permission. Computing from a wireless perspective. Topics include protocols, algorithms, security and sensor networks.

**Computer Architecture**
Prerequisites: Admission to Computer Science master’s program or permission. An introduction to the hardware organization of the computer at the register, processor and systems levels. An in-depth study of the architecture of a particular computer. (May not be used to meet computer science master’s degree requirements)

**Mobile Robotics**
Prerequisite: Admission to Computer Science master’s program or permission. Introduction to history, hardware and software components, and design of autonomous mobile robots. Projects include projects involving physical robots and software emulation.

**Database Management**
Prerequisite: Admission to Computer Science master’s program or permission. Fundamentals of database organization, data manipulations and representation, data integrity, privacy.

**Introduction to Parallel Processing**
3 credits Prerequisites: Admission to Computer Science master’s program or permission. Commercial processors: past and present. Parallel languages, models of parallel computation. Emphasis on parallel algorithm design and performance evaluation. A broad study of parallel paradigms with relation to real world applications.

**Software Engineering**
3 credits Prerequisite: Admission to Computer Science master’s program or permission. Introduction to formal software specification and validation. Introduction of methodologies and tools of design, development, validation, and maintenance.

**Topics in Computer Science**
3 credits (May be repeated) Prerequisite: permission of instructor. Selected topics in computer science at an advanced level.

**Individual Study in Computer Science**
3 credits (May be repeated) Prerequisite: permission of departmental advisor. Prerequisite: permission. Directed studies designed as introduction to research problems under guidance of designated faculty member.

**Research Methodology**
3 credits Prerequisite: Graduate standing and permission of instructor. Advanced analysis of primary data and secondary research. Topics include the development of research proposals, data collection, data processing and analysis, evaluation, writing reports, and presenting results.

**Advanced Operating Systems**
Prerequisite: Admission to Computer Science master’s program or permission. Advanced topics in operating system design: synchronization mechanisms, performance evaluation, security, distributed operating systems.

**Advanced Theory of Programming Languages**
3 credits Prerequisites: Admission to Computer Science master’s program or permission. In-depth study of various issues in the design and implementation of programming languages, such as formal type systems, operational and other semantics, and verification.

**Advanced Algorithms**
3 credits Prerequisite: Admission to Computer Science master’s program or permission. Advanced graph algorithms, matrix multiplication, fast Fourier transforms, lower bound theories, complexity hierarchies, NP-complete and intractable problems, approximation techniques.

**Optimization for Parallel Compilers**
3 credits Prerequisite: Graduate standing and permission of instructor. Advanced analysis of program transformation strategies to support automatic vectorization and parallelization of code, emphasizing restructuring to improve instruction scheduling.

**Computational Biology**
3 credits Prerequisites: Admission to Computer Science master’s program or permission. Introduction to Computer Science graduate program or permission of instructor. Topics include sequence analysis, hidden Markov models, RNA structure prediction, microarray data analysis, biological networks, and molecular dynamics simulation as well as Monte Carlo simulation.

**Software Security**
Prerequisites: Admission to Computer Science master’s program or permission. Issues in software security: common software security errors, steganography, spam, cryptography, malware, internet hacking.

**Computer Networks and Distributed Processing**
Prerequisites: Admission to Computer Science master’s program or permission. Interconnection technologies, protocol layer models, datagram and stream transport services, client-server paradigm, principles and protocols of interconnected networks operating as unified systems, and TCP/IP technology.

**Network Security**
3 credits Prerequisite: Admission to Computer Science master’s program or permission. Visualization pipeline, data representation in visualization, visualization algorithms, object-oriented visualization, scientific visualization, visualization languages, software applications and research topics.

**Expert Systems**
3 credits Prerequisite: Admission to Computer Science master’s program or permission. Architecture of expert systems, knowledge representation and acquisition, inference mechanisms for expert systems, uncertainty management, expert system tools and applications.

**Advanced Computer Architecture**
3 credits Prerequisite: Admission to Computer Science master’s program or permission. Fundamentals of computer design and analysis, with emphasis on cost/performance tradeoffs. Studies of superscalar, vector, RISC, and multiprocessor architectures.

**Advanced Automata and Complexity**
Prerequisite: Admission to Computer Science master’s program or permission. An in-depth study of the theoretical concepts related to complexity theory, such as nondeterministic automata, recursive function theory, the Chomsky hierarchy, Turing machines and undecidability.

**Data Mining**
3 credits Prerequisites: Admission to Computer Science master’s program or permission. Study of fundamental data mining algorithms and their applications in the process of Knowledge Discovery from Databases. Study data warehousing systems and architectures.
### STATISTICS

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<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>550</td>
<td>PROBABILITY</td>
<td>3 credits</td>
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<tr>
<td>562</td>
<td>APPLIED REGRESSION AND ANOVA</td>
<td>4 credits</td>
</tr>
<tr>
<td>589</td>
<td>TOPICS IN STATISTICS</td>
<td>1-3 credits</td>
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<tr>
<td>572</td>
<td>ACTUARIAL SCIENCE II</td>
<td>3 credits</td>
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<tr>
<td>580</td>
<td>STATISTICAL DATA MANAGEMENT</td>
<td>3 credits</td>
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<tr>
<td>575</td>
<td>FOUNDATIONS OF STATISTICAL QUALITY CONTROL</td>
<td>3 credits</td>
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<tr>
<td>589</td>
<td>WORKSHOP IN STATISTICS</td>
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<td>650</td>
<td>ADVANCED PROBABILITY AND STOCHASTIC PROCESSES</td>
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<td>651</td>
<td>PROBABILITY AND STATISTICS</td>
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<td>652</td>
<td>ADVANCED MATHEMATICAL STATISTICS</td>
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<td>660</td>
<td>ADVANCED STATISTICAL METHODS</td>
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<td>661</td>
<td>STATISTICS FOR THE LIFE SCIENCES</td>
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<td>666</td>
<td>NONPARAMETRIC STATISTICS-METHODS</td>
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<td>689</td>
<td>ADVANCED TOPICS IN STATISTICS</td>
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<td>695</td>
<td>PRACTICUM IN STATISTICS AND MATHEMATICS</td>
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<td>698</td>
<td>MASTER'S RESEARCH</td>
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<tr>
<td>898</td>
<td>PRELIMINARY RESEARCH</td>
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<tr>
<td>899</td>
<td>DOCTORAL DISSERTATION</td>
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### ENGINEERING/APPLIED MATHEMATICS

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<th>Title</th>
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<td>3470:</td>
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### MODERN LANGUAGES

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<th>Title</th>
<th>Credits</th>
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<tr>
<td>3500:</td>
<td>THE GENERAL DESIGNATION OF 3500 IS USED FOR LANGUAGES THAT DO NOT HAVE A SPECIFIC DEPARTMENT NUMBER</td>
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### WORKSHOP

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<th>Credits</th>
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<tr>
<td>140:</td>
<td>WORKSHOP</td>
<td>1-4 credits</td>
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Prerequisites and notes:
- Prerequisites vary depending on the course.
- Some courses may require approval from the instructor or department.
- Advanced reading or practical experience in a related field may be necessary.
4 credits

INDIVIDUAL READINGS IN MODERN LANGUAGES
Prerequisite: Graduate status or permission of instructor and department chair. Individual study under the guidance of professor who directs and coordinates student's reading and research.

ARABIC
3501:

1-4 credits

SPECIAL TOPICS IN ARABIC
Prerequisite: Graduate status, permission of instructor and department chair. Development of specialized language skills or reading of significant works of literature or culture not studied in other courses. Conducted in Arabic. May be repeated once with different topic for a total of eight credits.

CHINESE
3502:

1-4 credits

SPECIAL TOPICS IN LANGUAGE, SKILLS, OR CULTURE OR LITERATURE
Prerequisite: Graduate status, permission of instructor and department chair. Development of specialized language skills or reading of significant works of literature or culture not studied in other courses. May be repeated once with different topic for a total of eight credits.

LATIN
3510:

3 credits each

5978 LATIN READING AND RESEARCH
Prerequisite: Graduate status or permission of department. General Latin epigraphy, prose composition or philology; numismatics or certain other archaeological topics may be offered. May be repeated for credit with change of subject.

FRENCH
3520:

3 credits

ADVANCED FRENCH GRAMMAR
Prerequisite: Graduate status or permission of department. Advanced study of French grammar with emphasis on syntax, morphology, grammatical structure and phonetic principles.

1-4 credits

FRENCH CINEMA
Prerequisite: Graduate status or permission of department. Study and discussion of various aspects of French culture and civilization as characterized in movies.

2 credits

FRENCH LITERATURE
Prerequisite: Graduate status or permission of department. Reading and analysis of representative works and literary movements in France. Does not count toward M.A. in French. Conducted in French.

GERMAN
3530:

1-4 credits each

5978 INDIVIDUAL READING IN GERMAN
Prerequisites: Graduate status or permission of department. Individual study under guidance of professor who directs and coordinates student's reading and research.

ITALIAN
3550:

1-4 credits

INDIVIDUAL READING IN ITALIAN
Prerequisites: Graduate status or permission of department. Individual study under guidance of professor who directs and coordinates student's reading and research.

SPANISH
3580:

503 ADVANCED GRAMMAR
Prerequisites: Graduate status or permission of department. Advanced study of Spanish syntax and grammatical analysis. Does not count toward the M.A. in Spanish. Conducted in Spanish.

504 INTRODUCTION TO SPANISH LINGUISTICS
Prerequisites: Graduate status or permission of department. This course provides a detailed overview of the structure of Spanish and areas of inquiry within linguistics: phonetics, phonology, morphology, syntax, semantics, and applied fields.

4 credits

SPANISH LINGUISTICS, PHONOLOGY
Prerequisites: Graduate status or permission of department. Descriptive study of Spanish phonetics and morphology, comparison of Spanish and English sounds, historical aspects, regional variation, and sociolinguistic variation. Conducted in Spanish.

4 credits

SPANISH LINGUISTICS, SYNTAX
Prerequisites: Graduate status or permission of department. Descriptive study of Spanish syntax, introduction to theories of grammar, overview of Spanish semantics and pragmatics. Conducted in Spanish.

507 SURVEY OF HISPANIC LITERATURE: SPAIN
Prerequisites: Graduate status or permission of department. Historical overview of representative works and literary movements in Spain. Does not count toward M.A. in Spanish. Conducted in Spanish.

4 credits

508 SURVEY OF HISPANIC LITERATURE: SPANISH AMERICA
Prerequisites: Graduate status or permission of department. Historical overview of representative works and literary movements in Spanish America. Does not count toward M.A. in Spanish. Conducted in Spanish.

4 credits

509 CULTURAL MANIFESTATION IN MEDIEVAL AND RENAISSANCE SPAIN
Prerequisites: Graduate status or permission of department. Comparative study of representative artistic and literary works of the Medieval and Renaissance periods. Conducted in Spanish.

510 SPANISH APPLIED LINGUISTICS
Prerequisite: Graduate status or permission of department. This course discusses current theories of second language acquisition and their implications for the learning of problematic Spanish structures.

4 credits

511 SPAIN DURING THE BAROQUE PERIOD
Prerequisite: Graduate status or permission of department. A comparative study of the different cultural manifestations during the 17th century in Spain. Conducted in Spanish.

4 credits

512 CERVANTES: DON QUIJOTE
Prerequisite: Graduate status or permission of department. Reading and analysis of Don Quixote as the first modern novel in the historical context of Renaissance and Baroque esthetics. Conducted in Spanish.

4 credits

513 THE DON JULIO MYTH IN SPANISH CULTURE
Prerequisite: Graduate status or permission of department. Study of the evolution of the Don Juan myth from its origins to its latest versions in the 20th century.

4 credits

514 CULTURAL POLITICS IN THE RIVER PLATE
Prerequisite: Graduate status or permission of department. This course will examine the military dictatorships of the seventeens and eighties in Argentina and Uruguay by looking at how these regimes affect culture.

4 credits

516 REPRESENTING REALITY IN 19TH CENTURY SPAIN
Prerequisite: Graduate status or permission of department. A comparative study of the major literary and artistic movements in Spain from Realism to Modernism. Conducted in Spanish.

3 credits

518 20TH CENTURY SPAIN: THE AVANT-GARDE IN LITERATURE AND ART
Prerequisites: Graduate status or permission of department. A comparative study of the major literary and artistic movements in Spain which illustrate the primary cultural changes of the 20th century.

4 credits

519 THE SPANISH CIVIL WAR AND ITS CULTURAL IMPACT
Prerequisite: Graduate status or permission of department. Study of the impact of the Civil War on Spanish culture.

4 credits

522 SPECIAL TOPICS IN SPECIALIZED LANGUAGE SKILLS OR CULTURE OR LITERATURE
Prerequisite: Graduate status or permission of department. Development of specialized language skills or reading of significant works of literature or culture not studied in other courses.

525 20TH CENTURY SPANISH-AMERICAN NOVEL
Prerequisites: Graduate status or permission of department. Reading and discussion of representative contemporary Latin American novels. Conducted in Spanish.

4 credits

527 LATINO CULTURES IN THE USA
Prerequisite: Graduate status or permission of department. Inquiry into the Latino experience of displacement and marginality through the analysis of cultural manifestations in the USA. Conducted in Spanish.

4 credits

530 WOMEN IN 20TH CENTURY HISPANIC LITERATURE
Prerequisites: Graduate status or permission of department. Study of society, customs, history, art, music, etc. of Spain and Hispanic perspective. Does not count toward the MA in Spanish. Conducted in Spanish.

4 credits

531 HISPANIC CULTURE: SPAIN
Prerequisite: Graduate status or permission of department. A comparative study of the different cultural manifestations during the 20th century in Spain. Conducted in Spanish.

4 credits

532 HISPANIC CULTURE: SPANISH AMERICA
Prerequisites: Graduate status or permission of department. Overview and historical survey of Spanish American civilization and culture. Does not count toward the M.A. in Spanish. Conducted in Spanish.

4 credits

661 SPANISH TEACHING PRACTICUM
Prerequisites: Graduate status or permission of department. Orientation and practice of particular aspects of teaching Spanish language and culture. Student teaching experiences are periodically reviewed and evaluated. These credits may not be applied toward degree requirements.

2 credits

6978 INDIVIDUAL READINGS IN SPANISH
Contents of given individual reading program taken from course contests approved for graduate work in Spanish.

1-4 credits each

PHILOSOPHY
3600:

511 PLATO
Prerequisite: Permission of instructor. Detailed study of the origin and development of Plato's Theory of Forms and the related theories of knowledge, ethics, and politics.

3 credits

514 AQUINAS
Prerequisite: Permission of instructor. An in-depth examination of the philosophy of St. Thomas Aquinas covering his contributions in metaphysics, epistemology, ethics, political theory, and philosophical theology.

3 credits

515 AUGUSTINE
Prerequisite: Permission of instructor. An in-depth examination of the philosophy of St. Augustine covering his contributions in metaphysics, epistemology, ethics, political theory, and philosophical theology.

3 credits

518 20TH CENTURY ANALYTIC PHILOSOPHY
Prerequisite: Permission of instructor. Study of ideal and ordinary language movements in 20th Century British and American philosophy. Deals with such figures as Russell, Carnap, Ayer, Moore, Wittgenstein, Ryle and Austin.

3 credits

521 PHILOSOPHY OF LAW
Prerequisite: Permission of instructor. Identification and critical evaluation of classic and contemporary theories and assumptions of law, including legal reasoning, justice, natural law, punishment, etc.

3 credits

524 EXISTENTIALISM
Prerequisite: Permission of instructor. In-depth inquiry into the thought of Kierkegaard, Jaspers, Heidegger, Sartre, Tillich and other existentialists with their concern for the human condition.

3 credits
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526 PHENOMENOLOGY
Prerequisites: Permission of instructor. Inquiry into methodology of Husserl and Heidegger and their influence upon Western European and American thought.
3 credits

532 ARISTOTLE
Prerequisite: Permission of instructor. Detailed study of Aristotle's metaphysics, philosophy of nature, philosophy of mankind and ethics.
3 credits

534 ANTH
Prerequisite: Permission of instructor. Study of Kantian system of thought and its relation to history of philosophy. Includes thorough investigation of one or more of Kant's philosophical works.
3 credits

561 NEUROETHICS
Prerequisite: Permission of instructor. Discussion and evaluation of contemporary theories of moral agency arising from developments in neuroscience.
3 credits

562 THEORY OF KNOWLEDGE
Prerequisite: Permission of instructor. Examination of nature of knowledge; theories of perception, conception and truth, problem of induction and relation of language to knowledge.
3 credits

564 PHILOSOPHY OF SCIENCE
Prerequisites: Permission of instructor. Nature of scientific inquiry, types of explanations, laws and causality, theoretical concepts and reality. Also considers critics of hypothetico-deductive view of science, e.g., Hanson and Kuhn.
3 credits

571 METAPHYSICS
Prerequisite: Permission of instructor. Theories about ultimate nature and ultimate explanation of reality. Uses readings from classical and contemporary sources.
3 credits

580 SEMINAR
(May be repeated with change of topic) Prerequisite: Permission of instructor. Varying philosophical topics not covered in regular course offerings.
3 credits

581 PHILOSOPHY OF LANGUAGE
Prerequisite: Permission of instructor. Contemporary philosophies about nature of language and its relation to reality and human thinking. Includes discussion of views of linguists such as Chomsky.
3 credits

605 ETHICS OF SCIENCE
Examination of the foundational issues surrounding ethics and science as well as consideration of applied ethical issues of scientists, science, new technologies, and society.
3 credits

PHYSICS
3650:

501 EVERYDAY PHYSICS
Prerequisite: Admission to the physics master's program or permission. College-level physics content for future teachers. Inquiry, discovery, activities, discussion, and experimental learning takes place in a laboratory/embedded lecture environment.
4 credits

506 PHYSICAL OPTICS
Prerequisite: Admission to the physics master's program or permission. Propagation, reflection, refraction, and refraction of electromagnetic waves, superposition, polarization, interference and interference phenomena, Fresnel and Fraunhofer diffraction, Fourier optics, coherence theory, and quantum optics.
3 credits

531 MECHANICS I
Prerequisite: Admission to the physics master's program or permission. Mechanics at intermediate level. Newtonian mechanics, motion of a particle in one dimension, central field problems, system of particles, conservation laws, rigid bodies, gravitation.
3 credits

532 MECHANICS II
Prerequisite: Admission to the physics master's program or permission. Advanced mechanics at the senior or beginning graduate level. Moving coordinate systems, mechanics of continuous media, Lagrange's equations, tensor algebra and stress analysis, rotation or rigid bodies, vibration theory.
3 credits

536 ELECTROMAGNETISM I
Prerequisites: Admission to the physics master's program or permission. Electricity and magnetism at intermediate level. Electrostatics and magnetostatics, electric field, scalar potential, dielectrics. Laplace's and Poisson's equations, current, magnetic field, vector potential, magnetic materials, induction.
3 credits

537 ELECTROMAGNETISM II
Prerequisite: Admission to the physics master's program or permission. Special relativity, vector calculus, Maxwell's equations and covariant form; propagation, reflection and refraction of electromagnetic waves; multiple radiation.
3 credits

541 QUANTUM PHYSICS I
Prerequisite: Admission to the physics master's program or permission. Introduction to the quantum theory. Schrodinger equation, observables, angular momentum, perturbation theory, variational principle, bound states, scattering theory, radiative interactions, spin and the Pauli Principle.
3 credits

542 QUANTUM PHYSICS II
Prerequisite: Admission to the physics master's program or permission. Applications of quantum mechanics to atomic, nuclear and solid state physics. Tunneling and alpha decay, periodic potentials, Hydrogen and Helium atoms, interatomic forces, quantum statistics.
3 credits

551 ADVANCED LABORATORY I
Prerequisite: Admission to the physics master's program or permission. Experimental techniques applicable to research-type projects in contemporary physics. FTIR spectroscopy, optical spectroscopy, lasers, SPFM, and thin-film growth and characterization.
3 credits

552 ADVANCED LABORATORY II
Prerequisite: Admission to the physics master's program or permission. Experimental projects applicable to contemporary physics. Diode and dye lasers, laser feedback, chaos, NMR, electron tunneling, and fiber optics.
3 credits

556 TECHNIQUES OF PHYSICS INSTRUCTION
Prerequisite: Admission to the physics master's program or permission. Teaching assistants are introduced to current research in learning physics, shown applications for their labroom, and trained in skills needed as a laboratory teaching assistant.
1 credit

570 INTRODUCTION TO SOLID-STATE PHYSICS
Prerequisite: Admission to the physics master's program or permission. Account of basic physical processes occurring in solids, with emphasis on fundamental relation between these processes and periodicity of crystalline lattice.
3 credits

581.2 METHODS OF MATHEMATICAL PHYSICS I AND II
3 credits each
Prerequisite: Admission to the physics master's program or permission. Vectors, generalized coordinates, tensors, calculus of variations, vector spaces, linear transformations, matrices, eigenvalues, Hilbert space, boundary value problems, transcendental functions, complex variables, analytic functions, Green's functions, integral equations.
3 credits

588 SELECTED TOPICS: PHYSICS
(May be repeated) Prerequisite: Admission to the physics master's program or permission. Consideration of selected topics, procedures, techniques, materials or apparatus of current interest in physics.
3 credits

590 WORKSHOP
(May be repeated) Prerequisite: Admission to the physics master's program or permission. Further investigations of various selected topics in physics, under guidance of faculty member.
3 credits

597 INDEPENDENT STUDY
(May be repeated.) Prerequisite: Admission to the physics master's program or permission. Further investigations of various selected topics in physics, under guidance of faculty member.
14 credits

598 PHYSICS COLLOQUIUM
1 credit
Prerequisite: Admission to the physics master's program or permission. Lectures on current research topics in physics by invited speakers. May be repeated, but only one credit counts toward M.S. degree. Credit/Noncredit.

605 COMPUTER PHYSICS: NUMERICAL SOLUTIONS TO PHYSICS PROBLEMS I
3 credits
Prerequisite: Admission to the physics master's program or permission. Solution of linear and nonlinear least squares curve-fitting. May accommodate scientific problems of individual interest.

606 COMPUTER PHYSICS: NUMERICAL SOLUTIONS TO PHYSICS PROBLEMS II
3 credits
Prerequisite: Admission to the physics master's program or permission. An interdisciplinary course stressing the fundamentals and applications of physics at surfaces, including corrosion, catalysis, adhesion, and tribology.

615 ELECTROMAGNETIC THEORY I
3 credits
Prerequisite: Admission to the physics master's program or permission. Electrostatics and magnetostatics at advanced level for graduate students, boundary value problems, dielectrics, multipole expansions, time-varying fields, Maxwell's equations and electromagnetic waves, reflection, refraction, wave guides and cavities.

616 ELECTROMAGNETIC THEORY II
3 credits
Prerequisite: Admission to the physics master's program or permission. Scattering and diffraction, plasma physics, special theory of relativity, dynamics of relativistic particles in fields, collisions of charged particles, radiation from moving charges, bremsstrahlung, multiple fields.

625 QUANTUM MECHANICS I
3 credits
Prerequisite: Admission to the physics master's program or permission. Basic concepts of quantum mechanics, representation theory, particle in a central field, addition of angular momentum and spins, Clebsch-Gordon coefficients, perturbation theory, scattering, transition, and bound states.

626 QUANTUM MECHANICS II
3 credits
Prerequisite: Admission to the physics master's program or permission. Foundations of relativistic quantum mechanics. Klein-Gordon and Dirac equations. Review of formulations in electromagnetic field, second quantization of bosons and fermions, superfluidity and superconductivity.

641 LAGRANGIAN MECHANICS
3 credits
Prerequisite: Admission to the physics master's program or permission. Principle of least action and Lagrangian equation of motion, conservation laws, integration of equation of motion, collisions, small oscillations, Hamilton's equations, canonical transformation.

661 STATISTICAL MECHANICS
3 credits
Prerequisite: Admission to the physics master's program or permission. Fundamental principles of statistical mechanics, Gibbs, Fermi and Bose Statistics, solids, liquids, gases, phase equilibrium, chemical reactions.

669 CRITICAL PHENOMENA AND PHASE TRANSITIONS
3 credits

685 SOLID-STATE PHYSICS I
3 credits
Prerequisites: Admission to the physics master's program or permission. Theory of physics of crystalline solids. Properties of the reciprocal lattice and Bloch's theorem. Lattice dynamics and specific heat. Electron states; cellular method, tight-binding method, Green's function technique.

686 SOLID-STATE PHYSICS II
3 credits
Prerequisite: Admission to the physics master's program or permission. Orthogonalized plane and pseudo potentials. Electron-electron interaction, screening by impurities, Friedel sum rule and plasma oscillations. Dynamics of electrons, transport properties and Fermi surface.

699 SPECIAL PROBLEMS IN THEORETICAL PHYSICS
1-3 credits
(May be repeated.) Prerequisite: Admission to the physics master's program or permission. Intended to facilitate expansion of particular areas of interest in theoretical physics by consultation with faculty member and independent study beyond available course work.

700 SEMINAR IN THEORETICAL PHYSICS
1-3 credits
(May be repeated.) Prerequisite: Admission to the physics master's program or permission.

700 GRADUATE RESEARCH
16 credits
Prerequisite: Admission to the physics master's program or permission. Candidates for M.S. degree may obtain up to five credits for faculty supervised research projects. Grades and credit received at completion of such projects.

709 DOCTORAL RESEARCH
3-15 credits
(May be repeated.) Prerequisite: approval of the Student Advisory Committee for Ph.D. research in physics, physical chemistry, polymer science, applied mathematics or electrical engineering. Original research by a Ph.D. candidate in various disciplines under the guidance of physics faculty.

POLITICAL SCIENCE
3700:

502 POLITICS AND THE MEDIA
Examination of relationships between the press, the news media and political decision makers.
3 credits

503 MEDIA, CRIME, AND PUBLIC OPINION
Examines the social construction of crime in mass media and how it impacts public opinion, including fear of crime, beliefs about crime causation, and crime policy.
3 credits

510 INTERNATIONAL SECURITY POLICY
Prerequisite: Admission to the physics master's program or permission. Further investigations of various selected topics in physics, under guidance of faculty member.
14 credits
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630 CORE I: INDIVIDUAL DIFFERENCES 2 credits
Prerequisite: graduate standing in psychology or the collaborative doctoral program in counsel-
ling psychology or permission of instructor. Survey of theoretical perspectives on individual

differences in personality and behavior and of literature on between- and within-group cultur-
al variables influencing personality development and assessment.

640 CORE II: BIOPSYCHOLOGICAL 2 credits
Prerequisite: graduate standing in psychology or the collaborative doctoral program in coun-
selling psychology or permission of instructor. Survey of nervous system structure/function
including anatomy, neurophysiology, and synaptic transmission. Also overviews bio-

logical bases of learning, memory, consciousness, intelligence, psychopharmacology, behav-
in and cognition.

650 CORE V: SOCIAL-COGNITIVE PSYCHOLOGY 2 credits
Prerequisite: graduate standing in psychology or the collaborative doctoral program in coun-
selling psychology or permission of instructor. Social and cognitive theory/research applied to
the study of how people understand and interpret their social worlds. Topics include: person percep-

tion, attribution, social categorization, social cognition, and social influence.

660 SCIENCE AND ETHICS OF INDUSTRIAL PSYCHOLOGY 4 credits
Survey of industrial psychology including selection and performance measurement. Also, discussion
of methodologies used in various fields of industrial psychology.

672 COUNSELING PRACTICUM 2 credits
Prerequisite: graduate standing in psychology and permission of instructor. Introduction to

development of therapeutic skills and intervention techniques via role play, real-life cases,
and video to practice therapeutic approaches of actual clinical work samples. (May be repeated
for a total of 8 credits.) Credit/Noncredit.

673 COUNSELING PRACTICUM LAB 2 credits
Prerequisite: graduate standing in psychology and instructor's permission. Corequisite: E727.
Application of therapeutic skills and intervention techniques to work with clients in the Psy-

cology Department Counseling Clinic, including small group supervision of clinical work.
(May be repeated for a total of 8 credits.) Credit/Noncredit.

674 PERSONNEL PRACTICUM 2 credits
(May be repeated.) Prerequisite: 660, graduate standing in psychology, 14 credits of graduate

personnel psychology, and permission of the instructor. Supervised field experience in industry/or-

ganizational psychology in settings including business, government, or social organizations.
The field experience requires the utilization of individual/organizational psychological theories and tech-
quies. Credit/Noncredit.

677 APPLIED COGNITIVE AGING PRACTICUM 14 credits
(May be repeated.) Prerequisite: 671, 672, 673 and permission of instructor. This course provides

students with the most recent literature in cognitive neuropsychology within the context of aging
research.

640 CORE I: BIOPSYCHOLOGICAL 2 credits
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research.

701 PSYCHODIAGNOSTICS 4 credits
Prerequisite: 660, graduate standing in psychology, 14 credits of graduate personnel psychology,
and permission of the instructor. Analysis of test construction techniques. Statistical
methods of organizational change and transformation used to increase organizational effec-
tiveness.

702 SURVEY OF PROJECTIVE TECHNIQUES 4 credits
Prerequisite: 630 or instructor's permission. Introduction to rationale, assumptions and ethics,
and research of projective testing. Elementary administration, scoring and interpretation of
Rorschach test, and survey of other important projective instruments.

704 MASTERS THESIS 4 credits
(May be repeated.) Prerequisite: permission of instructor. Research analysis of data and

preparation of thesis for master's degree.

705 SURVEY OF INDUSTRIAL PSYCHOLOGY 4 credits
Prerequisite: 660, graduate standing in psychology, or permission of the instructor. Survey of

the general systems theory framework to the study of the relationships among organiza-
tional characteristics and human behavior, the internal processes of organizations, and the rela-
tionships between organizations and their environment.

706 ROLE OF ATTITUDES AND VALUES IN INDUSTRIAL/
ORGANIZATIONAL PSYCHOLOGY 4 credits
Prerequisite: 660, graduate standing in psychology, or permission of the instructor. Survey of

the role of attitudes and values in the prediction of behavior including consumer psy-
chology, explaining attitude changes, measurement of attitudes and the use of survey
methodology.

710 JOB EVALUATION AND EQUAL PAY 4 credits
Prerequisite: 660. Major job evaluation systems will be reviewed and critiqued. Issues such as

issues involved in job evaluation, including current issues such as diversity and cultural
factors, will be addressed. Major job evaluation systems will be compared. Issues concerning federal regulation including the
Equal Pay Act, comparable worth and other issues will be discussed. Regression approaches
to job evaluation and other approaches will be reviewed.

715 EDUCATION AND TRAINING IN ORGANIZATIONAL PSYCHOLOGY 4 credits
Prerequisite: 660 or permission of instructor. Survey of theories and introduction to practical
methods of organizational change and transformation used to increase organizational effec-
tiveness and improve employee quality of work life.

716 INFORMATION PROCESSING AND INDUSTRIAL/
ORGANIZATIONAL PSYCHOLOGY 4 credits
Prerequisite: 660. Coverage of current theories in cognitive psychology is applied to tradition-
al concerns of industrial/organizational psychology such as performance appraisal or motiva-
tion.

717 PERSONNEL PSYCHOLOGY AND THE LAW 4 credits
Prerequisite: 660. Issues in personnel psychology which have legal implications are reviewed.
Emphasis is placed on the legal implications of human resource management and on the
impact of recent court decisions reviewed.

718 PERFORMANCE FEEDBACK AND EVALUATION 4 credits
Prerequisite: 660, graduate standing in psychology, or permission of instructor. Examin-
e of current theories and practice in the design of performance appraisal. Topics will include
sessment methods, subcultural variations, and hospice/dying.

719 TRAINING 4 credits
Prerequisite: 660, graduate standing in psychology, or permission of the instructor. Review of

methods of organizational change and transformation used to increase organizational effec-
tiveness and improve employee quality of work life.

720 COUNSELING PRACTICUM 4 credits
(May be repeated.) Prerequisite: graduate standing in psychology and permission of the instruc-
tor. Special topics in psychology.

721 COUNSELING PRACTICUM 4 credits
(May be repeated.) Prerequisite: 671, 672, 673 and permission of instructor. This course pro-
vides graduate students in counseling with actual client contacts and supervisory experiences
in counseling psychology.

724 COUNSELING PSYCHOLOGY PRACTICUM 4 credits
(May be repeated.) Prerequisite: 796 (eight hours) or 6600:675 (five hours). Advanced coun-
eling psychology students will have supervised training with clients in a variety of settings
and will focus on supervised development of specialized theoretical applications. Credit/non-
credit.

725 INDEPENDENT READING AND/OR RESEARCH 12 credits
(May be repeated.) Prerequisite: permission of the instructor. Individual readings and/or
research on a topic under supervision of faculty member with whom specific arrangements have
been made.
SOCIOLOGY 385O:

510 SOCIAL STRUCTURES AND PERSONALITY 3 credits
Interrelationships between position in society, personality characteristics. Personality treated as both result and determinant of social structure and process. Lecture.

511 SOCIAL INTERACTION 3 credits
Intensive study of advanced theory and research in social psychology, particularly how social interaction and self-concept affect one another. Lecture.

512 SOCIALIZATION: CHILD TO ADULT 3 credits
Theoretical and empirical analyses of processes by which infant, child, adolescent and adult learn social norms and cultural requirements necessary to function in new roles, changing roles and society in general.

521 RACIAL AND ETHNIC RELATIONS 3 credits
An overview and analysis of structure and dynamics of race and ethnic relations from a variety of perspectives emphasizing both historical and contemporary issues. Lecture.

525 SOCIOLOGY OF URBAN LIFE 3 credits
Emergence and development of urban society. Examination of urban social structure from medieval to modern metropolis, the problems and prospects. Emphasis on various life styles of urban subcultures. Lecture/discussion.

528 THE VICTIM IN SOCIETY 3 credits
Study of nature, causes, and consequences of victimization with special focus on crime victimization.

530 JUVENILE DELINQUENCY 3 credits
Analysis of social structure and process from which delinquency develops. Emphasis on current and past research. Lecture/discussion.

531 CORRECTIONS 3 credits
Theories, beliefs and practices of community and institutional corrections systems, including past and current social research. Course taken prior to 3 credit hour Field Placement in Corrections (385O:471).

533 SOCIOLOGY OF DEVIANT BEHAVIOR 3 credits
Study of theories of deviant behavior and relevant empirical research. Special emphasis given to interaction processes and social control. Lecture.

541 SOCIOLOGY OF LAW 3 credits
Social issues and consequences of law and legal processes. Emphasis on uses of law, social change and aspects of legal professions. Lecture.

544 SOCIAL ISSUES IN AGING 3 credits
A look at the major issues and problems facing older persons. Special attention is given to the unmet needs of the elderly as well as an examination of current societal policy and programs to meet these needs.

547 SOCIOLOGY OF SEX AND GENDER 3 credits
Review of research and theories of sex and gender. Examination of gender as structure, process and experience in society.

550 SOCIOLOGY OF MENTAL ILLNESS 3 credits
The social history of the mental hospital, theories and epidemiology of mental illness, community-based treatment models, the organization of mental health services, the role of personal social networks and mutual support groups.

555 FAMILY VIOLENCE 3 credits
Family violence with a focus on child abuse, courtship violence, spouse/partner abuse, and elder abuse. Theories, methodologies, and strategies to end family violence are explored.

560 SOCIOLOGICAL THEORY 4 credits
An overview and examination of theoretical issues in sociology, through the study of both classical and contemporary theoretical works.

601 PROSEMINAR IN SOCIOLOGY 3 credits
Prerequisite: Graduate standing in sociology or permission of instructor. Introduction to professional aspects of sociology and major areas of study/research in the field. Seminar. Credit/Noncredit.

602 FAMILY AND SOCIETY 3 credits
Prerequisite: Graduate standing in Sociology or permission of instructor. Examination of the interrelationships of family and society: family as both independent and dependent variable, at micro/macro levels. Development and impact of family policies is discussed.

604 QUANTITATIVE METHODS IN SOCIOLOGY 4 credits
Prerequisite: Graduate standing in Sociology or permission of instructor. Introduction to use of quantitative methods for analyzing sociological issues. Instruction in the process of empirically verifying a theoretical question, from conceptualization to analysis. (Same as KUS 6/72111.) Lecture.

615 EPIDEMIOLOGICAL METHODS IN HEALTH RESEARCH 3 credits
Prerequisite: Graduate standing in Sociology or permission of instructor. Designed to introduce the student to methods of developing and understanding information concerning the distribution of illness and injury in society and evaluations of interventions to reduce the burden. Lecture.

625 SOCIOLOGY OF SENTIMENTS AND EMOTIONS 3 credits
Prerequisite: Graduate standing in Sociology or permission of instructor. A sociological perspective is employed to analyze and understand the production, distribution and utilization of socially created sentiments and emotions. (Same as KUS 6/72436) Seminar.

629 PROFESSIONAL AND ETHICAL ISSUES IN SOCIOLOGY 3 credits
Prerequisite: Graduate standing in Sociology. Introduction to professional and ethical issues including the logic of inquiry, developing effective approaches to independent learning and research, the research certification process and plagiarism. Lecture.

631 SOCIAL PSYCHOLOGY 3 credits
Prerequisite: Graduate standing in Sociology or permission of instructor. An in-depth examination of the theoretical and methodological issues of research, both classical and contemporary. Provided is a critical analysis of social behavior with background and working knowledge of social psychological aspects of social phenomena. (Same as KUS 72430) Seminar.

634 PERSONALITY AND SOCIAL SYSTEMS 3 credits
Prerequisite: Graduate standing in Sociology or permission of instructor. Examination of contemporary theory and research on linkages between personality and society. Emphasis is placed on applications in studies of modernization, social class and occupations and sex roles. (Same as KUS 72430 Seminar).

635 SOCIAL DEMOGRAPHY OF GENDER 3 credits
Prerequisite: Permission. Examination of theories and research on gender origins, characteristics and changes. Emphasizes recent empirical research on gender role patterns and processes in various industrial societies. (Same as KUS 72566)
622 HEALTH PLANNING AND PUBLIC POLICY 3 credits
Basic knowledge of the health service delivery system is provided for planners and adminis-
trators.

623 PUBLIC WORKS ADMINISTRATION 3 credits
Prerequisite: permission. Examines the building, maintenance and management of public works.

624 EMERGENCY MANAGEMENT POLICY IMPLEMENTATION AND ANALYSIS 3 credits
Prerequisite: permission. Examines the implementation of emergency management policy at the federal, state, and local levels. Analyzes current policy initiatives in this emerging field.

625 STRATEGIC PERSPECTIVES IN EMERGENCY MANAGEMENT 3 credits
Prerequisite: permission. Public administration responsibilities in emergency management.
Examines unfunded mandates and the optimal strategies for success in the four phases of emergency management.

626 GRANTSHIPSMAHSHIP 3 credits
Students will gain knowledge of the grant-seeking and awarding processes. Emphasis is on the finding opportunities and public organization in the states.

627 CULTURAL COMPETENCE IN THE PUBLIC SECTOR 3 credits
In this course students will learn how to effectively communicate with culturally diverse indi-
viduals and learn about various social stratification systems.

640 SOCIAL ANALYSIS 3 credits
Prerequisite: permission. Study of revenue and expenditure patterns of the city’s government.

641 URBAN ECONOMIC GROWTH AND DEVELOPMENT 3 credits
Prerequisite: permission. Examination of urban economic unit and its susceptibility to social, economic, political and physical change.

642 PUBLIC BUDGETING 3 credits
Prerequisite: permission. Current professional practice and theoretical issues in public bud-
geting and management of capital and operating budgets.

643 INTRODUCTION TO PUBLIC POLICY 3 credits
Prerequisite: permission. Introduction to models of public policy formulation, identification of key policy issues, and their impact on policy implementation and policy impact.

644 PUBLIC SECTOR FUND MANAGEMENT 3 credits
Prerequisite: 640, 642. Provides an overview of theoretical approaches for recording and reporting data related to public projects or programs and reviews methods for investing pro-
tect funds.

645 PUBLIC SECTOR LABOR RELATIONS 3 credits
Prerequisite: 616. This course examines fundamental issues and principles of public sector labor relations with particular attention to the collective bargaining processes and to adminis-
tration of labor contracts.

647 AGING POLICY 3 credits
In this course students will examine political institutions that impact the adoption and imple-
mentation of programs for the aged, including Medicare, Medicaid, and Social Security.

650 COMPARATIVE URBAN SYSTEMS 3 credits
Prerequisite: permission. Conceptual schemes and methodology for comparative urban analy-
sis among a number of major cities selected from each continent.

651 INTRODUCTION TO CITY MANAGEMENT 3 credits
Prerequisite: completion of 611. Focus on issues that confront public managers in utilizing informa-
tion and decision making.

660 STRATEGIC MANAGEMENT IN PUBLIC AND NON PROFIT SECTORS 3 credits
This course examines the use of skills in the development of decisions and actions that shape what public organizations are, what they do and why they do it.

661 PUBLIC PROJECT DESIGN AND MANAGEMENT 3 credits
Prerequisite: 600. This course provides an in-depth theoretical overview of the public project cycle including hands-on approaches to design and management. Examines frameworks for imple-
mentation and management of capital project impact.

662 FUNDRAISING AND RESOURCE MANAGEMENT 3 credits
Prerequisite: permission. Examines alternative methods of fundraising and unique resource management challenges and opportunities of non-profit organizations.

663 NON-PROFIT MANAGEMENT 3 credits
Prerequisite: permission. Concepts and methods for managing non-profit organizations.

664 MANAGING INFORMATION AND TECHNOLOGY IN THE PUBLIC SECTOR 3 credits
Prerequisite: permission. Focus on issues that confront public managers in utilizing informa-
tion as an organizational asset.

670 RESEARCH FOR FUTURES PLANNING 3 credits
Prerequisite: 600 and 601. Development of eight credits of core curriculum in urban studies. 
An overview of the techniques associated with the field of futures research and their appli-
cation to long-term urban planning.

671 PROGRAM EVALUATION IN URBAN STUDIES 3 credits
Prerequisite: 600 or equivalent. Major considerations appropriate for conducting evaluations of a wide variety of urban service programs and policies affecting urban and metropolitan areas.

672 ALTERNATIVE URBAN FUTURES 3 credits
Overview of topics and issues associated with alternative urban futures and their implications for planning and public policy in urban communities.

673 COMPUTER APPLICATIONS IN PUBLIC ORGANIZATIONS 3 credits
Prerequisite: 600 and 601. Introduction to microcomputer applications in the public sector, includ-
ing word processing, statistical analysis, report writing, graphical representation and spreadsheet packages.

674 ANALYTICAL TECHNIQUES FOR PUBLIC ADMINISTRATORS 3 credits
Prerequisite: 600. Public sector applications of quantitative methods, including decision analy-
sis, probability theory, mathematical programming and simulation.

675 ADVANCED TECHNIQUES IN POLICY ANALYSIS 3 credits
Prerequisite: 600. Public sector applications of quantitative methods, including decision analy-
sis, probability theory, mathematical programming and simulation.

680 SELECTED TOPICS IN URBAN STUDIES 3 credits
Prerequisite: permission. Selected topics in specific areas of urban planning, in various devel-
opmental processes of cities, or in various urban policy and administrative issues. (A maxi-
um of 3 credits may be earned in 680 and 681)

690 URBAN STUDIES SEMINAR 3 credits
Prerequisite: 16 credits of urban studies core plus quantitative methods. Urban research methods applied to specific urban research area. Comprehensive paper required.

691 MASTER’S COLLOQUIUM 1 credit
This course is required for masters students on assistantships. The course reviews program-
matic, research, and curricula issues in the masters program.

PUBLIC ADMINISTRATION AND URBAN STUDIES 3890:

590 WORKSHOP 3 credits
Prerequisite: permission. (May be repeated for a maximum of six credits) Group studies of special topics in urban studies and public administration. May not be used to meet core gradu-
ate level requirements. May be used for elective credit only.

600 BASIC QUANTITATIVE RESEARCH 3 credits
Prerequisite: permission. Examines basic framework of social science research methodolo-
gies and basic complementary statistical techniques, including probability and sampling.

601 ADVANCED RESEARCH AND STATISTICAL METHODS 3 credits
Prerequisite: 600. Extends study of social science to include more advanced research designs and multivariate statistical techniques.

602 HISTORY OF URBAN DEVELOPMENT 3 credits
Examination of major literature on processes of urbanization in United States and selected facets of urban institutional development.

603 HEALTH BEHAVIOR: THEORY AND APPLICATION 3 credits
Examination of the application of behavioral theory principles to the individual, interpersonal, and community levels with an emphasis on application in health policy and decision making.

604 FOUNDATIONS OF PUBLIC ADMINISTRATION 3 credits
Prerequisite: permission. Introduction to the legal foundations and context of public adminis-
tration, including the interaction of the course, public organizations, public administration and the public.

605 FOUNDATION COURSE IN PUBLIC ADMINISTRATION 3 credits
Prerequisite: permission. Introduction to the theory and practice of the field of public admin-
istration. Foundation course for later MPA study.

606 NATIONAL URBAN POLICY 3 credits
Prerequisite: permission. Major federal policies that relate to urban problems examined in regard to policy-making processes, implementation and impact.

607 INTERGOVERNMENTAL MANAGEMENT 3 credits
Prerequisite: permission. Examines the field of intergovernmental relations as it applies to urban administration and management.

608 ETHICS AND PUBLIC SERVICE 3 credits
Prerequisite: 18 credit hours in the MPA program or permission. Examination of the ethical problems and implications of decisions and policies made by those whose actions affect the public and public policy.

609 PUBLIC ORGANIZATION THEORY 3 credits
Prerequisite: permission. Examines the development of public organizational theory and the current status of theoretical developments in the field of public administration.

610 PERSONNEL MANAGEMENT IN THE PUBLIC SECTOR 3 credits
Fundamental issues and principles of public sector personnel administration, including recruit-
ment, selection, training, tenuring, supervision, evaluation, labor relations and arbitration.

611 LEADERSHIP AND DECISION-MAKING 3 credits
Examination of context of organizational management including relevant organizational theories, strategic management and planning and public sector leadership.

612 CITIZEN PARTICIPATION 3 credits
The functional theory, background, techniques, and issues of citizen participation in urban policy making.

613 COMMUNITY ORGANIZING 3 credits
Prerequisite: permission. The course will examine the evolution and influence of neighbor-
hood, community and “grass roots” organizations on public policy making in urban communi-
ties.

614 SOCIAL SERVICES PLANNING 3 credits
Prerequisite: permission. In-depth analysis of total social services requirements and various ways in which social service planning function is carried out in urban communities.

615 URBAN SOCIETY AND SERVICE SYSTEMS 3 credits
Prerequisite: permission. Analysis of social bases of urban society, hierarchies, social prob-
blems, relationships to planning, public services.

722 EARLY SOCIOLOGICAL THOUGHT 3 credits
Prerequisite: Graduate standing in Sociology or permission of instructor. Two to four major sociological thinkers prior to 1950 examined in depth. Specific persons considered will be chosen by instructor but will be announced well in advance of beginning of class. (Same as KSU 72329) Seminar.

723 CONTEMPORARY SOCIOLOGICAL THOUGHT 3 credits
Prerequisite: permission. Review of 22, graduate work in sociology, or permission. Intensive, critical analysis of current scholarship in a broad range of contemporary sociological theories. Virtually all required readings drawn from primary sources. (Same as KSU 72329) Seminar.

726 STRATIFICATION AND HEALTH 3 credits
Prerequisite: Graduate standing in Sociology or permission of instructor: Race, social class, and gender differences in physical and mental health status, help-seeking behavior, and health care. Race, class, and gender stratification of health care workers. (Same as KSU 72329) Seminar.

727 SOCIOLOGY OF OCCUPATIONS, PROFESSIONS AND HEALTH CARE 3 credits
Prerequisite: Graduate standing in Sociology or permission of instructor. Sociological exami-
nation of the organization of work in the health care field with emphasis on occupations, pro-
fessions, and health care delivery. (Same as KSU 72327) Seminar.

728 SOCIOLOGY OF MENTAL HEALTH AND MENTAL DISORDERS 3 credits
Prerequisite: Graduate standing in Sociology or permission of instructor. Sociological exami-
nation of the social processes that affect mental health, that frame cultural ideas of normality and illness, and that define clinical pathology. (Same as KSU 72326) Seminar.

747 URBAN SOCIOLOGY 3 credits
Prerequisite: Graduate standing in Sociology or permission of instructor. Analysis of theories of urban process and review of major contributions to empirical analysis of urban life. (Same as KSU 72659) Seminar.

753 SPECIAL TOPICS IN SOCIAL ORGANIZATION 1-3 credits
May be repeated. Prerequisite: Graduate standing in Sociology or permission of instructor. 
Open course to cover content not readily subsumable under other headings. Content of course to be determined by instructor. (Same as KSU 72595) Seminar.

7928 INDIVIDUAL INVESTIGATION 1-3 credits each
May be repeated. Prerequisite: one semester of graduate work, permission of faculty, and advisor and chair of department. Readings and research supervised by member of gradu-
ate faculty. (Same as KSU 72896) Seminar.

899 DOCTORAL DISSERTATION 1-0 credits
Prerequisite: Graduate standing in Sociology or permission of instructor. (Must be repeated for a minimum of 30 credits) Dissertation. (Same as KSU 82999) Seminar.
Graduate Courses

695 INTERNSHIP
Faculty-supervised work experience for "pre-service" students participating in policy planning and administrative problem-solving in government and non-profit organizations.
1-3 credits

697 INDIVIDUAL STUDIES
Prerequisite: permission. (May be repeated for a total of six credits) Directed individual readings or research on specific area or topic.
1-3 credits

699 MASTER'S THESIS
Prerequisite: permission. Supervised thesis writing. (May be repeated for a total of nine credits, however, only six credits apply toward degree. Replaces two courses in specialization.)
1-3 credits

700 ADVANCED RESEARCH METHODS I
Prerequisite: Master's level course in research methods or permission. Introduction to statistical techniques and methodologies in doctoral and postdoctoral research. Emphasis on conceptual and mathematical relationships.
3 credits

701 ADVANCED RESEARCH METHODS II
Prerequisite: 700 or equivalent. Continuation of 700. Emphasis placed upon conceptual and methodological interrelationships of multivariate statistical techniques as well as application of these techniques through computer analysis of urban data sets.
3 credits

702 URBAN THEORY I
Prerequisite: permission. Review of major theoretical tradition examining urban problems; for students entering the doctoral program in urban studies (first in two-course sequence).
3 credits

703 URBAN THEORY II
Prerequisite: 702. Review of major professional disciplines dealing with urban problems; for students entering the doctoral program in urban studies (second in two-course sequence).
3 credits

704 PUBLIC BUREAUCRACY
Prerequisite: permission. Analysis of bureaucratic operations in the implementation of public policy, including special attributes of human service organizations and the democratic theory context. Emphasis on decision making and implementation.
3 credits

705 ECONOMICS OF URBAN POLICY
Prerequisite: master's level knowledge of macroeconomics and microeconomics or special permission. Survey of research tools of economic analysis in seminar format to examine options available to urban policy makers in operation of public service and economic development of cities.
3 credits

706 PROGRAM EVALUATION
Prerequisite: permission. Advanced treatment of topics in program evaluation.
3 credits

707 URBAN PLANNING AND MANAGEMENT STRATEGIES
Prerequisite: permission. Analysis of urban planning policy issues and strategies for implementation in public policy formulation. Emphasis on use of planning process as integrative mechanisms.
3 credits

708 URBAN POLICY: THE HISTORICAL PERSPECTIVE
Prerequisite: permission. Critical examination of major ideas about the city from Aristotle to the 20th Century and their impact on urbanity and the policy process.
3 credits

709 SYSTEMS AND PROCESSES OF POLICY ANALYSIS
Prerequisite: permission. Analysis of administrative processes within public organizations, federal, state and local in the United States, emphasis on urban community.
3 credits

710 QUALITATIVE RESEARCH METHODS
Prerequisites: 700 and 703. Critical examination of Social Science Research methodologies such as content analysis. Open-ended survey techniques and other means of creating non-statistically generated data.
3 credits

711 SEMINAR IN PUBLIC ADMINISTRATION
Prerequisite: permission. In-depth review and critique of major intellectual traditions, concepts and theories underlying public administration in the United States.
3 credits

712 SEMINAR IN POLICY ANALYSIS AND EVALUATION
Prerequisite: permission. In-depth review and critique of major intellectual traditions, concepts and theories underlying public administration in the United States.
3 credits

713 SEMINAR IN URBAN AND REGIONAL PLANNING
Prerequisite: permission. In-depth review and critique of major intellectual traditions, concepts and theories underlying urban and regional planning in the United States.
3 credits

714 THEORETICAL FOUNDATIONS FOR PUBLIC AFFAIRS
Prerequisite: permission of instructor. This course critically considers the theoretical foundations for public affairs for scholarship and research. It contrasts traditional social and natural science approaches and more recent alternative theories to PA theory.
3 credits

720 COMPARATIVE PLANNING STRATEGIES
Prerequisite: permission. Review and analysis of alternative planning theories, institutional factors and environmental changes in a variety of national settings.
3 credits

725 ETHICS IN GOVERNMENT
This course will explore the differences between individual and collective responsibility, private and public morality and the nexus between democratic and moral development.
3 credits

731 THEORIES OF PUBLIC BUDGETING AND FINANCE
Prerequisite: 711. Examines the theories and perspectives that have shaped how government uses and implements budgets.
3 credits

732 GOVERNANCE AND ADMINISTRATION
3 credits

Goverment and administration are interrelated activities, yet have been taught as distinct activities. This course explores the connections and interrelatedness of the concepts.
3 credits

733 THEORY OF PUBLIC SECTOR HUMAN RESOURCE MANAGEMENT
Prerequisite: permission. Examination of the organizational behavior and administrative theories that support modern public personnel systems.
3 credits

734 CONCEPTUAL AND LEGAL FOUNDATIONS OF PUBLIC ADMINISTRATION
Prerequisite: permission. Theoretical examination of how constitutional and administrative law influence public sector decision-making.
3 credits

735 COMPARATIVE ADMINISTRATION
Prerequisite: permission. Examination of the various political and administrative frameworks within which public administrators function.
3 credits

736 LEADING PUBLIC ORGANIZATIONS
Prerequisite: permission. Examination of the various theories of organizational leadership and their application in public organizations.
3 credits

740 SURVEY/RESEARCH METHODS IN THE PUBLIC SECTOR
Prerequisite: permission. Examination of the techniques and methods used by public organizations to enhance civic involvement. Critiques of methodologies based upon information needs and citizens surveyed.
3 credits

741 ECONOMIC ANALYSIS IN PUBLIC ADMINISTRATION
Prerequisite: permission. Use of analytical methods for urban socioeconomic data gathering, modeling, analysis, and reporting.
3 credits

760 SEMINAR IN HEALTH POLICY
Comparative review of health policy using historical, political, and economic perspectives and contexts. Emphasizes frameworks for conducting health policy analyses.
3 credits

780 PH. D. COLLOQUIUM
For doctoral candidates. This course introduces new doctoral students to the perspectives and practices of doctoral study. This is a credit/non-credit course.
1 credit

828 URBAN POLICY STUDIES
1-4 credits

832 URBAN POLICY: THEORETICAL FOUNDATIONS
3 credits

840 URBAN POLICY: THEORETICAL FOUNDATIONS
3 credits

850 URBAN POLICY: THEORETICAL FOUNDATIONS
3 credits

860 CURRICULAR PRACTICAL TRAINING
3-9 credits

875 ENGINEERING MANAGEMENT REPORT
2 credits

CHEMICAL ENGINEERING

521 FUNDAMENTALS OF MULTIPHASE TRANSPORT PHENOMENA
3 credits

524 FUNDAMENTALS OF MULTIPHASE TRANSPORT PHENOMENA
3 credits

526 FUNDAMENTALS OF MULTIPHASE TRANSPORT PHENOMENA
3 credits

528 FUNDAMENTALS OF MULTIPHASE TRANSPORT PHENOMENA
3 credits

601 DIGITIZED DATA AND SIMULATION
3 credits

610 CELLULAR PHYSIOLOGY
3 credits

611 CELLULAR PHYSIOLOGY
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639 CELLULAR PHYSIOLOGY
3 credits
362 NONLINEAR DYNAMICS AND CHAOS
Description and analysis of the complex behavior exhibited by nonlinear equations. Emphasis is on the use of graphical methods to quantify chaos. 3 credits

363 COLLOIDS—PRINCIPLES AND PRACTICE
Prerequisite: permission of instructor. Colloid science and applications in chemical and biomaterials engineering: Dispersive systems, interfacial forces, surface tension, interfacial thermodynamics, colloidal applications, biomaterials applications and characterization techniques. 3 credits

364 APPLIED SURFACTANT SCIENCE
Prerequisite: 610. The basics of surfactant science, the chemical engineering application of surfactants, including use in polymerization media, separations, emulsion, microemulsion, and a rheology modifier. 3 credits

365 ADVANCED POLYMER ENGINEERING
Prerequisite: 600 or permission. Reactors for polymerization, polymer characterization, polymer processing, polymer rheology. 3 credits

460 ADVANCED PLANT DESIGN
Prerequisite: permission. Treatment of process and equipment design, scale-up, optimization, process synthesis, process economics. Case problems. 3 credits

467 RENEWABLE RESOURCES FOR ENVIRONMENTALLY BENIGN CHEM PRODUCTION
Prerequisite: permission of instructor. Focus is on chemical and biochemical processing technologies for the preparation of fuels, polymeric materials, and specialty chemicals from renewable resources. 3 credits

468 HETEROGENEOUS CATALYSIS
Kinetics and mechanisms of heterogeneous and homogenous catalytic reactions; characterization and design of heterogeneous catalysts. 3 credits

469 TOPICS IN CHEMICAL ENGINEERING
(May be repeated for a total of six credits.) Prerequisite: Permission. Topics selected from new and developing areas of chemical engineering, such as electrochemical engineering, coal and synthetic fuels processing, bioengineering, simultaneous heat and mass transfer phenomena and new separation techniques. 3 credits

467 CHEMICAL ENGINEERING REPORT
Prerequisite: permission of instructor. A relevant problem in chemical engineering is assigned. Required course for students electing non-thesis option. Final report must be approved by the Chemical Engineering Advisory Committee. 2 credits

469 MASTER'S THESIS
(May be repeated to a maximum of six credits.) For properly qualified candidate for master's degree. Supervised original research in specific area of chemical engineering selected on basis of availability of staff and facilities. 1-6 credits

701 ADVANCED TRANSPORT PHENOMENA
Prerequisite: 600. Advanced theory of transport phenomena such as applied tensor analysis, constitutive equations, multidimensional reactive transport and multiphase transport. Illustrative practical examples presented. 3 credits

702 MULTIPHASE TRANSPORT PHENOMENA
Prerequisite: 600. General transport theorem, kinematics, Cauchy's lemma, and the jump boundary conditions are developed followed by the theory of volume averaging. The single phase transport equations are then formulated to obtain the multiphase equations of change. The technique for using these equations and their practical significance is also covered. 3 credits

706 ADVANCED REACTION ENGINEERING
Prerequisite: 600. Kinetics of homogeneous systems, steady and unsteady state mathematical modeling of chemical reactors, fluidization and additional topics drawn from current literature. 3 credits

711 ADVANCED CHEMICAL ENGINEERING THERMODYNAMICS
Prerequisite: 600. Advanced topics in thermodynamics, including phase and reaction equilibrium at high pressures, phase equilibrium for multiphase systems, reaction equilibria in multiphase systems, thermodynamics of surfaces, thermodynamics of systems under stress, non-equilibrium thermodynamics and current topics from literature. 3 credits

715 MOMENTUM TRANSPORT
Prerequisite: 600. Discussion of potential flow, boundary layer formation and turbulent flow phenomena for Newtonian fluids. 3 credits

716 NON-NEWTONIAN FLUID MECHANICS
Prerequisite: 600. Tensor and curvilinear coordinates. Newtonian viscometrics. Development of non-Newtonian constitutive equations. Special and general flows of various constitutive models. 3 credits

720 ENERGY TRANSPORT
Prerequisite: 600. Conduction, natural and forced convection, and radiation heat transfer starting with equations of continuity, motion and energy. 3 credits

721 TOPICS IN ENERGY TRANSPORT
Prerequisite: 720. Advanced analytical and graphical methods for solving complex heat transfer problems found in chemical engineering. 3 credits

725 MASS TRANSFER
Prerequisite: 600. Theory of mass transfer with applications to absorption, adsorption, distillation and heterogeneous catalysis. 3 credits

731 PROCESS CONTROL
Prerequisite: 630. Introduction to modern control theory of chemical processes including cascade control, multivariable control and data sampled control. 3 credits

736 POLYMER ENGINEERING TOPICS
Prerequisite: permission. Selected topics of current interest in polymer engineering, such as modeling of reactors or processes, multiphase materials, multiphase flow, artificial fiber engineering, etc. 3 credits

738 CHEMICAL PROCESSING OF ADVANCED MATERIALS
Prerequisite: 600. Advanced topics such as carbon nanotubes, optical materials, sensors, catalysis, application of reaction engineering to sol-gel processing, ceramic processing, modified chemical vapor deposition. 3 credits

742 ADVANCED CATALYST DESIGN
Prerequisite: 605. Development of catalysis and its application to the design of practical catalytic systems. 3 credits

746 ADVANCED POLLUTION CONTROL
Prerequisite: Permission. Analysis of current environmental research in analytical instrumentation, air and water pollution control, hazardous waste treatment, and nuclear waste disposal. 3 credits

758 BIOCATALYSIS AND BIOTRANFORMATIONS
Prerequisite: 350-40/501 or permission of instructor. Focuses include: (a) high performance enzymes/cellulase; chemical modification, recombinant technology, evolution, extremophiles; (b) applications of enzymes in biosynthesis, bioprocessing, biosensing, and biomedication. 3 credits

761 CHEMICAL ENGINEERING SEMINAR
1 credit
(May be repeated for a maximum of six credits.) Prerequisite: Permission of instructor. Advanced level coverage of specialized chemical engineering topics. Intended for students seeking a Ph.D. in engineering. 1 credit

794 ADVANCED RESEARCH TECHNIQUES FOR ENGINEERING
(May be repeated for a total of six credits.) Prerequisite: permission of department chair. Advanced projects, readings, and advanced projects in various areas of chemical engineering. Intended for student seeking Ph.D. in engineering. 3 credits

886 PRELIMINARY RESEARCH
(May be repeated for a total of 15 credits.) Prerequisite: approval of dissertation director. Preliminary investigations prior to the submission of a dissertation proposal to the Interdisciplinary Doctoral Committee. 3 credits

898 DOCTORAL DISSERTATION
(May be repeated for a total of six credits.) Prerequisite: acceptance of research proposal by the interdisciplinary Doctoral Committee and approval of the dissertation director. Original research by the doctoral student. 3 credits

CIVIL ENGINEERING

514 DESIGN OF Earth STRUCTURES
Prerequisite: Permission. Design of earth structures; dams, highway fills, embankments, etc. Emphasis on construction techniques, quality control, embankment analysis, instrumentation, foundation soil stabilization, seepage analysis and control. Design problems. Graduate students will perform more advanced analysis and design. 3 credits

518 SOIL AND ROCK EXPLORATION
Prerequisite: Permission. Site exploration criteria and planning. Conventional boring, sampling and in-situ testing methods. Theory and application of geophysics and geophysical methods including seismic, electrical resistivity, gravity, magnetic and radiometric measurements. Sampling and photo interpretation. 3 credits

523 CHEMISTRY FOR ENVIRONMENTAL ENGINEERS
3 credits (2 lecture – 1 lab) Prerequisites: One year of college chemistry. General, physical, organic, biochemistry, equilibrium, and colloid chemistry concepts applied to environmental engineering. Concepts are used in water and wastewater laboratory. 3 credits

526 ENVIRONMENTAL ENGINEERING DESIGN
3 credits Analysis and simulation of the physical and biochemical processes affecting stream quality. Development of management strategies based upon the application of water quality modeling techniques to environmental systems. 3 credits

528 HAZARDOUS AND SOLID WASTES
Prerequisite: Permission of instructor. Hazardous and solid waste quantities, properties and sources are presented. Handling, processing, storage and disposal methods are discussed with non-technical constraints outlined. 3 credits

543 APPLIED HYDRAULICS
Review of design principles; urban hydraulics, steam channel mechanics, sedimentation, coastal engineering. 3 credits

551 COMPUTER METHODS OF STRUCTURAL ANALYSIS
3 credits Structural analysis using microcomputers; finite element software, interactive graphics; beam stiffness concepts and matrix formulation; simple and complex structural systems modeling; vibration analysis. 3 credits

552 OPTIMUM STRUCTURAL DESIGN
Basic concepts in structural optimization. Mathematical programming methods including unconstrained minimization, multidimensional minimization and constrained minimization. 3 credits

554 ADVANCED MECHANICS OF MATERIALS
3 credits Three-dimensional state of stress and strain analysis. Unsymmetrical bending of straight and curved members with shear deformation. Beams on elastic foundations. Saint Venant's torsional problems. Inelastic analysis of bending and torsional members. Introduction to energy method. Instability behavior of prismatic members. 3 credits

557 TRANSPORTATION PLANNING
3 credits Theory and techniques for development, analysis and evaluation of transportation system plans. Emphasis on understanding and using tools and professional methods available to solve transportation planning problems, especially in urban areas. 3 credits

564 HIGHWAY DESIGN
Study of modern design of geometrical and pavement features of highways. Design problem and computer use. Graduate students will produce a more complete design. 3 credits

565 EARTHWORK ENGINEERING
3 credits Principles of highway design, construction, earthwork computations, and advanced topics. 3 credits

566 TRAFFIC ENGINEERING
Vehicle and urban travel characteristics, traffic flow theory, traffic studies, accident analysis and safety, traffic control and marking, traffic signal planning, traffic control and transportation administration. 3 credits

567 ADVANCED HIGHWAY DESIGN
Prerequisite: 564. AutoCAD, or permission. Computer-aided geometric design of highways, including survey data input, digital terrain modeling, cross-section templates, horizontal and vertical roadway design, earthwork computations, and advanced topics. 3 credits

568 HIGHWAY MATERIALS
2 credits Prerequisites: Permission. Properties of aggregates, manufacture and properties of portland cement concrete, properties of asphalt materials, design and testing of hot mix asphalt pavement mixes and of surface treatments. Laboratory preparation of specimens and determination of properties. Graduate student requirement: Graduate students will be required to perform an additional eight-hour asphalt laboratory (Abson recovery of asphalt from solution) to prepare a paper on a highway materials topic. 2 credits

574 UNDERGROUND CONSTRUCTION
2 credits Description of practices and techniques of underground construction. Selection of proper method for individual job. Design of underground openings, support systems and linings. 2 credits

580 DYNAMICS OF STRUCTURES DESIGN
2 credits Approximate, rigorous dynamic analysis of one, two, multiple and infinite degrees of freedom structural systems. Elasticplastic, plastic analysis. Equivalent systems, dynamic hinge concept. Modal analysis. Transfer matrices. Fourier, Laplace transforms. 2 credits

585 STRUCTURAL STABILITY
Prerequisite: 554 or equivalent. Buckling of bars, beam-columns and frames. Lateral buckling of beams. Double and tangent modulus theories. Energy methods. Compressed rings and curved bars. Torsional buckling. Buckling of plates and shells. 2 credits

566 ENERGY MATERIALS AND ELASTICITY
3 credits Practical elements of plasticity and complementary strain energy. Von Mises work and Castigliano's theorems. Variational methods. Applications. Formulation of boundary value problems in elasticity. Selection of topics in energy methods and elasticity. 3 credits

570 PRESTRESSED CONCRETE
3 credits Basic concepts. Design of double-reinforced girder; shear; development length; column, piles; design of highway bridge girder; pretensioned, post-tensioned; continuous girders; corbels; volume-change forces; connections. 3 credits
608 MULTISTORY BUILDING DESIGN
3 credits
Floor systems; staggered truss system; braced frame design; unbraced frame design; drift in frame; monoslope (tube and partial tube) systems; earthquake design; fire protection. Analysis by STRUDL.

609 FINITE ELEMENT ANALYSIS I
3 credits
Prerequisite: 545 or equivalent. Introduction to finite element methods as applied to structural mechanics. Such areas as plane, axisymmetric, three-dimensional stress analysis; conduction, fluid mechanics; transient problems an material nonlinear.

610 COMPOSITE MATERIALS IN CIVIL INFRASTRUCTURE
3 credits
Prerequisite: 545 or equivalent. Constituent materials; manufacturing processes; panel prep; properties; selection and optimization; capabilities and limitations of composite beams; columns; and applications to highway bridges; composites in concrete and wood structures.

611 FUNDAMENTALS OF SOIL BEHAVIOR
2 credits
In-depth study of structure and fundamental physico-chemical and mechanical properties of engineering soils viewed as particulate matter.

612 ADVANCED SOIL MECHANICS
3 credits
Study of mechanics of behavior of soil as continuum. Principles of stress, strain, deformation, consolidation, permeability, stability, and pore pressure as applied to mechanical behavior of soils.

613 ADVANCED GEOTECHNICAL ENGINEERING
3 credits
Prerequisites: 518, 621. Theory and practice of static and dynamic in situ and laboratory soil testing. Testing procedures, applicability, limitations. General evaluation of geotechnical parameters for routine and special site conditions. One lecture, two laboratories per week.

614 FOUNDATION ENGINEERING I
3 credits
Prerequisites: Permission. Foundation bearing capacity and settlement analysis. Design of shallow and deep foundation systems. Pile driving and load test procedures and analysis. Theory and design of earth retaining structures including retaining walls, tiebacks and bulkheads.

615 FOUNDATION ENGINEERING II
3 credits
Prerequisite: 614 or permission. Soil-structure interaction theory and applications to under ground structures including conduits, tunnels and shafts. Advanced foundation construction methods and problems including deviating, soil stabilization, underpinning and caisson. Slope stability analysis.

616 SOIL IMPROVEMENT
3 credits
Advanced topics in soil stabilization, compression with vertical drains, blasting, vibrocompaction, injection and grouting, thermal methods, electro-osmosis, soil reinforcement, case studies.

617 NUMERICAL METHODS IN GEOTECHNICAL ENGINEERING
3 credits

618 ROCK MECHANICS
3 credits
Prerequisite: 545 or permission. Mechanical nature of rocks; linear elasticity and application to rock problems; inelastic behavior of rocks; time dependence and effects of pore pressure, experimental characterization of rock properties; failure theory and crack propagation.

620 SANITARY ENGINEERING PROBLEMS
2 credits
Analysis and solution of laboratory and field problems and theory of sanitation engineering problems involving water pollution, stream regeneration, special industrial wastes, detergents and the like.

621 ENVIRONMENTAL ENGINEERING PRINCIPLES
4 credits
Corequisite: 523. Provide the basic principles of chemical reaction engineering, microbiology, environmental regulations, and contaminant migration required for the understanding and solving environmental problems.

622 AQUATIC CHEMISTRY
3 credits
Prerequisites: Permission. Quantitative treatment of variables that govern the chemistry of aquatic systems. Emphasis on carbonate in open-closed systems, metal complexation and solubility, and oxidation-reduction reactions.

623 PHYSICAL/CHEMICAL TREATMENT PROCESSES
3 credits
Prerequisite: 543. Application of physical chemistry to treatment processes. Techniques of characterization, treatment methods and analysis of effluents, surface analysis, etc.

624 BIOLOGICAL WASTEWATER TREATMENT PROCESSES
3 credits
Prerequisite or corequisite: 621. Theory, current research associated with physical-chemical processes, the impact on design-coagulation/flocculation, sedimentation, filtration, absorption and their applications.

625 WATER TREATMENT PLANT DESIGN
3 credits
Prerequisite: 623. Design of water treatment plants for potable, industrial and commercial uses. Development of water sources, treatment methods and financing used to design basic practical methods in the treatment of costs.

626 WASTEWATER TREATMENT PLANT DESIGN
3 credits
Prerequisites: 624. Application of theory and fundamentals to design of wastewater treatment plants. System design methods used for biological and chemical stabilization of wastewater to meet water quality criteria. Economic analyses made to determine best practical designs for wastewater and stormwater treatment processes.

627 ENVIRONMENTAL OPERATIONS LABORATORY
2 credits
Prerequisite: Permission of instructor. Conduction of laboratory experiments related to the design and operation of wastewater and stormwater treatment processes. Experimental design, data collection, analysis and report preparation.

628 ADVANCED CHEMICAL OXIDATION PROCESS
3 credits
Prerequisite: 625. Qualitative and quantitative treatment of variables that govern process chemistry and kinetics in water. Emphasis on ozone, hydrogen peroxide, and ultra-violet (UV) light.

629 SOLID REMEDIATION
3 credits
Prerequisite: 621 or permission. Provide a thorough understanding of site characterization, traditional soil remediation technologies, as well as present new and emerging remediation technologies.

635 AIR POLLUTION CONTROL
2 credits
Prerequisite: 621 or permission. Introduction to air pollution control philosophies, approaches, methods, and standards. Also contains an in-depth overview/design approach for the control of particular matter, SOx and NOx.

640 ADVANCED FLUID MECHANICS
3 credits

642 OPEN CHANNEL HYDRAULICS
3 credits
Application of basic principles of fluid mechanics to flow in open channels. Criteria for analysis of uniform, gradually varied and rapidly varied flows. Study of movement and transportation of sediments. Design problems utilizing numerical techniques.

645 APPLIED HYDROLOGY
3 credits
Discussion of water cycle such as precipitation, evaporation, stream flows, floods, infiltration. Methods of analysis and their application to studies of water demand, storage, transportation including mathematical modeling of urban runoff and statistical hydrology.

646 COASTAL ENGINEERING
3 credits
Characteristics of linear and nonlinear wave theories. Interaction of structures, waves, and design analysis of shore, offshore structures. Movement, transportation of sediments in lake shore areas.

663 ADVANCED TRANSPORTATION ENGINEERING I
3 credits
Prerequisite: Permission. Highway and parking facility design, transportation planning, highway capacity estimates, signal systems and optimization, incident detection and management, freeway ramp metering, and highway traffic safety.

664 ADVANCED TRANSPORTATION ENGINEERING II
3 credits
Prerequisite: Permission. Highway and parking facility design, transportation planning, highway capacity estimates, signal systems and optimization, incident detection and management, freeway ramp metering, and highway traffic safety.

665 TRAFFIC DETECTION AND DATA ANALYSIS
3 credits
Prerequisite: Permission. Theory and application of pressure tubes, loop detectors, and imaging sensors, microwave, infrared, ultrasonic, laser detectors, parameter estimation, reliability, and data mining and fusion.

681 ADVANCED ENGINEERING MATERIALS
3 credits
Selected topics on principles governing mechanical behavior of materials with respect to elastic, plastic, and creep response of stress rupture, low and high cycle thermal fatigue. Failure theories and fracture phenomena in brittle and ductile materials. Crack propagation and life prediction of engineering materials.

682 ELASTICITY
3 credits

683 PLASTICITY
3 credits

684 ADVANCED REINFORCED CONCRETE DESIGN
3 credits

685 ADVANCED STEEL DESIGN
3 credits

686 EXPERIMENTAL METHODS IN STRUCTURAL MECHANICS
3 credits
Prerequisite: 682. Electrohydraulic closed-loop test systems. Methods for specimen mounting. Static, dynamic and measurement techniques in room and elevated temperatures. Design and control of experiments investigating deformation and failure under complex stress states.

687 LIMIT ANALYSIS IN STRUCTURAL ENGINEERING
3 credits
Prerequisites: 654; 652. Fundamental theorems of limit analysis. The lower bound and upper bound theorems. Application to frames, plates and plane stress and plane strain problems. Design considerations. Mathematical programming and computer implementation.

688 ADVANCED SEMINAR IN CIVIL ENGINEERING
1-3 credits
Prerequisites: Permission. Advanced projects, reading, studies, or experimental in various areas of civil engineering.

697 ENGINEERING REPORT
2 credits
Prerequisite: Permission. Advisor problem in engineering for students electing the non-thesis option. The final engineering report must be approved by the advisor and the advisory committee.

698 MASTER'S RESEARCH
1-6 credits
Prerequisite: Permission. Advisor. (May be repeated.) Research on a suitable topic in civil engineering culminating in a master's thesis.

699 MASTER'S THESIS
1-6 credits
Prerequisite: Permission. Research and thesis on some suitable topic in civil engineering as approved by department. Defense of thesis is by final examination.

701 EARTHQUAKE ENGINEERING I
3 credits

702 PLATES AND SHEELS
3 credits

703 VISCOELASTICITY AND VISCOPLASTICITY
3 credits

704 FINITE ELEMENT ANALYSIS II
3 credits

710 ADVANCED COMPOSITE MECHANICS
3 credits
Prerequisites: 603, Analysis of short-fiber composites and statistical behavior, bending, buckling and vibration of laminated plates and shells. Advanced topics involving stress concentration, fracture mechanics, fatigue, toughness, nonlinear and viscoelastic stress-strain formulas, solutions of nonlinear problems.

712 DYNAMIC PLASTICITY
3 credits
Prerequisites: 683 or 703. Impulsive and transient loading of structural elements (beams, plates, shells, etc.) in which inelastic deformation occurs. Topics include: longitudinal and transverse impact, shock waves in solids. High-rate forming, blast loading, plate perforation, shock waves in solids.

717 SOIL DYNAMICS
3 credits
Prerequisite: 614 or permission. Vibration and wave propagation theory relating to soils, soil structures and foundations. Dynamic behavior of soils. Design of foundations for dynamic loading impact, pulsating and blast loads.

731 BIOREMEDIATION
3 credits
Prerequisites: Permission 611 or permission. Provide the fundamentals required for understanding and successfully implementing the biodegradation of hazardous compounds coupled with the design and operational techniques of bioremediation systems.

742 RIVER HYDROLOGY
2 credits
Discussion of parameters determining permeability of various soils. Analytical, numerical and experimental methods to determine two- or three-dimensional movement of groundwater. Unconfined flows.
ELECTRICAL ENGINEERING 4400:

541 DIGITAL COMMUNICATION 3 credits
Introduction to digital communication theory and systems; coding of analog and digital information; digital modulation techniques. Introduction to information theory.

545 WIRELESS COMMUNICATIONS 3 credits
Prerequisite: 621. Theoretical analysis of wireless communication systems, wireless propagation, multiple access, modulation, demodulation, multipath channel characterization, diversity, and fade-limited PCS service standards.

548 OPTICAL COMMUNICATION NETWORKS 3 credits
Optical waveguides and optical integrated components, optical transmitters and receivers, optical communication network design.

552 CONTROL THEORY 3 credits

555 MICROWAVES 4 credits
Dynamic fields, Maxwell's equation and wave equations. Field analysis of wave guides, dielectric slabs, and waveguide components.

561 OPTICAL ELECTRONICS AND PHOTONIC DEVICES 3 credits
Lightwave engineering, photonic principles and optical electronic device technology.

572 CONTROL SYSTEMS II 3 credits
State variable analysis and design of control systems. Discrete systems, analysis, digital computer control. Experiments include hybrid, AC control system, digital computer control.

583 POWER ELECTRONICS I 3 credits
Elements of power electronics circuits. Rectifiers, converters, inverters analysis and design.

584 POWER ELECTRONICS LABORATORY AND DESIGN PROJECT 3 credits
Prerequisite: 583 or equivalent. Experiments on different types of power electronic converters: AC/DC, DC/DC, DC/AC, and AC/AC. Design project to include design, simulation, building, and testing of a power electronic circuit.

585 ELECTRIC MOTOR DRIVES 3 credits
Application of electric machines, choice of motor for particular drive. Application of power semiconductor circuits in electric machinery.

589 DESIGN OF ELECTRIC AND HYBRID VEHICLES 3 credits
Principles of electric and hybrid vehicles. Characterizations of electric machines, engines, transmission, batteries, fuel cell systems, ultracapacitors. Vehicle control strategies, communication networks, and overall system integration.

598 SPECIAL TOPICS: ELECTRICAL ENGINEERING 3 credits
(May be taken more than once.) Prerequisite: permission of department chair. Special topics in electrical engineering.

641 RANDOM SIGNAL ANALYSIS 3 credits
Analysis, interpretation and smoothing of engineered data through application of statistical and probability methods.

642 IMAGING SYSTEM ENGINEERING 3 credits
Prerequisite: 561. Engineering principles of imaging systems, analysis, design, and evaluation of imaging components, texture techniques, and applications.

643 INFORMATION THEORY AND CODING 3 credits
Prerequisite: 641 or permission. Sources, channels, entropy, mutual information, source coding theorem; channel coding theorem. Channel coding theorem for waveform channels. Introduction to rate-distortion theory.

646 DIGITAL SIGNAL PROCESSING 3 credits
Relations between continuous and discrete time Fourier expansions. Sampling, aliasing, sampling conversion. Operator concepts in signal processing, allpass systems, FFT, digital filter design.

647 DIGITAL SPECTRAL ANALYSIS AND SIGNAL MODELING 3 credits
Prerequisites: 646 or permission of instructor. Methods and theory of spectral analysis and signal modeling are investigated in detail. Applications of theory include speech processing, audio, biomedical systems, digital communications.

648 OPTICAL NETWORK ARCHITECTURE 3 credits
Prerequisite: 548. Principles of optical network architecture, analysis, design, control, and fault management.

650 ELECTROMAGNETIC THEORY I 2 credits

651 ELECTROMAGNETIC THEORY II 3 credits
Prerequisite: 650 or permission of the course instructor. Scattering: TEM modes, guided wave theory; transmission lines, closed-boundary guides and cavities, modal orthogonality and completeness, Green's function, excitation and coupling, open-boundary waveguides.

652 COMPUTATIONAL ELECTROMAGNETICS 3 credits
Prerequisites: 650 or permission of course instructor. Analytical and numerical techniques for electromagnetic fields, conformal mapping, finite difference method, finite element method, and the method of moments.

655 ADVANCED ANTENNA THEORY AND DESIGN 3 credits
Prerequisite: 553 or equivalent. Basic properties and recent advances of microstrip antennas. Analysis and design of reflector antennas. Analysis and synthesis of linear and planar antenna arrays.

666 SIMULATION OF NANOSCALE AND MOLECULAR-SCALE SYSTEMS 3 credits
The course describes modern simulation techniques for the analysis of nanoscale phenomena: molecular dynamics, fast algorithms for multistate and multiparticle systems, ab initio methods in electronic structure calculation.

673 NONLINEAR CONTROL 3 credits
Corequisites: 674 or instructor permission. Designed to provide students with qualitative insights into nonlinear systems as well as techniques for controlling such systems. Topics include describing functions, Popov and circle criteria, jump resonances, subharmonics, phase plane, conservative systems, and bifurcation of attractors, and routes to chaos.

674 CONTROL SYSTEM THEORY 3 credits
Advance modern control theory for linear systems. Controllability, observability, minimum realizations of multivariable systems, stability, state variable feedback, estimation, and an introduction to optimal control.

677 OPTIMAL CONTROL I 3 credits
Prerequisite: 674. Formulation of optimization problem; application of variational calculus, maximum principle and optimality principle to control problems. Computational techniques in optimization.

680 DYNAMICS AND CONTROL OF POWER ELECTRONIC CIRCUITS 3 credits
Prerequisites: 583 or equivalent. Stabilization and sampled-data models for rectifiers and DC/DC converters. Small-signal large-signal models of the cyclic steady-state. Feedback control using classical and modern approaches.

682 DYNAMICS OF ELECTRICAL MACHINES 3 credits
Prerequisites: graduate status in Electrical Engineering. Voltage and mechanical differential equations of electric machines, analytical and numerical methods for solution of a system of nonlinear differential equations.

687 POWER ELECTRONICS II 3 credits
Prerequisite: 583 or equivalent. Effects of the nonlinearities of the power circuit components, magnetic, base and gate drive thyristor control circuits, heat transfer and thermal issues. Analysis and design of advanced power circuits.

688 CONTROL OF ELECTRICAL MACHINES 3 credits
Prerequisite: graduate student in Electrical Engineering. Elements of control circuits for electric drives, techniques for torque/speed control of electric machines.

690 POWER SEMICONDUCTOR DEVICES 3 credits
Prerequisite: Permission of instructor. Elements of Electrical Engineering. Structure and physics of power semiconductor devices: diodes, Bipolar junction transistors, MOSFETS, Thyristors, Power MOS-Bipolar devices (IGT/MTCT). Emphasis on the issues that characterize these devices from the power power semiconductor devices.

693 SPECIAL PROBLEMS 1-3 credits
(May be taken more than once.) Prerequisite: permission of department chair. For a qualified graduate student. Supervised or independent research in major field of training or experience. Credits dependent upon nature and extent of project.

698 MASTER'S RESEARCH 1-6 credits
Prerequisite: Permission of advisor. (May be repeated.) Research on a suitable topic in electrical engineering culminating in a master's thesis.

699 MASTER'S THESIS 1-6 credits
Prerequisite: permission of department chair. Research and thesis on some suitable topic in electrical engineering.

733 TOPICS IN ELECTROMAGNETICS 3 credits
Prerequisite: 661. Introduction to advanced techniques in fields. Topics include application of Green's function techniques and related boundary value problems.

772 MODEL REDUCTION TECHNIQUES FOR CONTROL SYSTEMS 3 credits
Prerequisite: 674 or permission of the instructor. Classical, modern, and optimal techniques for computing reduced order models of linear, nonlinear, and infinite dimensional systems. Minimal realizations of multivariable systems are also considered.

774 ADVANCED LINEAR CONTROL SYSTEMS 3 credits
Prerequisite: 674 or 677 and a course in Real Analysis or equivalent. Covers topics related to the control of robust control systems. The synthesis of controllers which yield stable closed-loop systems will be considered. The H-infinity criterion for controller design is included. Special emphasis will be given to the robust stabilization problem and the disturbance attenuation problem.

775 ROBUST CONTROL 3 credits
Prerequisite: 674. Input-output and state-space characterizations of robust control systems, and design techniques based on the algebraic Riccati equation. Decentralized and reliable control design methodologies.

777 OPTIMAL CONTROL II 3 credits
Prerequisites: 671 and 673 Advanced state-feedback optimal control. Output-feedback issues, including loop transfer recovery, optimal observer design, reduced-order controllers, frequency weight- ing, and decentralized control.

788 ADAPTIVE CONTROL 3 credits
Prerequisite: 671 or permission of instructor. This course will provide the advanced graduate student with the techniques required for the control of time-varying nonlinear and stochastic systems. Topics include minimum prediction error control, least squares estimation and certainty equivalent adaptive control. Kalman filtering, minimum variance control, LQG control and robust adaptive control.

797 ADVANCED TOPICS IN CONTROL 3 credits
Prerequisite: 776. Discussions of recent advances in control systems.

799 ADVANCED SEMINAR 1-3 credits
(May be taken more than once.) Prerequisite: permission of department chair. Advanced level coverage of specialized topics. For student seeking Ph.D. in engineering.

898 PRELIMINARY RESEARCH 1-5 credits
(May be repeated.) Prerequisite: approval of dissertation director. Preliminary investigations prior to submission of a dissertation proposal to the Interdisciplinary Doctoral Committee.

899 DOCTORAL DISSERTATION 1-5 credits
(May be repeated.) Prerequisite: acceptance of research proposal by the Interdisciplinary Doctoral Committee and approval of the dissertation director. Original research by the doctoral student.

COMPUTER ENGINEERING 4450:

510 EMBEDDED SCIENTIFIC COMPUTING 3 credits
Prerequisite: Permission by instructor. Organization of scientific and engineering problems for computer solutions. Analysis of error and convergence properties of algorithms.

515 SYSTEM SIMULATION 3 credits
Computer simulation of dynamic systems. Discrete system stability, linear multistep and Runge-Kutta methods, nonlinear systems, stiff systems, distributed systems and real-time computing.

520 OBJECT ORIENTED DESIGN 3 credits
Investigation of object-oriented design paradigm and the design implementation with the object-oriented programming language C++. (May be repeated.)

521 COMPUTER SYSTEM DESIGN 3 credits
Design of advanced processors at the microarchitecture level. Pipelining, Superscalar, vector, and VLIW architectures. Instruction-level parallelism. Compiler support, Multiprocessor architectures.

522 EMBEDDED SYSTEMS INTERFACING 3 credits
Prerequisite: Permission by instructor. Microcontroller structures and embedded peripherals. Interfaces to physical environments. Software access to peripherals, timers, ADCs and DACs. Synchronous and asynchronous communications. Interrupts. Real-time operating systems.
Graduate Courses 121

523 PROGRAMMABLE LOGIC 3 credits
Electronic circuitry considerations in logic circuits, methods of sequential, threshold logic and neural networks, development of computer arithmetic elements; memory, storage devices.

527 COMPUTER NETWORKS 3 credits
Network architecture and protocol layering. Network design principles, communication protocols, and performance measures. Socket programming, routing, error detection and correction, access control, multimedia networking.

540 DIGITAL SIGNAL PROCESSING 3 credits
Signal sampling and reconstruction; data-converters models. Unilateral and bilateral z-transforms. Discrete Fourier Transform (DFT); Fast Fourier Transform (FFT). Digital filter structures and design methods.

562 ANALOG INTEGRATED CIRCUIT DESIGN 3 credits
CMOS circuit design and layout; amplifiers, current mirrors, and comparators; current, voltage, and bandgap references; switched capacitor circuits. Frequency and noise analysis techniques.

567 VLSI CIRCUITS AND SYSTEMS 3 credits
Graduate level introduction to VLSI design. MOSFET structures, design rules, and fabrication. Static, dynamic CMOS, PLAs, ROMs, and RAMs. Layout methodologies and tools. System architecture.

589 SPECIAL TOPICS: COMPUTER ENGINEERING 1-3 credits
(May be taken more than once) Prerequisite: permission of department chair. Special topics in computer engineering.

606 COMPUTER ARCHITECTURE 3 credits

607 PARALLEL COMPUTER ARCHITECTURE 3 credits
Prerequisite: 606 or equivalent. This course provides an introduction to parallel computer architectures and parallel processing based on a single instruction, message-passing, or shared memory.

620 REALTIME SCHEDULING 3 credits
Theory of fixed priority scheduling for real-time systems. Aperiodic, Periodic, and Sporadic task scheduling.

642 ADVANCED KNOWLEDGE ENGINEERING 3 credits
Prerequisite: Permission of instructor. Advanced study of knowledge acquisition and expert system project management.

663 VLSI DESIGN AND AUTOMATION 3 credits

693 VLSI DESIGN PROBLEMS 1-3 credits
(May be taken more than once) Prerequisite: permission of department chair. For a qualified graduate student. Supervised research or investigation in student's major field. Credit depends upon nature and extent of project.

794 ADVANCED SEMINAR 1-3 credits
(May be taken more than once) Prerequisite: permission of department chair. Advanced level coverage of various topics. Intended for student seeking Ph.D. in engineering.

MECHANICAL ENGINEERING 4600:

500 THERMAL SYSTEM COMPONENTS 3 credits
Performance analysis and design of basic components of thermal energy conversion and conversion systems. Components studied include heat exchangers, pumps, compressors, turbines and expansion engines.

501 HEATING AND AIR CONDITIONING 3 credits
Thermodynamics of gas mixtures. Design and selection of air conditioning equipment. Control of gas mixtures, heating, cooling, and humidity.

510 COMPRESSIBLE FLUID MECHANICS 3 credits
Subsonic and supersonic flow in nozzles, diffusers, and ducts. One-dimensional reactive gas dynamics. Prandtl-Meyer theory. Applications to design and analysis of compressors, turbines and propulsion devices.

520 FUNDAMENTALS OF FLIGHT 3 credits
Introduction to basic aerodynamics, airplane performance, stability and control, astronautics and propulsion. Design considerations are emphasized.

522 EXPERIMENTAL FLIGHT 3 credits
Introduction to aerodynamics. Introduction of aerodynamic concepts, conformal transformations, theory of thin airfoils, 2-dimensional airfoil theory, wings of finite span, lifting line theories, lumped vortex, vortex-lattice, and panel methods.

524 INTRODUCTION TO AEROSPACE PROPULSION 3 credits
Introduction to propulsion systems currently used in aerospace fields; propulsion principles for turbojet, chemical rockets, and electrical rocket propulsion.

525 ENERGY CONVERSION 3 credits
Renewable energy sources, internal combustion engines, cycle analysis, modern conversion devices.

532 HEAT TRANSFER PROCESSES 3 credits
Analysis, design of extended surfaces. Natural convection and mixed convection, combined modes of heat transfer with phase changes.

538 EXPERIMENTAL STRESS ANALYSIS I 3 credits
Experimental methods of determining stress or strain: brittle lacquer, strain gages, photoelastic experiments.

539 ENGINEERING ANALYSIS 3 credits
Introduction to finite element methods as applied to various topologies of elements. Advanced numerical methods include plane, axisymmetric, and 3-D stress analysis; conduction; fluid mechanics; transient problems and geometric and material nonlinearity.

540 VIBRATIONAL DYNAMICS 3 credits

550 THERMODYNAMICS 3 credits
Extension and generalization of basic laws of thermodynamics with application to a variety of physical and biological systems. Introduction to irreversible thermodynamics, the third law and statistical thermodynamics.

558 FINITE ELEMENT ANALYSIS I 3 credits
Prerequisite: 502. Development of finite element method as applied to various topics such as membrane mechanics. Advanced covered include plane, axisymmetric and 3-D stress analysis; conduction; fluid mechanics; transient problems and geometric and material nonlinearity.

569 DYNAMICS OF VISCOUS FLOW I 3 credits
Introduction and solution of linear and non-linear governing laminar viscous flow. Applications include unsteady flows, slow viscous flows, parallel flows, lubrication theory and laminar boundary layers.

570 COMPUTATIONAL FLUID DYNAMICS I 3 credits
Prerequisite: 558 or instructor. Study of numerical methods in fluids; numerical errors and stability, finite difference, numerical convection terms, Poisson equations, boundary conditions, turbulence, spectral and finite element techniques.

575 CONDUCTION HEAT TRANSFER 3 credits
Study of one-, two- and three-dimensional heat conduction. Development of analytical techniques for analysis and design.

576 CONVECTION HEAT TRANSFER 3 credits
Heat transfer from laminar, turbulent, external, internal flows. Convective heat transfer at high velocities. Heat transfer to liquid metals, high Prandtl number fluids.

577 RADIATION HEAT TRANSFER 3 credits
Study of governing radiation laws. Black and real systems, geometric factors, gray enclosures, non-gray systems, gaseous radiation, radiation equipment.

578 BOILING HEAT TRANSFER AND TWO-PHASE FLOW 3 credits
Current techniques to determine heat transfer and pressure drop in components such as boilers, heat exchangers, and steam generators, with boiling. Boiling mechanism, slip ratio, critical heat flux and instabilities in boiling flow systems.

583 EXPERIMENTAL STRESS ANALYSIS II 3 credits
Prerequisite: 522. Dynamic strain gage methods, transducer design, Moire fringe techniques and topics in photoelasticity.

584 INTRODUCTION TO TIE MECHANICS 3 credits
Prerequisite: permission. Topics include tire as vehicle component, tire traction and wear, laminated structures, tire stress and strains and advanced tire models.

590 CONTINUUM MECHANICS 3 credits
Analysis of stress and deformation at a point. Derivation of fundamental field equations of fluid and solid mechanics by applying basic laws of dynamics, conservation of mass and energy. Development of constitutive laws.

591 APPLIED STRESS ANALYSIS I 3 credits
Prerequisite: 582. Continuation of 582 with specific application to solid mechanics. Development of energy theorems due to Reissner, Washizu and generalized Hamilton's principle. Solutions to static and dynamic problems.

592 FUNDAMENTAL OF FRACTURE MECHANICS 3 credits

593 ANALYSIS OF MECHANICAL COMPONENTS 3 credits
Prerequisites: 522. Theories of failure and plastic flow. Fatigue, creep analysis and introduction to fracture mechanics.

594 FATIGUE OF ENGINEERING MATERIALS 3 credits
Prerequisite: 591 or permission of instructor. Static and cyclic and fatigue behaviors; fatigue testing; comparison of static and fatigue tests; fracture toughness and/or fatigue crack propagation; crack initiation; crack propagation; crack closure; environmental effects.

595 ADVANCED MATERIALS AND MANUFACTURING PROCESSES 3 credits
Manufacturing processes for advanced materials; classification; technological aspects of bulk deformation, casting, forming, machining, molding, powder metallurgy, rapid solidification; economic aspects; technical feasibility.

596 MECHANICAL BEHAVIOR OF MATERIALS 3 credits
Mechanical behavior of engineering materials; metallurgy of deformation; dislocation effects and deformation; strengthening mechanisms; thermomechanical processing; mechanical testing.

597 NONLINEAR ENGINEERING PROBLEMS 3 credits

598 VIBRATIONS OF DISCRETE SYSTEMS 3 credits
Prerequisite: 531 or equivalent. Study of vibrations of multidegree of freedom systems including free and forced vibrations, damped and transient response, normal mode vibrations and matrix iteration techniques, application to seismic design and shock design.
3 credits
The geometry of constrained motion. Analysis of relative plane motion using vectors and the
directrix. Curve theory. Synthesis of linkages and gearing. Introduction to computer-
aided-design.

Reliability in Design
Prerequisite: 3470-561. The reliability determination of mechanical components and systems and
their design. Reliability design, reliability determination, normal and lognormal theories.
Weibull theory, life spectrum analysis, renewal theory and confidence limits.

Computerized Modal Analysis of Structures
Prerequisites: 630 or equivalent. Theory and measurement techniques, digital signal-
rtal processing concepts, structural dynamics theory, modal parameter estimation with “hands-
on” experience in the applications of modal measurement techniques in vibration analysis.

Advanced Dynamics of Rotating Machinery
Prerequisites: 530 or equivalent. Dynamic modeling and simulation of complex rotorbearing
ystems. Steady state, transient and stability analysis with inertia, gyroscopic, imbalance, rotor
bow, disk-skew and impeller interaction effects.

Stress Waves in Solids and Liquids
Prerequisite: 531 or equivalent. The wave equation. Propagation of elastic-plastic stress waves
through solids. Transient, reflection, absorption and diffraction phenomena. Low and high
impact dynamic effects. Numerical simulation techniques.

System Analysis and Control Design
Uniform methods of modeling and response analysis, controllability and observability. Stability
theory and analysis of linear and nonlinear engineering processes. Design of feedback con-
trols for optimum performance for multivariable real-time control application.

Process Identification and Computer Control
Prerequisite: Permission by instructor. Obtaining mathematical models of processes from
noisy observations. Methods of digital control design. Case studies on computer control of
selected processes.

Expert Systems in Controls and Manufacturing
Prerequisite: 540 or equivalent by permission. Expert system methodologies for process
control. Development of integrable flexible manufacturing and robotics.

Neural and Fuzzy Control Systems
Prerequisite: 540 or permission of instructor. Analysis and design of intelligent control sys-
tems. Neural networks, fuzzy logic and experts systems for process identification and controller design. Ap-
lications and cases studies in industry.

Triboology
Fundamentals of friction, lubrication and wear treated; includes basic theory, advanced topics
in tribology and wear, boundary lubrication, fluid film lubrication and bearings, rolling element bearings,
ball bearings, linear bearings, and hydrodynamic stability.

Micro- and Nano-fluid Dynamics
Prerequisite: 611 or permission of instructor. This course includes fundamentals of the ana-
lytical and numerical solutions of the problems pertinent to fluid mechanics on nano-
and micro-scales. Applications will include micro-engines, MEMS, micro-filters, and synthesis of
nano-materials.

Behavior of Nanostructured Materials and Composites
An overview of Lattice Dislocation Theory, Nanostructured Materials: Processing and Proper-
ties, Grain Boundaries, Nanoindentation, Electron Microscopy, Atomic Force Microscopy, Carbon
Nanotubes, Polymer and Bio-MEMS.

Engineering Analysis
Prerequisite: B.S. in engineering. Study of analysis techniques as applied to specific engi-
nereering problems. Applications include beam deflections, acoustics, heat conduction
and hydrodynamic stability.

Failure Analysis of Mechanical Systems
Prerequisite: 625 or permission of instructor. This course emphasizes engineering techniques for predict-
ing, yieldling, buckling, fracture and fatigue of mechanical systems. Students will be taught how to develop failure theory with practice by examining case studies of structural and mechanical fail-
ures and will obtain practical experience in modeling real complex systems in an end-of-term
project.

Microscale Heat and Mass Transfer
Prerequisites: 608 and 615 or permission. Kinetics theory, classical and quantum statistics, structural
properties, solids, fluids and solids, free electrons in metals, Boltzman transport in
hyperbolic heat conduction, thermal conductivity of thin films, laser massing processes.

Web-based Solid Modeling and E-Manufacturing
Prerequisites: 650 or equivalent. A collaborative design web-based solid modeling library, feature-based manufacturing analysis, and process planning using cross-platform interoperable tools including Java, XML, optimized product realiza-
tion.

Fundamentals of Crystallization and Solidification
Prerequisites: 608 or equivalent, or permission. Fundamental theories of crystalline nucleation and
growth, metastable polymorphism, morphological stability, microstructure formation, and microsegregation.
Applications in casting, welding, laser processing, and single crystal growth.

Integrated Flexible Cellular Manufacturing System-
Analysis and Design
Prerequisite: Permission of instructor. The analysis of integrated computerized manufacturing systems, design of automated manufacturing components and simulation of flexible cellular manufacturing systems.

Fundamentals and Applications of Micro Electro Mechanical Systems
Fundamentals of MEMS based sensors and actuators, MEMS materials, bulk and surface
micromachining and MEMS device testing. Application in optics, automotive, and biomedical
systems.

Design of Microsystems and Nano Devices
Design principles of various micro and nano sensors and actuators, micromachined devices, micro-
structure analysis and simulation, microstructure process design rule. Applications in MOEMS, lab-on-a-chip devices, BioMEMS and MEMS.

Measurements Methods and Experimental Error in Thermophysical Properties
The book will include elements of experimental error analysis, optics, and surface
measuring, principles of testing, methods and devices for fluid flow quantization and
measurement techniques. Laboratory work in micromachined devices.

Deformation and Failure of Polymers and Soft Materials
This course introduces the concepts of deformation, fracture, and failure analyses of engi-
nereering polymers, soft, and biological materials.

Special Topics in Mechanical Engineering
Prerequisite: Permission by instructor. For qualified candidate for graduate degree. Supervised
research in the student’s major field of training or experience. Credit depends upon nature and
extent of project as determined by advisor and department chair.

Engineering Report
Prerequisite: Permission of advisor. A relevant problem in mechanical engineering for students
electing the non-thesis option. The final engineering report must be approved by the advisor
and the advisory committee.

Master's Research
Prerequisite: Permission of advisor. (May be repeated) Research on a suitable topic in
mechanical engineering culminating in a master’s thesis.

Master's Thesis
Prerequisite: permission of advisor. (May be repeated) Supervised research in a specific area
of mechanical engineering.

Finite Element Analysis I
Prerequisites: 609, 4300-702. Curved, plate, shell, brick elements; quasi-analytical elements.
Quasi-analytical Formulas. Substitution for static and dynamic analysis. Solution algorithms
for linear and nonlinear static and dynamic analysis. Computer program formulation. Review
of large-scale production programs.

Finite Element Analysis II
Prerequisites: 704. Static and dynamic contact problems. Tire mechanics. Fracture mechanics.
Plasticity problems involving small and large deflections. Shake down analysis. General
constitutive models for composite media, thermoelasticity, fluid turbulence. Fluid-solid inter-
action analysis.

Dynamics of Viscous Flow II
Prerequisites: 620. Introduction to turbulence. Turbulence modeling and turbulent boundary lay-

Computational Fluid Dynamics II
Prerequisite: 611. Introduction to CFD. Development of advanced computational tech-
niques for convection-dominated flows. Higher order explicit and implicit schemes including
nonoscillatory front-capturing methods applied to benchmark problems.

Hydrodynamic Stability
Prerequisites: 650, 620 or permission. Stability Concepts, Stability of Benard convection,
Rayleigh-Taylor flow, parallel shear layers, boundary layers, asymptotic solution of Orr-Sommer-
feld equation, nonlinear solution.

Advanced Heat Transfer
Prerequisites: 615, 616. Topics include nonhomogeneous or nonlinear boundary value prob-
lems of heat conduction, heat transfer with melting, solidification and ablation, heat transfer in
porous systems and hydrodynamically and thermally unsteady convection.

Applied Stress Analysis II
Prerequisite: 620. Continuation of 623. Development of approximate solution techniques
including finite elements, method of weighted residuals (Rayleigh-Ritz, Galerkin, Trefftz, collo-
derates, least squares, etc.) and finite differences.

Nonlinear Continuum Mechanics
Prerequisite: 540. Development of stress, strain, constitutive equations, strain energy
functions. Solution of finite deformation problems in hypoelasticity, coupled thermoelas-
ticity and viscoelasticity.

Vibrations of Continuous Systems
Prerequisite: 630. Continuation of 630. Analysis of continuous vibrating systems, using sepa-
rations of variables, energy, variational, Rayleigh-Ritz and other approximate techniques. Con-
cepts and solutions of integral equations as applied to continuous systems.

Advanced Modal Analysis of Structures
Prerequisite: 633 or equivalent. Structural excitation techniques. Modal parameter estimation.
System modification; mass/stiffness/damping matrices substructuring. Prediction and evalua-
tion of structural modified dynamic characteristic.

Optimization Theory and Applications
Prerequisite: Permission by instructor. Theory of optimization in engineering systems, devel-
opment and method of solution optimization problems for physical processes, large systems. Use
of dynamic programming, operational research methods of system optimization, control.

Advanced Methods in Engineering Analysis
Applications of finite difference and finite element methods, variational methods, integral
methods and similarity transforms to engineering problems in heat transfers, fluid mechanics and
vibrations.

Advanced Seminar in Mechanical Engineering
May be repeated for a total of nine credits (May be repeated for a total of nine credits) Prerequisite: permission of department chair. Advanced projects and studies on areas of mechanical engineering. Intended for stu-
dent seeking Ph. D. in engineering degree.

Preliminary Research
Prerequisite: permission of instructor. Preliminary investigations prior to the submis-
sion of a dissertation proposal to the Interdisciplinary Doctoral Committee.

Doctoral Dissertation
May be taken more than once. Prerequisite: acceptance of research proposal by the Inter-
disciplinary Doctoral Committee and approval by the dissertation director. Original research by the doctoral student.

Biomedical Engineering 4800:

Physiological Control Systems
The basic techniques employed in control theory, systems analysis, and model identification
as they apply to physiological systems.

Design of Medical Imaging Systems
Prerequisites: Permission of instructor. Physical principles and engineering design of medical
imaging systems, with emphasis on digital radiography, computed tomography, nuclear med-
icine, ultrasound and magnetic resonance.

Image Science
Prerequisites: Permission of instructor. Principles of image science, image performance
parameters and image assessment techniques of medical imaging systems, with emphasis
on digital radiography, tomographic imaging, ultrasound and magnetic resonance.

Physics of Medical Imaging
Principles of medical imaging modalities with emphasis on the properties, general
mechanisms and interaction of radiation with matter, physics of the image forma-
tion.

Experimental Techniques in Biomechanics
Principles of experimental mechanics and measurement devices commonly used for
physical and biological mechanics studies. Laboratories for demonstration and hands-on experi-
ences.

Human Factors Engineering
Reliability and human error, human capabilities and limitations, crew protection, display sys-
tems, controls and controlling actions, interface design principles, risk management, safety
and accident prevention.
600 BIOMEDICAL ENGINEERING COLLOQUIUM 1 credit
(May be repeated for a maximum of 16 credits) The Biomedical Engineering Colloquium is a seminar designed to introduce students to current topics in biomedical engineering research, design, and business.

601 BIOMEDICAL INSTRUMENTATION I 4 credits
Prerequisites: 300:561, 562. Clinical instrumentation to measure and display physiologic and anatomic parameters. Basic concepts of instrumentation including design criteria and operational analysis. Practical experience gained through the use of instrumented mammalian models.

611 BIOMETRY 3 credits
Statistics and experimental design topics for the biomedical and biomedically oriented disciplines including: hypothesis testing and estimation, ANOVA, probit analysis and nonparametric statistics.

620 NEURAL NETWORKS 3 credits
Examination of highly parallel, distributed architectures for computing that are, to varying degrees, modeled from structures observed in biological nervous systems. After an overview of how real neurons operate, the course will examine both lassal and modern neural network constructs. Computations will be made with emphasis on traditional neural machines and applications for which neural networks seem most promising will be examined.

621 SENSORY SYSTEMS ANALYSIS 3 credits
Prerequisites: Permission of instructor. A study of various sensory modalities from a systems-engineering perspective. Techniques from linear and nonlinear systems analysis are applied to aspects of human, touch, hearing, and vision in co-workers. Comparisons are made with artificial simulations of these senses.

623 PROCESSING OF BIOMEDICAL SIGNALS 3 credits
Prerequisites: graduate standing in the College of Engineering and 611 or equivalent. Concepts for the analysis of biological continuous signals and point processes including application and principal component analysis, histograms, and correlograms and data displays.

624 IMAGE PROCESSING FOR BIOMEDICAL DATA 3 credits
Image encoding, quantization, and transformation. Enhancements including smoothing and sharpening. Restoration using inverse and Wiener filters. Edge detection and thresholding with region growing for segmentation.

627 DRUGS AND GENE DELIVERY SYSTEMS 3 credits
This course will examine technological innovations for the delivery of drugs and genes. Methods of introducing drugs and genes into the body, modeling drug transport, and metabolic responses of cells and organs will be analyzed.

630 BIOMEDICAL COMPUTING 3 credits
Computer applications in health care, clinical laboratories, AVHT, medical records, direct order entry, CAD conversion, patient monitoring, peripherals and interfaces, diagnostic algorithms, automated EEG, ECG systems.

632 DIAGNOSTIC IMAGING TECHNIQUES 3 credits
Advanced diagnostic imaging techniques as applied to Digital Radiography, Computed Tomography (CT), nuclear medicine, ultrasound imaging, magnetic resonance imaging (MRI), microscopes and optical confocal microscopy.

635 BIOMEDICAL OPTICS 3 credits
Application of lightwave principles and optical fibers on the engineering design and development of instrumentation, techniques, and applications for medical diagnostic imaging, and treatment of disease.

636 MEDICAL IMAGING DEVICES 3 credits
Imaging modalities including radiation, magnetic resonance, and sound. The formation of images. Specific devices including computer tomography, magnetic resonance, ultrasound, gamma cameras and PET.

638 BIOMEDICAL NANOTECHNOLOGY 3 credits
Prerequisite: permission of instructor. Engineering principles of nanotechnology as applied to the design of instrumentation, systems and techniques, aimed to explore biomolecules and biotissues at the microscopic level, at one billionth of a meter.

650 SPINE MECHANICS 3 credits

651 SOFT CONNECTIVE TISSUE BIOMECANICS 3 credits
Prerequisites: 300:561 or equivalent; or permission. Physical properties and functional biomechanics of cartilage, tendons, ligaments, cornea, meniscus, and nasal cartilage. The mechanics of joint repair, replacement for accelerated repair and improved function.

652 JOINT CONNECTIVE TISSUE BIOMECANICS 3 credits
Prerequisites: 300:561 or equivalent; or permission. Physical properties and functional biomechanics of bone. The biology and mechanics of fracture and fracture healing. Mechanics of external and internal fixators. Total joint implants and reconstruction techniques.

655 MUSCLE MECHANICS AND OPTIMIZATION 3 credits
Prerequisite: Graduate standing in the College of Engineering or by permission. Human body joint kinetics, muscle mechanics and modeling. The principles of optimization as applied to muscle forces, along with muscle anatomy and physiology.

656 MECHANICS IN PHYSIOLOGY AND MEDICINE 3 credits
Biomechanics of microstructure, finite deformation theory, soft tissue mechanics, mechanics of blood and lymph circulation, kinematics and kinetics of orthopedic joints. Clinical applications.

657 KINETICS OF THE HUMAN BODY 3 credits
Prerequisites: Graduate standing in the College of Engineering or by permission. Analytical methods used to model and quantify human body motion. Three-dimensional kinematics, joint coordinate systems, functional anatomy, segment center of mass and joint centers.

659 CARDIOVASCULAR DYNAMICS 3 credits
Analysis of blood pumping action, pressure/flow waveform transmission and blood rheology. Use of modeling and direct measurement techniques. Clinical implications of disease.

661 CARDIOVASCULAR DIAGNOSTIC TECHNIQUES 3 credits
Prerequisites: 300:561, 562 or equivalent. Cardiovascular disease conditions, instrumentation and techniques (both invasive and noninvasive) used for diagnosis. Direct interaction with active clinical laboratories.

662 CARDIOVASCULAR THERAPEUTIC TECHNIQUES 3 credits
Prerequisite: 651. Cardiovascular therapeutic devices and procedures for correction of congenital defects, valve disease, heart and arterial bypass grafting and less-invasive catheter-based procedures.

663 TRANSPORT PHENOMENA IN BIOLOGY AND MEDICINE 3 credits
Biokinetics, cardiac output and mass transport, compartment modeling, and mass transfer in physiological systems and artificial kidney and lung devices. Design optimization. Analysis of human thermal system.

665 REHABILITATION ENGINEERING 3 credits
Prerequisites: graduate standing in engineering, mathematics, or science; or permission of the instructor. Devices for rehabilitation, interfacing the motor and/or sensory impaired, quantitative assessment techniques, prosthetics and orthotics, biosensors, biomechanics, emerging technologies.

670 BIOMATERIALS AND LABORATORY 4 credits
Corequisite: Biometrics Laboratory. Material uses in biological applications. Effect of physiological environment and sterilization on materials. Controlled and uncontrolled degradation. Effect of materials on soft tissue, hard tissue and blood. Laboratory experiments using materials designed for biomedical use and demonstrations of biological/materials interactions.

671 ADVANCED BIOMATERIALS 3 credits
Prerequisite: 660 or permission of instructor. The objective of this course is to provide the fundamental understanding of the host responses when exposed to various implantable devices and biomaterials. Methods for testing biocompatibility will be analyzed.

672 ARTIFICIAL ORGANS 3 credits
Prerequisite: graduate standing in the College of Engineering or permission of instructor. Study of the rationale for the engineering and clinical aspects required for the design and validation of artificial organs, with emphasis on artificial heart and artificial kidney.

675 BIOMATERIALS AND TISSUE ENGINEERING METHODS 3 credits
Prerequisites: 660 or permission of instructor. Corequisites: 661 or permission of instructor. This course is designed to equip students with knowledge and skills to evaluate biomaterials and to design scaffolds for tissue engineering. Analytical techniques include principles of microscopy, cell culture techniques, and biocompatibility testing.

676 MATHEMATICAL MODELING IN BIOLOGY AND MEDICINE 3 credits
Prerequisites: graduate standing in engineering, mathematics, or physics; or permission of instructor. Modeling of pharmacokinetic, cardiovascular, neuromuscular, and immune systems, and artificial organ interactions. Deterministic and stochastic approaches.

678 MEDICAL DEVICES AND ARTIFICIAL ORGANS 3 credits
Prerequisites: graduate standing in engineering, mathematics, or science; or permission of instructor. Design and implementation of design of medical devices and artificial organs, requirements, safety considera-tions, tissue constraints, optimization techniques, government regulations, and legal liability.

679 SPECIAL TOPICS IN BIOMEDICAL ENGINEERING 1-4 credits
May be repeated. Specialized areas of study as defined by the instructor.

688 MASTER’S RESEARCH 1-6 credits
Prerequisite: Permission of advisor. (May be repeated.) Research on a suitable topic in biomedical engineering culminating in a master’s thesis.

699 MASTER’S THESIS 1-6 credits
Prerequisite: permission of advisor. (May be repeated.) Supervised research in the specific area of biomedical engineering.

730 FABRICATION AND DESIGN OF MICROSENSORS 3 credits
Sensors and transducers, fabrication, and design of microsensors for diagnostic, monitoring, and analytical biomedical applications.

735 IMAGE DETECTORS AND SENSORS 3 credits
Introduction to detector course to develop a deep knowledge of detector and sensing systems for Medical Imaging and Diagnostic Applications.

888 PRELIMINARY RESEARCH 1-8 credits
May be repeated. Preliminary research necessary in order to proceed to a dissertation proposal to the Interdisciplinary Doctoral Committee.

899 DOCTORAL DISSERTATION 1-8 credits
Prerequisite: acceptance of research proposal by the Interdisciplinary Doctoral Committee and approval of the dissertation director. (May be repeated) Original research by the doctoral student.

Graduate Courses 123

Education

EDUCATIONAL FOUNDATIONS AND LEADERSHIP 5100:

520 INTRODUCTION TO INSTRUCTIONAL COMPUTING 3 credits
Prepares the student in the use of instructional technologies in educational and business settings. Segments of the course are offered in an online format.

590, 12 WORKSHOP 1-3 credits
Individual work under staff guidance on curriculum problems, utilization of community resources, planning of curriculum units. Delivered in face-to-face and fully online format.

600 PHILOSOPHIES OF EDUCATION 3 credits
Examination of basic philosophical problems underlying broad educational questions that confront society. Intended to provide a foundation for understanding of questions of modern society and education.

602 COMPARATIVE AND INTERNATIONAL EDUCATION 3 credits
Comparative study of selected national school systems with reference to forces that shape their characteristics. Different theoretical approaches used in study of comparative education also investigated.

604 TOPICAL SEMINAR IN THE CULTURAL FOUNDATIONS OF EDUCATION 3 credits
Issues and subjects related to study of educational institutions, theories and/or ideas. Different topics will be offered from section to section. Delivered in face-to-face and fully online formats.

610 INTRODUCTION TO STATISTICS IN HUMAN SERVICES 3 credits
Students will learn about how to apply basic statistical concepts and use statistics to answer core questions in the human service professions.

620 PSYCHOLOGY OF INSTRUCTION FOR TEACHING AND LEARNING 3 credits
Current issues and research in the areas of cognition and learning, development, and motivation that underpin approaches to teaching in any context.

624 SEMINAR: EDUCATIONAL PSYCHOLOGY 3 credits
In-depth study of research in selected areas of learning, development, evaluation, and motivation. Offered in face-to-face and online formats.

699 FUNDAMENTAL IN E-LEARNING 1 credit
The nature, purpose, history and philosophy of e-learning will be explored through examination of associated trends and issues. Establishment of a learning community will be addressed in the face-to-face course component. E-learning course/certificate overviews will be discussed.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisites/Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>630</td>
<td>TOPICAL SEMINAR IN COMPUTER-BASED EDUCATION</td>
<td>3 credits</td>
<td>May be repeated for a total of six credits. Advanced topics related to development, implementation, research, and publication in CBE. Student involvement emphasized, required. Knowledge of programming language recommended.</td>
</tr>
<tr>
<td>637</td>
<td>PHILOSOPHIES OF EDUCATIONAL TECHNOLOGY</td>
<td>3 credits</td>
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<tr>
<td>640</td>
<td>TECHNIQUES OF RESEARCH</td>
<td>3 credits</td>
<td>Research methods and techniques commonly used in education and behavioral sciences; preparation of research reports. Includes library, historical, survey and experimental research and data analysis. Delivered in face-to-face web-enhanced format and fully online format.</td>
</tr>
<tr>
<td>642</td>
<td>INTRODUCTION TO CLASSROOM ASSESSMENT FOR TEACHERS</td>
<td>3 credits</td>
<td>The focus of this class is on the practical classroom assessment skills future and practicing teachers need for decision-making about student learning.</td>
</tr>
<tr>
<td>646</td>
<td>MULTICULTURAL COUNSELING</td>
<td>3 credits</td>
<td>Prerequisites: 5600 or permission of instructor. An examination of multicultural counseling theory and research necessary to work with culturally diverse people.</td>
</tr>
<tr>
<td>648</td>
<td>INDIVIDUAL AND FAMILY DEVELOPMENT ACROSS THE LIFESPAN</td>
<td>3 credits</td>
<td>An exploration of individual and family development. Emphasis will be placed on understanding the relationship between the individual and higher family.</td>
</tr>
<tr>
<td>650</td>
<td>IMPLEMENTING ASSESSMENT IN THE CLASSROOM</td>
<td>3 credits</td>
<td>Prerequisite: 642. Students in this class will develop, implement, and evaluate a comprehensive nine-week assessment plan.</td>
</tr>
<tr>
<td>651</td>
<td>DATA-DRIVEN DECISION MAKING FOR EDUCATORS</td>
<td>3 credits</td>
<td>The purpose of this course is to facilitate the understanding and utilization of data to identify classroom/school improvement needs and make informed decisions in effecting change.</td>
</tr>
<tr>
<td>652</td>
<td>INTRODUCTION TO EDUCATIONAL EVALUATION</td>
<td>3 credits</td>
<td>Introduction to core concepts of educational evaluation including the purpose, process, standards, and models of evaluation. Students will develop skills in interpreting and critiquing evaluation reports.</td>
</tr>
<tr>
<td>653</td>
<td>PRACTICAL APPLICATIONS OF EDUCATIONAL EVALUATION</td>
<td>3 credits</td>
<td>Prerequisite: 652. This course is designed as the second part of educational evaluation with a focus on the application of evaluation concepts and theory to real-world situations.</td>
</tr>
<tr>
<td>654</td>
<td>MASTER'S PROJECT IN ASSESSMENT AND EVALUATION: PART 1</td>
<td>3 credits</td>
<td>Prerequisite: permission of advisor. This capstone course is the culminating learning experience for the master's degree in Assessment and Evaluation. Students complete a comprehensive evaluation project of their choice.</td>
</tr>
<tr>
<td>655</td>
<td>MASTER'S PROJECT IN ASSESSMENT AND EVALUATION: PART 2</td>
<td>3 credits</td>
<td>Prerequisite: 654. Permission of advisor. This is the culminating learning experience for the master's degree in Assessment and Evaluation. Students complete a comprehensive evaluation project of their choice.</td>
</tr>
<tr>
<td>656</td>
<td>FIELD EXPERIENCE: MASTER'S</td>
<td>3 credits</td>
<td>Prerequisites: permission of department chair and instructor. Area determined in accordance with student's program and professional goals.</td>
</tr>
<tr>
<td>657</td>
<td>INDEPENDENT STUDY</td>
<td>3 credits</td>
<td>(May be repeated for a total of six credits) Prerequisites: permission of department chair and instructor. Specific area of study determined in accordance with student's program and professional goals.</td>
</tr>
<tr>
<td>658</td>
<td>MASTER'S PROBLEM</td>
<td>2-4 credits</td>
<td>Prerequisite: permission of advisor. In-depth study of a research problem in education. Student must be able to demonstrate critical and analytical skills in dealing with problems in educational foundations.</td>
</tr>
<tr>
<td>659</td>
<td>MASTER'S THESIS</td>
<td>4-6 credits</td>
<td>Prerequisites: permission of department chair and instructor. In-depth study of research problem within humanistic and behavior foundation.</td>
</tr>
<tr>
<td>701</td>
<td>HISTORY OF EDUCATION IN AMERICAN SOCIETY</td>
<td>3 credits</td>
<td>Historical development of education in American social order, with special emphasis on social, economic, and philosophical factors.</td>
</tr>
<tr>
<td>703</td>
<td>SEMINAR: HISTORY AND PHILOSOPHY OF HIGHER EDUCATION</td>
<td>3 credits</td>
<td>Prerequisite: 600 or equivalent. History and philosophy related to genesis and development of higher education in the modern world, with special emphasis given to higher education in United States. Delivered in face-to-face web-enhanced format and fully online format.</td>
</tr>
<tr>
<td>705</td>
<td>SEMINAR: SOCIAL/PHILOSOPHICAL FOUNDATIONS OF EDUCATION</td>
<td>3 credits</td>
<td>(May be repeated for a total of six credits) Prerequisites: Admission to a College of Education doctoral program or permission. Inquiry into selected ideological social, economic, and philosophical foundations of educational development in United States and other countries.</td>
</tr>
<tr>
<td>710</td>
<td>ADULT LEARNING, DEVELOPMENT, AND MOTIVATION</td>
<td>3 credits</td>
<td>Prerequisites: Admission to a College of Education doctoral program or permission. Emergence of educational theories related to adult learning. Stage theories of adult cognitive, conceptual and moral development; life cycle development; adult-like transitions.</td>
</tr>
<tr>
<td>712</td>
<td>LEARNING PROCESSES</td>
<td>3 credits</td>
<td>Prerequisites: Admission to a College of Education doctoral program or permission. Study of principles underlying classroom learning processes with particular emphasis on teaching as means of modifying pupil behavior; cognitive, motor, social and affective.</td>
</tr>
<tr>
<td>713</td>
<td>TEACHER BEHAVIOR AND INSTRUCTION</td>
<td>3 credits</td>
<td>Prerequisite: 600. Intensive survey of theoretical and empirical literature involving teacher and conceptions of instruction. A student reports on theory, empirical research and applications in areas of individual interest.</td>
</tr>
<tr>
<td>740</td>
<td>RESEARCH DESIGN</td>
<td>3 credits</td>
<td>Prerequisites: Admission to a College of Education doctoral program or permission. Study of principles underlying classroom learning processes with particular emphasis on teaching as means of modifying pupil behavior; cognitive, motor, social and affective.</td>
</tr>
<tr>
<td>742</td>
<td>DATA COLLECTION METHODS</td>
<td>3 credits</td>
<td>Prerequisites: 600 or 740. Admission to a College of Education doctoral program or permission. Emphasis on selecting, developing, and administering common data collection methods in education and social science research including standardized tests, inventories, questionnaires, focus groups, and content analysis.</td>
</tr>
<tr>
<td>743</td>
<td>STATISTICS IN EDUCATION</td>
<td>3 credits</td>
<td>Prerequisites: Admission to a College of Education doctoral program or permission. Statistical methods and techniques used in educational measurement and educational research. Emphasis on hypothesis testing.</td>
</tr>
<tr>
<td>745</td>
<td>QUALITATIVE METHODS I</td>
<td>3 credits</td>
<td>Provides an overview of theory about and hands-on experience with methods of qualitative research. Techniques of participant-observation, interviewing, and document collection will be covered.</td>
</tr>
<tr>
<td>746</td>
<td>QUALITATIVE METHODS II</td>
<td>3 credits</td>
<td>Prerequisite: 744. Provides more advanced experience with theory and methods of qualitative research. Data collection and analysis will focus on students' research interests and possible dissertation topics.</td>
</tr>
<tr>
<td>798</td>
<td>RESEARCH PROJECT IN SPECIAL ARENAS</td>
<td>1-3 credits</td>
<td>Prerequisites: permission of department chair and instructor. Critical and in-depth study of specific problem in educational foundations.</td>
</tr>
<tr>
<td>801</td>
<td>RESEARCH SEMINAR</td>
<td>3 credits</td>
<td>Prerequisites: Admission to a College of Education doctoral program or permission. Intensive study of research methods applicable to education. Emphasis on developing a dissertation proposal.</td>
</tr>
<tr>
<td>897</td>
<td>INDEPENDENT STUDY</td>
<td>1-4 credits</td>
<td>(May be repeated for a total of eight credits.) Prerequisites: permission of department chair and instructor. Specific area of inquiry within humanistic and behavioral foundations of education determined in advance by student and faculty advisor.</td>
</tr>
<tr>
<td>590</td>
<td>WORKSHOP</td>
<td>1-3 credits</td>
<td>Individual work under staff guidance on curriculum problems, utilization of community resources, planning of curriculum units. Delivered in face-to-face, web-enhanced format, and fully online format.</td>
</tr>
<tr>
<td>591</td>
<td>WORKSHOP</td>
<td>1-3 credits</td>
<td>Individual work under staff guidance on curriculum problems, utilization of community resources, planning of curriculum units. Delivered in face-to-face, web-enhanced format, and fully online format.</td>
</tr>
<tr>
<td>601</td>
<td>ORGANIZATIONAL LEADERSHIP</td>
<td>3 credits</td>
<td>Prerequisite: 5100:640. A perspective of educational leadership and the context in which it operates, with emphasis on the environmental and professional roles and relationships involved. Field based research required.</td>
</tr>
<tr>
<td>602</td>
<td>MANAGEMENT OF PHYSICAL RESOURCES</td>
<td>3 credits</td>
<td>A comprehensive overview of the physical plant, student discipline, and school security.</td>
</tr>
<tr>
<td>603</td>
<td>MANAGEMENT OF HUMAN RESOURCES</td>
<td>3 credits</td>
<td>An orientation to the management of human resources.</td>
</tr>
<tr>
<td>604</td>
<td>SCHOOL CONTEXTS AND COMMUNITY INVOLVEMENT</td>
<td>3 credits</td>
<td>Prerequisites: 601 and 5100:640. This course is for graduate students interested in P12 school leadership. It focuses on understanding strategies for collaborating with members of the school community.</td>
</tr>
<tr>
<td>606</td>
<td>EVALUATION IN EDUCATIONAL ORGANIZATIONS</td>
<td>3 credits</td>
<td>Prerequisites: 601 and 5100:640. An examination of the general concepts, models, practical applications and considerations involved in the evaluation of educational organizations.</td>
</tr>
</tbody>
</table>
607 SCHOOL LAW
Prerequisites: 5100:601 and 5100:640. An examination of the legal principles underlying edu-
cational law as reflected in statutory provisions, court decisions and adminis-
trative orders. Field based research required. Course also available fully online.

608 SCHOOL FINANCE AND ECONOMIC
A study of financial operations of school systems, including taxes, other sources of revenue,
and cost-benefit analyses and the effects of economic factors.

609 PRINCIPLES OF CURRICULUM DEVELOPMENT
Prerequisites: 601 and 5100:640. This course is intended to help the student develop the per-
formance competencies necessary to engage in curriculum decision making.

610 SUPERVISION OF INSTRUCTION
Prerequisites: 601 and 5100:640. An introduction to the school function that improves instruc-
tional effectiveness and provides support for the direct assistance of the classroom teacher.

611 STUDENT SERVICES AND INTERAGENCY COLLABORATION
Prerequisites: 601 and 5100:640. Overview of pupil services including analysis of the nature
and development of each component and program and discussion of current issues and
trends. Field based research required.

612 STUDENT SERVICES AND DISABILITY LAW
Prerequisites: 601 and 5100:640. The course examines the statutory and case law and reg-
ulations for working with students with disabilities. Laws are reviewed, policy implications identified, and
civilly compliant practices proposed.

620 SCHOOL CULTURE AND GOVERNANCE
An examination of leadership as it relates to the development and maintenance of a school cli-
ic and culture conducive to teaching and learning.

695.6 PRINCIPAL INTERNSHIP
3 credits each
Students are required to successfully complete a two-semester internship in a school district
chosen by the student and his/her advisor.

697 INDEPENDENT STUDY
3 credits each (May be repeated for a total of six credits.)
Prerequisites: permission of advisor and supervisor of the independent study. Area of study
determined by student's needs. (May be repeated for a total of six credits.)

704 ADVANCED ORGANIZATIONAL LEADERSHIP
3 credits
Prerequisites: Admission to a College of Education doctoral program or permission. Study of
leadership, nursing, and strengths and weaknesses of common methods of administration. Practical
means by which overcoming bureaucratic weaknesses of bureaucracies are offset or
reduced. Field based research required. (May be repeated for a total of six credits.)

705 DECISION MAKING IN EDUCATIONAL ADMINISTRATION
3 credits
Prerequisites: Admission to a College of Education doctoral program or permission. Decision
making as an essential role of the principal viewed as a central function of the educational administra-
tor with an understanding of the theory, research and practice of decision making.

707 THE SUPERINTENDENCY
3 credits
An examination of the superintendent's role and an evaluation of the strategies for dealing
with the major relational and functional aspects of the superintendency.

708 ECONOMICS IN EDUCATION
3 credits
Prerequisites: Admission to a College of Education doctoral program or permission. Issues
related to the changing means and ends of private schooling and higher education insti-
tutions as they relate to an urban environment.

709 ADVANCED PRINCIPLES OF CURRICULUM DEVELOPMENT
3 credits
A survey of the role of curriculum development with an emphasis on the performance compe-
tencies needed to engage in curriculum planning and decision making.

710 ADVANCED SCHOOL LAW
3 credits
Prerequisites: Admission to a College of Education doctoral program or permission. An in-
depth study of the law as it pertains to the function and role of the administrator as instruc-
tional leader; discipline; building, facilities, and auxiliary services manager.

716 ADVANCED EDUCATION OF EDUCATIONAL ORGANIZATIONS
3 credits
Prerequisites: Admission to a College of Education doctoral program or permission. An evalua-
tion course to help educational leaders plan and assess educational priorities and outcomes.

720 TOPICAL SEMINAR
3 credits (May be repeated with a change of topic for a total of six credits.)
Prerequisites: Admission to a College of Education doctoral program or permission. An intensive examination of a particular
area of Educational Leadership.

721 RESIDENCY SEMINAR
3 credits
Prerequisites: Admission to a College of Education doctoral program or permission. Focus on
recent developments in administration and educational administration theory.

722 PUBLIC AND MEDIA RELATIONS IN EDUCATIONAL ORGANIZATIONS
3 credits
Prerequisites: Admission to a College of Education doctoral program or permission. A course
in educational public relations intended to help educational leaders facilitate the development
of common perceptions about school issues with multiple constituencies.

740 THEORIES OF EDUCATIONAL SUPERVISION
3 credits
Extends 610, including supervisory models, staff development, and the organizational envi-
noment. Emphasis on the impact on the climate for effective supervision.

745 SEMINAR: URBAN EDUCATIONAL ISSUES
3 credits
Prerequisites: Admission to a College of Education doctoral program or permission. A study
of the interactions between educational organizations and their social contexts, particularly as
they relate to educational change. Research project required.

746 POLITICS OF EDUCATION
3 credits
Prerequisites: Admission to a College of Education doctoral program or permission. Empha-
sis given to recent efforts to bring about reform at all levels of the educational enterprise and
to conceptual perspectives and research findings.

799.6 INTERNSHIP IN EDUCATIONAL ADMINISTRATION
15 credits
Prerequisites: Admission to a College of Education doctoral program or permission. Students
are required to successfully complete a two-semester internship in a school district chosen by
his/her advisor.

896.6 DOCTORAL INTERNSHIP
16 credits
Candidates for the doctoral degree in educational administration must prepare and complete
a research proposal that includes research questions, a literature review, and a research
design. They must collect, analyze, and interpret data.

897 INDEPENDENT STUDY
3 credits
Prerequisites: permission of advisor. In-depth study of a research problem in education. Stu-
dent must be able to demonstrate critical and analytical skills in dealing with a problem in edu-
cation. (May be repeated for a total of six credits.)

899 DOCTORAL DISSERTATION
120 credits
Prerequisites: permission of advisor. Specific research problem that requires student to apply
research skills and techniques to the problem being studied.

HIGHER EDUCATION ADMINISTRATION
5190:

515 ADMINISTRATION IN HIGHER EDUCATION
3 credits
In-depth study of administrative roles, functions, knowledge and skills requirements, and
administrative behavior. Trends in administrative theory and application also explored. Deliv-
ered in face-to-face web-enhanced format and fully online format.

521 LAW AND HIGHER EDUCATION
3 credits
Legal aspects of higher education, sources of law and authority presented; impact on, inter-
action with, and implications of the administration of higher education discussed. Delivered in
face-to-face web-enhanced format and fully online format.

525 TOPICAL SEMINAR: HIGHER EDUCATION
3 credits
(May be repeated.) Topical study in a variety of areas related to public and/or private higher
education institutions, organizations, management and development. Selected areas explored.
Delivered in face-to-face web-enhanced format and fully online format.

526 STUDENT SERVICES AND HIGHER EDUCATION
3 credits
Examination of issues related to the delivery and evaluation of student services in higher edu-
cation. Delivered in face-to-face web enhanced format and fully online format.

527 THE AMERICAN COLLEGE STUDENT
3 credits
Introduction to the sociopolitical and cultural concerns concerning the impact of college on student
and student development theory. Delivered in face-to-face web enhanced format and fully online format.

530 HIGHER EDUCATION CURRICULUM AND PROGRAM PLANNING
3 credits
From its European roots into American higher education, and up to current levels, including
curriculum design, theories and practices of curricular change and innovation are also explored. Deliv-
ered in face-to-face web-enhanced format and fully online format.

590 WORKSHOP
1-3 credits
(May be repeated for a total of six credits.) Emphasizing the development and demonstration of
leader behavior appropriate for the college or university setting. Delivered in face-to-face
web-enhanced format and fully online format.

600 ADVANCED ADMINISTRATIVE COLLOQUIUM IN HIGHER EDUCATION
3 credits
Prerequisite: permission. (To be taken during students’ final semester of coursework) Examina-
tion of a wide range of high level administrative perspectives and issues, including those that pose
particular concern to students. Capstone experience for students poised for program com-
pletion. Delivered in face-to-face web-enhanced format and fully online format.

601 INTERNSHIP IN HIGHER EDUCATION
3 credits
(May be repeated for a total of six credits) Prerequisite: permission; corequisite: 602. Inten-
tive study of administrative levels in higher education, related to student’s own program of studies and professional goals. Delivered in face-to-face web enhanced format and fully online format.

602 INTERNSHIP IN HIGHER EDUCATION SEMINAR
1 credit
(May be repeated for a total of three credits) Prerequisite: permission; corequisite: 601. To be
taken in conjunction with internship for synthesis of problems encountered in internship expe-
rience to provide the opportunity to share ideas and experiences from various areas of
higher education internship placement. Delivered in face-to-face web enhanced format and fully
online format.

610 DIVERSITY ISSUES IN HIGHER EDUCATION
3 credits
Examination of psychosocial literature and theories related to diverse groups and issues with-
in higher education. Theoretical application and perspectives to administrative practice empha-
sized.

615 HISTORICAL FOUNDATIONS OF AMERICAN HIGHER EDUCATION
3 credits
Overview of the historical foundations, academic history, and educational traditions emerging
from its European roots into American higher education to inform contemporary practice.

620 FINANCE AND HIGHER EDUCATION
3 credits
Facilitates student’s understanding of how American Higher Education is financed, identifies
various methodologies used, and political and economic impacts and processes involved.
Delivered in face-to-face web enhanced format and fully online format.

26 POLICY, ASSESSMENT, AND ACCOUNTABILITY IN HIGHER EDUCATION
3 credits
Examination of policy student with an emphasis on accountability and evaluation in higher education.
Theoretical approaches explored, internal and external policy actors identified and implementa-
tion issues are examined. Delivered in face-to-face web enhanced format and fully online for-
mat.

635 INSTRUCTIONAL STRATEGIES AND TECHNIQUES FOR THE COLLEGE INSTRUCTOR
3 credits
Selection of strategies, techniques and strategies which are appropriate to
instructional planning and development of college-level courses. Delivered in face-to-face
web enhanced format and fully online format.

645 INDEPENDENT STUDY IN HIGHER EDUCATION
1-3 credits
Selected areas of independent investigation in an area of higher education as determined by
the advisor and student in relation to student’s academic needs and career goals. Delivered in
face-to-face web enhanced format and fully online format.

POSTSECONDARY TECHNICAL EDUCATION
5400:

500 POSTSECONDARY LEARNER
3 credits
Describes characteristics of the postsecondary learner; studies issues, factors, and strategies
pertinent to successful facilitation of learning in a variety of postsecondary learning environ-
ments. Delivered in face-to-face web-enhanced format and fully online format.

501 LEARNING WITH TECHNOLOGY
3 credits
An overview of instructional design and research technologies used and applied in
workforce education and training by practitioners/learners for learning, research, and evaluation.
Delivered in face-to-face web-enhanced format and fully online format.

505 WORKPLACE EDUCATION FOR YOUTH AND ADULTS
3 credits
Historical and contemporary operations of schools and systems for youth and adults. Includes study of
social, economic, and political influences that stimulate growth and expansion of workforce
education. Delivered in face-to-face web-enhanced format and fully online format.

515 TRAINING IN BUSINESS AND INDUSTRY
3 credits
Examines the role and mission of the training function in the modern industrial setting. Foun-
dation for students interested in industrial trainer or training supervisor positions. Delivered in
face-to-face web-enhanced format and fully online format.

520 POSTSECONDARY INSTRUCTIONAL TECHNOLOGY
3 credits
Experiences in using, developing, and evaluating instructional technology and media used in
postsecondary learning environments. Delivered in face-to-face web-enhanced format and fully
online format.
530 SYSTEMATIC CURRICULUM DESIGN FOR POSTSECONDARY INSTRUCTION 3 credits
Procedure of breaking down an occupation to determine curriculum of their laboratory and classroom and developing content into an organized sequence of instructional units. Delivered in face-to-face web-enhanced format and fully online format.

535 SYSTEMATIC INSTRUCTIONAL DESIGN IN POSTSECONDARY EDUCATION 3 credits
Selected topics in instructional techniques appropriate in postsecondary technical education. Emphasis on instructional techniques both in classroom, laboratory and online, measurement, and content selection. Delivered in face-to-face web-enhanced format and fully online format.

541 EDUCATIONAL GERONTOLOGY SEMINAR 3 credits
Design and delivery of curricula in the field of gerontology or preparing for a specialization in educational gerontology, including person responsible for development and implementation of course programs, evaluation and training workshops and workshops for older people.

560 SPECIAL TOPICS: WORKFORCE EDUCATION/TRAINING 1-3 credits (May be repeated for a maximum of six credits with a change in topic) Group study of special topics of critical, contemporary concern in professional education.

560, 961 WORKSHOP 1-3 credits each Individual work under staff guidance on curriculum problems, utilization of community resources, planning of curriculum units. Delivered in face-to-face web-enhanced format and fully online format.

594 EDUCATIONAL INSTITUTES 1-4 credits Special courses designed as in-service upgrading programs, frequently provided with the support of national foundations.

600 THE TWO-YEAR COLLEGE 3 credits Introduces students to the nature, purpose, and philosophy of the two-year college. Includes an examination of two-year colleges, technical schools, proprietary schools offering courses at the postsecondary level. Delivered in face-to-face web-enhanced format and fully online format.

601 ADVANCED SYSTEM DESIGN: NEEDS ASSESSMENT AND EVALUATION 3 credits An examination of the instructional design in workforce education and training and supporting research in effective performance-based program needs assessment, evaluation, and applications. Delivered in face-to-face web-enhanced format and fully online format.

602 POSTSECONDARY TEACHER LEADERSHIP 3 credits An examination of the role of supervisor of postsecondary instruction, facilitation and evaluation of postsecondary instructional programs, professional development, and as well as related leadership and management issues. Delivered in face-to-face web-enhanced format and fully online format.

606 POSTSECONDARY DISTANCE LEARNING 3 credits Introduction to the nature, philosophy and pedagogy of distance learning: examination of current scope, history, theory, institutions, and programs of distance learning. Delivered in face-to-face web-enhanced format and fully online format. Delivered in face-to-face web-enhanced format and fully online format.

675 ADVANCED INSTRUCTIONAL APPLICATIONS SEMINAR 3 credits Prerequisites: 550, 520, 530, and 535. Provides an environment for students to learn teaching and learning strategies, development of courses and programs, and the use of technology in teaching and learning. Delivered in face-to-face web-enhanced format and fully online format.

690 INTERNSHIP IN POSTSECONDARY EDUCATION 3 credits Prerequisites: 550, 520, 530, and 535. Teaching in curriculum development under supervision from the University and the learning organization. Includes a seminar and portfolio development. Delivered in face-to-face web-enhanced format and fully online format.

695 FIELD EXPERIENCE: MASTERS 3 credits (May be repeated for a total of 80 field hours) On-the-job experience related to student's program of studies. Credit/No credit.

696 INDEPENDENT STUDY 13 credits (May be repeated for a total of six credits.) Area of study determined by student's need.

698 MASTER'S PROBLEM 3 credits (May be repeated for a total of six credits.) In-depth study of an instructional or curricular problem in workforce education or training. Student must be able to demonstrate critical, analytical, and problem-solving skills.

699 MASTER'S THESIS 3 credits (May be repeated for a total of six credits.) Opportunity to conduct research on a problem in workforce education or training. Student must be able to demonstrate needed analytical, evaluation, and basic research skills. Credit/No credit.

CURRICULAR AND INSTRUCTIONAL STUDIES 5500:

520 ADVANCED INSTRUCTIONAL TECHNIQUES 3 credits Methods of teaching a particular area of the 7-12 grade curriculum for students in the Master's with licensure program.

521 FIELD EXPERIENCE: ADVANCED INSTRUCTIONAL TECHNIQUES 2 credits Corequisite: 520. Instructional experience in the 7-12 classroom to apply theory and research to practice.

522 CONTENT AREA LITERACY 3 credits Examines instructional strategies for constructing meaning in content subject, e.g., science, mathematics, social studies using print and electronic texts.

523 TEACHING READING TO CULTURALLY DIVERSE LEARNERS 3 credits Knowledge, skills and attitudes to employ effective methods of teaching reading to diverse populations and/or learners whose language patterns are non-standard.

540 PRINCIPLES OF BILINGUAL/MULTICULTURAL EDUCATION 3 credits An introduction to the theories, cultural, social, and political principles of bilingual/multicultural education. Legislation, court decisions, program implementation included.

541 TEACHING LANGUAGE TO SECOND LANGUAGE LEARNERS 3 credits (12 field hours) Course applies methodologies for teaching reading, language arts in the bilingual/multicultural classroom. T绩en in student’s native language and culture are stressed.

542 TEACHING MATHEMATICS, SOCIAL SCIENCES AND STUDY TECHNIQUES TO INTELLECTUALLY DISABLED STUDENTS 3 credits Prerequisites: elementary education majors, 550/333, 336, 338; secondary education majors, 550/331 (science, social studies in the bilingual/multicultural classroom). Course applies methodologies to teaching of mathematics, science, social studies in the bilingual/multicultural classroom. The bilingual student's native language stressed.

543 TECHNIQUES FOR TEACHING ENGLISH AS A SECOND LANGUAGE 3 credits (10 field hours) Course includes teaching language skills to Limited English Proficient students in grades K-12, administration of language assessment tests, selection and evaluation of materials.

545 NATURE, HISTORY, AND PHILOSOPHY OF SCIENCE 3 credits (May be repeated with a change of topic) Provides opportunities to examine the historical and philosophic perspectives of science in an online medium and the impact of science and technology on society.

555 LITERACY FOR MULTILANGUAGE LICENSURE 3 credits Prerequisite: Admission to Teacher Education program. Organizing instruction, use of oral language development programs, strategies for word skill development, comprehension and assessment as they relate to content areas.

575 INSTRUCTIONAL TECHNOLOGY APPLICATIONS 3 credits Focus on developing learner competencies in the use of instructional technologies to enhance both the instructor’s personal and professional productivity.

590, 12 WORKSHOP 13 credits Workshop for educators to improve teaching skills in a specific area of the curriculum. (May be repeated for a maximum of 6 credits.)

594 EDUCATIONAL INSTITUTES 3 credits Special courses designed as in-service upgrading programs. Frequently provided with support of national foundations.

600 CONCEPTS OF CURRICULUM AND INSTRUCTION 3 credits (3 field hours) A study of the underlying research and theory of curriculum and instruction. Special attention to educational decisions and applications to educational decision making.

605 SEMINAR IN TRENDS AND ISSUES IN CURRICULUM AND INSTRUCTION 3 credits A study of recent research and theory in curriculum and instruction with special attention to applications to educational decision making.

615 PHILOSOPHY AND ORGANIZATION OF MIDDLE SCHOOLS 3 credits Philosophy, theory, research, and exemplary organizational, assessment, and evaluation component of middle level education.

616 MIDDLE SCHOOL CURRICULUM AND INSTRUCTION 3 credits Theories, research, and exemplary practices focusing on middle school curriculum and instruction.

617 LICENSURE SEMINAR IN CURRICULAR AND INSTRUCTIONAL STUDIES 3 credits This course should be taken at the beginning of the Master’s with Licensure program as an introduction to curriculum and the pragmatics of teaching.

619 INSTRUCTIONAL AND MANAGEMENT PRACTICES 3 credits Students learn to use organizational and management strategies to become effective in their roles. Also included are educational issues that relate to effective management and instructional responsibilities.

621 ADVANCED INSTRUCTIONAL TECHNIQUES: MODERN LANGUAGES 3 credits Prerequisite: 617 or permission of instructor. Focus is on theories of language acquisition, models of instruction suited to teaching foreign languages and cultures in the P-12 classroom, and strategies that promote appropriate levels of language competence and proficiency for young learners.

622 CHILDREN’S LITERATURE IN THE CURRICULUM 3 credits Examination of literary genres, techniques, and methods for presenting literature to children in preschool, elementary, and middle grades.

625 CONTEMPORARY ISSUES IN LITERACY INSTRUCTION AND PHONICS 3 credits Students explore current research in reading and writing as constructive processes of meaning-making.

626 ASSESSMENT OF READING DIFFICULTIES 3 credits Prerequisite: 625. Examination of diagnostic, informal assessments and intervention strategies for children with reading difficulties.

627 SPECIAL TOPICS: CURRICULAR AND INSTRUCTIONAL STUDIES 3 credits Prerequisite: permission of instructor. (May be repeated with a change in topic for a maximum of 6 credits) Group studies of special topics of critical, contemporary concern in professional education.

628 LITERACY ASSESSMENT PRACTICUM 3 credits (25.6 field hours) Prerequisites: 625, 630. Laboratory experience within classroom, small groups and individuals. A student diagnosticians, implements procedures, and follows prescribed reading improvement. (May be repeated for a maximum of 6 credits.)

629 READING PROGRAMS IN SECONDARY SCHOOLS 3 credits For all subject teachers both with and without previous study in the teaching of reading. Materials, class organization and procedures for developing reading improvement programs, for all secondary school and college classroom teachers.

631 ADVANCED BEHAVIORAL STRATEGIES FOR THE EDUCATOR 3 credits This course provides the educator with an advanced examination of strategies designed to improve student behavior in the school setting.

635 SEMINAR IN TEACHING FOREIGN LANGUAGES 3 credits (May be repeated for a total of six credits.) Issues and subjects related to teaching in foreign language education and language learning theories. Different topics will be offered from section to section.

637 TOPICAL SEMINAR IN RESEARCH AND THEORY IN FOREIGN LANGUAGE EDUCATION 3 credits (May be repeated for a total of six credits.) Issues and subjects related to teaching in foreign language education and language learning theories. Different topics will be offered from section to section.

640 DEVELOPMENT OF CHILDREN: GRADES FOUR AND FIVE 3 credits Prerequisite: Early Childhood P3 teaching license. Course focuses on nature and needs of grades four to five adolescents' development including physical, cognitive, intellectual, moral, psychological and social-emotional. Explore related issues in home, school and community contexts.

641 FOURTH GRADE CURRICULUM AND INSTRUCTION 3 credits Prerequisite: 640. The language arts, mathematics, science, and social studies content and the knowledge of inquiry and problem-based instruction necessary for fourth grade learners.

642 FIFTH GRADE CURRICULUM AND INSTRUCTION 3 credits Prerequisite: 640. Models an inquiry-based format that integrates math, science, social studies, and technology standards where students learn to create, implement, manage, and evaluate their own learning through hands-on experimentation.

645 THEORY AND PRACTICE IN ELEMENTARY SCHOOL MATHEMATICS 3 credits Focuses on the development of mathematics education, current trends in the teaching of elementary school mathematics, and future directions in mathematics education.

650 ELEMENTARY SCIENCE CURRICULUM AND INSTRUCTION 3 credits A critical analysis of the theory and practice of elementary science curriculum and instructional methods for the young learner.

651 SECONDARY SCIENCE CURRICULUM AND INSTRUCTION 3 credits A critical analysis of the theory and practice of secondary science curriculum and instructional methods for the young learner.

660 COACHING IN DIVERSE CLASSROOMS 2 credits This course focuses on the preparation of literacy specialists to coach teachers in the implementation of culturally responsive literacy instruction for diverse learners.

661 COACHING FOR EFFECTIVE ASSESSMENT PRACTICE 2 credits Designed for reading specialists, this course teaches knowledge, skills and dispositions in school-based professional development and coaching on classroom-based literacy assessment concepts and skills.

The University of Akron 2011-2012
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>550</td>
<td>MUSCULOSKELETAL ANATOMY I: UPPER EXTREMITY</td>
<td>3</td>
<td>Designed to address the upper portions of the musculoskeletal system in comprehensive detail. Includes articulations, cytology, histology, neurological integration with lab and practical experiences.</td>
</tr>
<tr>
<td>551</td>
<td>MUSCULOSKELETAL ANATOMY II: LOWER EXTREMITY</td>
<td>3</td>
<td>Designed to address the lower portions of the musculoskeletal system in comprehensive detail. Includes articulations, cytology, histology, neurological integration with lab and practical experiences.</td>
</tr>
<tr>
<td>500</td>
<td>ADVANCED STRENGTH AND CONDITIONING</td>
<td>3</td>
<td>This course teaches strength and conditioning programs designed for heterogeneous populations. The course covers high-level sport specific exercise prescriptions that aid injury prevention and performance enhancement.</td>
</tr>
<tr>
<td>510</td>
<td>INTRODUCTION TO SPORT SOCIOLOGY</td>
<td>3</td>
<td>Provides information to students about the sociological aspects of sport. Delivered in a totally online format, web-based format, or face-to-face format.</td>
</tr>
<tr>
<td>518</td>
<td>CARDIORESPIRATORY FUNCTION</td>
<td>3</td>
<td>This course is designed to study the normal structure and function of the respiratory system and how it is affected by different types of disease.</td>
</tr>
<tr>
<td>520</td>
<td>SPORT MANAGEMENT</td>
<td>3</td>
<td>This course seeks to explore, acquire, and discuss knowledge within the theoretical and applied management practices of sport, fitness, and instructional programs. Delivered in a totally online format, web-based format, or face-to-face format.</td>
</tr>
<tr>
<td>522</td>
<td>SPORTS PLANNING/PROMOTION</td>
<td>3</td>
<td>Analysis of marketing/promotion from a sport manager's perspective. Emphasis on marketing strategy, tactics, and development in sport delivery systems. Delivered in a totally online format, web-based format, or face-to-face format.</td>
</tr>
<tr>
<td>524</td>
<td>SPORT LEADERSHIP</td>
<td>3</td>
<td>Introduces students to current issues related to leadership, management, and supervision. Examines leadership theories and governance structure of amateur and professional sport organizations. Delivered in a totally online format, web-based format, or face-to-face format.</td>
</tr>
<tr>
<td>526</td>
<td>NUTRITION FOR SPORTS</td>
<td>3</td>
<td>This course will provide an explanation of the consumption, absorption, and recommendation for diet of athletes and the physically active individual.</td>
</tr>
<tr>
<td>528</td>
<td>NUTRITION FOR TEACHERS AND COACHES</td>
<td>3</td>
<td>Covers basic nutrition and current topics related to teaching physical education, health, and coaching athletics.</td>
</tr>
<tr>
<td>536</td>
<td>FOUNDATIONS AND ELEMENTS OF ADAPTED PHYSICAL EDUCATION</td>
<td>3</td>
<td>Principles, components, and strategies necessary in providing motor activities for handicapped students via application of a neuromotor-developmental model and alternative methods.</td>
</tr>
<tr>
<td>538</td>
<td>CARDIAC REHAB PRINCIPLES</td>
<td>3</td>
<td>This course will teach students the core competencies for cardiac rehab professionals, based upon the American Association of Cardiovascular and Pulmonary Rehabilitation Specialists (AACVPR).</td>
</tr>
<tr>
<td>540</td>
<td>INJURY MANAGEMENT FOR TEACHERS AND COACHES</td>
<td>2</td>
<td>This course challenges the graduate student to understand ways to provide and care for the safety of individuals they teach.</td>
</tr>
<tr>
<td>541</td>
<td>ADVANCED ATHLETIC INJURY MANAGEMENT UPPR EXTREMITY</td>
<td>4</td>
<td>This course is designed to cover recognition, evaluation, and rehabilitation of upper extremity injuries as well as general medical pathologies of the upper extremity.</td>
</tr>
<tr>
<td>546</td>
<td>INSTRUCTIONAL TECHNIQUES IN SECONDARY PHYSICAL EDUCATION</td>
<td>3</td>
<td>Instructional strategies for secondary physical education. The course content is to improve the teaching skills of students who will be teaching physical education at the secondary level. It is a required course for the physical education licensure.</td>
</tr>
<tr>
<td>547</td>
<td>INSTRUCTIONAL TECHNIQUES FOR CHILDREN IN PHYSICAL EDUCATION</td>
<td>3</td>
<td>Instructional strategies for elementary physical education. The course content is to improve the teaching skills of students who will be teaching physical education for children. It is a required course for the physical education licensure.</td>
</tr>
<tr>
<td>552</td>
<td>FOUNDATIONS OF SPORT SCIENCE, PHYSICAL AND HEALTH EDUCATION</td>
<td>3</td>
<td>Overview of the emergence of sport science, physical and health education as a profession and the supporting role of the underlying scholarly and scientific disciplines.</td>
</tr>
<tr>
<td>553</td>
<td>PRINCIPLES OF COACHING</td>
<td>3</td>
<td>Basics for becoming a successful coach. Discussion of principles applying to most sports, players, and coaches. Ten (10) clinical hours required. Delivered in a totally online format, web-based format, or face-to-face format.</td>
</tr>
<tr>
<td>556</td>
<td>LEGAL/ETHICAL ISSUES IN PHYSICAL AND LEISURE ACTIVITIES</td>
<td>2</td>
<td>Overview of legal and ethical elements of greatest concern to specialists in sport and physical activity. Cases used to illustrate specific topics. Topics vary. Delivered in a totally online format, web-based format, or face-to-face format.</td>
</tr>
<tr>
<td>570</td>
<td>ORTHOPEDIC INJURY AND PATHOLOGY</td>
<td>3</td>
<td>This course will address the cognitive and effective aspects of injury and rehabilitation of injury. Specifically the stages of rehabilitation and techniques to aid in the rehabilitation process.</td>
</tr>
<tr>
<td>592</td>
<td>WORKSHOP</td>
<td>3</td>
<td>Practice, intensive, and concentrated involvement with current curricular practices in areas related to physical education.</td>
</tr>
<tr>
<td>594</td>
<td>STUDENT TEACHING COLLOQUIUM</td>
<td>2</td>
<td>Prerequisites: Core courses and program studies courses. Corequisites: 595. Students who hold a master's degree but no teaching license who are completing the master's with licensure program will meet while completing student teaching to discuss concerns about the student teaching experience to analyze previous learning as it relates to this and future teaching.</td>
</tr>
<tr>
<td>595</td>
<td>PREREQUISITE STUDENT TEACHING SPECIFIC POINTS</td>
<td>8</td>
<td>Prerequisites: Core courses and program studies courses. Corequisites: 594. Student teaching for 16 weeks in primary and secondary school settings.</td>
</tr>
<tr>
<td>600</td>
<td>BIOMECHANICS APPLIED TO SPORT AND PHYSICAL ACTIVITY</td>
<td>4</td>
<td>Prerequisites: The course professionals in an integrated approach to qualitative diagnosis of motor skills for a variety of professional settings. Required clinical/field experiences.</td>
</tr>
</tbody>
</table>
610 GENERAL MEDICAL ASPECTS 4 credits

Covers various topics related to sports medicine and general medical conditions. Students will gain perspectives and exposure to a variety of allied health care professionals.

615 CURRICULUM TOPICS IN EXERCISE PHYSIOLOGY 3 credits

Class teaches students to be critical readers of the literature. Readings in several areas in exercise science will be done. Exact areas of concentration with some guidance from the instructor.

620 LABORATORY INSTRUMENTATION TECHNIQUES IN EXERCISE PHYSIOLOGY 3 credits

This lab is designed to provide hands-on laboratory experiences for students in the area of exercise science.

630 BUSINESS OF SPORT 3 credits

This course is related to the important knowledge that administrators should have related to the sport business field.

680 SPECIAL TOPICS IN HEALTH AND PHYSICAL EDUCATION 2-4 credits

(May be repeated) Prerequisite: permission of instructor. Group study of special topics in health and physical education and sports medicine.

695 FIELD EXPERIENCE: MASTER'S 16 credits

Prerequisite: permission of advisor. Participation in a work experience related to physical education. The experience may not be part of current position. Documentation of project required.

697 INDEPENDENT STUDY 3-6 credits

Prerequisite: permission of advisor. In-depth analysis of current practices or problems related to physical education. Documentation of the study required.

698 MASTER'S PROBLEM 2-4 credits

Prerequisite: permission of advisor. In-depth study of a research problem in education. Student must be able to demonstrate critical and analytical skills in dealing with a problem in physical education.

699 MASTER'S THESIS 4-6 credits

Prerequisite: permission of advisor. In-depth research investigation. Student must be able to demonstrate necessary competencies to deal with a research problem in physical education.

OUTDOOR EDUCATION 5560:

550 APPLICATION OF OUTDOOR EDUCATION TO THE SCHOOL CURRICULUM 4 credits

Provides knowledge, skills and techniques useful in application of outdoor education to school curriculum.

552 RESOURCES AND RESOURCE MANAGEMENT FOR THE TEACHING OF OUTDOOR EDUCATION 4 credits

Resources and instructional techniques which are applicable to outdoor education, and in-depth study of methods and designs, unique to the process of teaching.

554 RESIDENT OUTDOOR EDUCATION 2 credits

Focuses on helping education teachers use critical thinking to review programming/organizational techniques relevant to outdoor education programs. Extended experience in outdoor settings required.

556 OUTDOOR PURSUITS 4 credits

Investigation and participation in practical experiences in outdoor pursuits.

560 OUTDOOR EDUCATION: RURAL INFLUENCES 3 credits

Prerequisite: 560 or 592. Utilization of resources of rural area as a learning/teaching environment. Content and methodology appropriate for teaching school-age children in rural setting.

565 OUTDOOR EDUCATION: SPECIAL TOPICS 2-4 credits

(May be repeated with change in topic) Prerequisite: permission of instructor. Group and individual study of special topics of contemporary concern in outdoor education.

569 PRACTICUM IN OUTDOOR EDUCATION 2-4 credits (60-120 field hours)

Prerequisites: 550, 552 and permission of advisor. Supervised practical experience with existing outdoor education programs. In conjunction with practical work student meets regularly with advisor.

569 FIELD EXPERIENCE: MASTER'S 2-6 credits (60-180 field hours)

Prerequisite: permission of advisor. Participation and documentation of practical professional experience related to outdoor education.

579 INDEPENDENT STUDY 3 credits (70-90 field hours)

Prerequisite: permission of advisor. In-depth analysis of current practices or problems related to outdoor education. Documentation of study required.

589 MASTER'S PROBLEM 2-4 credits

Prerequisite: permission of advisor. Intensive research study related to a problem in outdoor education or related discipline.

599 MASTER'S THESIS 4-6 credits

An original composition demonstrating independent scholarship in a discipline related to outdoor education.

HEALTH EDUCATION 5570:

520 COMMUNITY HEALTH 2 credits

Study of current public health problems. Organization and administration of various agencies and their roles in the solution of community health problems.

521 COMPREHENSIVE SCHOOL HEALTH 4 credits

Prerequisite: admission to Graduate School. This course explains and presents comprehensive school health curriculum for K-12. The three components of a comprehensive school health program are presented: instruction, services, and the environment.

523 METHODS AND MATERIALS OF HEALTH EDUCATION 3 credits

Prerequisite: permission of instructor. Planning, organization, use of instructional resources and delivery of health education instruction. Content and teaching processes (pre K-12).

560 PRACTICUM IN HEALTH EDUCATION 2-6 credits

Prerequisite: permission of instructor. The practicum in Health Education is an on-site participation in a community health organization, agency, or resource.

COUNSELING 5600:

550 COUNSELING PROBLEMS RELATED TO LIFE-THREATENING ILLNESS AND DEATH 3 credits

Prerequisite: 500 or permission. Consideration of the global issues, current research, coping behav-

ior, support systems and family and individual needs in regard to life-threatening situations.

590 WORKSHOP 13 credits

Specialization designed as in-service and/or upgrading individuals on current issues and practices in counseling.

600 SEMINAR IN COUNSELING 1 credit

Prerequisite: counseling majors must elect 600 prior to electing 651 and/or within the first 10 credits of 5600 course work. Structured group experience designed to help a student assess selection of counseling as a profession.

610 COUNSELING SKILLS FOR TEACHERS 3 credits

Prerequisite: 611 or 633 or permission. The study and practice of selected counseling tech-
niques applicable to working with students, parents and colleagues.

620 ISSUES IN SEXUALITY FOR COUNSELORS 3 credits

A seminar covering, in addition to changing current topics, sexuality across the lifespan, diver-
sity and sexual orientation, and assessment.

621 COUNSELING YOUTH AT RISK 3 credits

This course is designed to prepare counselors and other helping professionals to work with at-risk youth and children and adolescents in school and community settings.

622 INTRODUCTION TO PLAY THERAPY 3 credits

Prerequisites: enrolled in a master’s or doctoral program in counseling or related field, or spe-
cialization in the helping professions (i.e., professional counselor). This course is designed to give students an introduction to play therapy from a child-centered perspective. Students will develop compet-
ences in child-centered play therapy.

623 MARRIAGE AND FAMILY COUNSELING/THERAPY ETHICS AND PROFESSIONAL IDENTIITY 3 credits

This course is designed to help students learn about marriage and family counseling/therapy as an independent profession and about its corresponding ethical codes.

631 ELEMENTARY/SECONDARY SCHOOL COUNSELING 3 credits

Introductory class; examines elementary and secondary school counseling practices.

635 COMMUNITY COUNSELING 3 credits

Overview of community and college counseling services; their evaluation, philosophy, organi-

dation and administration.

636 COLLEGE ADMISSION COUNSELING I 3 credits

Theories, readings, websites, class activities, discussion, and experiential projects students will learn the fundamental skills needed to assist counselors in college admission process.

637 COLLEGE ADMISSION COUNSELING II 3 credits

Prerequisite: 636. Students will continue to enhance their knowledge in guiding students through the college admission process through extensive field work at surrounding college campus locations.

640 COUNSELING ADOLESCENTS 3 credits

Prerequisite: graduate student in counseling or related field. The examination of the physical, cognitive, emotional, and social developmental processes of the adolescent as these affect their performance in a diverse education environment will be addressed.

643 COUNSELING THEORY AND PHILOSOPHY 3 credits

Examination of major counseling systems including client-centered, behavioral and existential theories. Philosophical and theoretical dimension stressed.

646 TESTS AND APPRAISAL IN COUNSELING 4 credits

Prerequisites: 500:640. Study of the nature of tests and appraisal in counseling including reli-

ability, validity, test construction and selection, administration, scoring, and basic interpretation of selected measures.

648 MULTICULTURAL COUNSELING 3 credits

Prerequisite: 543 or permission. An examination of multicultural counseling theory and research necessary for counseling within culturally diverse populations.

649 CAREER DEVELOPMENT AND COUNSELING ACROSS THE LIFE SPAN 3 credits

Overview of career development and choice over the lifespan. Personal, family, and societal characteristics that affect choice, career choice, and implementation are discussed.

649 INDIVIDUAL AND FAMILY DEVELOPMENT ACROSS THE LIFESPAN 3 credits

An exploration of individual and family development, human behavior, and theories of learning and personality. Emphasis will be placed on understanding the relationship between the indi-

vidual and his/her family.

650 FILIAL THERAPY 3 credits

Prerequisites: 560 or 622 and graduate student in counseling or related field. This course is designed to train students how to teach parents specific child-centered play therapy skills to use with their children.

651 TECHNIQUES OF COUNSELING 3 credits

Prerequisites: 569, 563 (precore). Corequisites: 669. Study and practice of selected coun-

seling techniques and skills with emphasis on structuring, listening, leading and establishing a counseling relationship.

652 GROUP COUNSELING 4 credits

Prerequisites: 643 or 710, and 651. Knowledge and understanding of theory, research, and techniques necessary for conducting group counseling sessions. An experimental component is included.

655 MARRIAGE AND FAMILY THERAPY: THEORY AND TECHNIQUES 3 credits

An overview of the theoretical models and therapeutic techniques of marital and family therapy, including exposure to the history, terminology and contributions of important people in the field.

657 CONSULTANT COUNSELING 3 credits

Prerequisites: 631, 651 or permission. Examination of consultation models with focus on process and product.

659 ORGANIZATION AND ADMINISTRATION OF GUIDANCE SERVICES 3 credits

Prerequisite: 631 or 651 or permission. Development of a comprehensive articulated guidance and counseling program.

660 COUNSELING CHILDREN 3 credits

Prerequisite: graduate student in counseling or related field. This course is designed as an entry-level course for counselors, school counselors, school psychologists, or other professionals preparing to engage in work with children. It is not a class in diagnosis of child behavior disorders.

662 PERSONALITY AND ABNORMAL BEHAVIOR 3 credits

This course will examine several theoretical approaches to personality and how they account for abnormal and psychopathological behavior related to clinical practice.

663 DEVELOPMENTAL GUIDANCE AND EMOTIONAL EDUCATION 3 credits

An introductory seminar designed to help students learn developmental guidance strategies for affective education, classroom guidance, deliberate psychological education and developmental counseling.

664 DSM 2 credits

This course teaches students practical assessment and diagnostic skills related to the most recent version of the Diagnostic and Statistical Manual of Mental Disorders.

666 TREATMENT IN CLINICAL PSYCHOLOGY 3 credits

This course teaches students treatment planning and research-based treatment interventions for preventing and reducing common mental disorders found in the counseling profession.

667 MARRITAL THERAPY 3 credits

Prerequisite: 655. In-depth study of theories and interventions which focus on the nature and quality of marital relationships.
737 CLINICAL SUPERVISION I 3 credits
    Prerequisite: Successful completion of advanced practicum and Supervision I. Instruction and experience supervising graduate students in counseling.

738 CLINICAL SUPERVISION II 4 credits
    Prerequisite: Successful completion of advanced practicum and Supervision I. Instruction and experience supervising graduate students in counseling.

745 ASSESSMENT METHODS AND TREATMENT ISSUES IN MARRIAGE AND FAMILY THERAPY 3 credits
    Prerequisite: 645. Provides advanced counseling students with the knowledge and skills in assessment methods, techniques and instruments relevant to the practice of marriage and family therapy.

766 OUTCOME RESEARCH IN MARRIAGE AND FAMILY THERAPY 3 credits
    Prerequisite: 675, 530; 685. This course will provide an in-depth examination of marriage and family therapy outcome research.

761 COUNSELING CHILDREN 3 credits
    This course is designed for graduate students in counseling or related field. This course is designed as an entry-level course for counselors, school counselors, school psychologists, or other professionals preparing to engage in therapeutic work with children. It is not a class in diagnosis of childhood disorders.

765 DOCTORAL INTERNSHIP 3 credits
    (May be repeated for a total of 9 credit hours.) Prerequisite: passing grades on written and oral comprehensive examinations and successful experience in clinical settings, teaching, and supervision. A minimum of 600 clock hours must be completed in a minimum of two consecutive semesters immediately following completion of comprehensive examinations. Credit/noncredit.

776 COUNSELING PSYCHOLOGY PRACTICUM 4 credits
    (May be repeated for a total of 12 credits) Prerequisite: 675, 720, 710. Supervised counseling practicum experience.

778 SUPERVISION IN COUNSELING PSYCHOLOGY I, II 4 credits each
    Prerequisites: doctoral residency or permission. Instruction and experience in supervising graduate students in counseling.

785 DOCTORAL INTERNSHIP 4 credits
    This course is designed for a total of 12 credit hours. Cognizant psychomotor counseling psychology students will have supervised training with clients in a variety of settings and will focus on supervised development of specialized theoretical applications. Credit/noncredit.

500 INDEPENDENT READING AND/OR RESEARCH IN COUNSELING PSYCHOLOGY 1-15 credits
    (May be repeated for a total of nine credits) Prerequisite: permission of instructor. Independent readings and/or research in an area of counseling psychology under the direction of a faculty member.

895 FIELD EXPERIENCE: DOCTORAL 1-14 credits
    (May be repeated for a total of nine credits) Prerequisite: doctoral candidate status. Placement in selected setting for supervised counseling experiences and/or developing skills related to student's doctoral program.

899 INDEPENDENT STUDY 1-13 credits
    (May be repeated for a total of nine credits) Prerequisites: permission of advisor and department chair. Specific area of investigation determined in accordance with student needs.

900 DOCTORAL DISSERTATION 1-120 credits
    Prerequisites: permission of major doctoral advisor and department chair. Study, design and analysis of counseling problem.

540 INDIVIDUALS WITH EXCEPTIONALITIES: EDUCATIONAL AND SOCIETAL ISSUES 3 credits
    Prerequisite: Admission to College of Education Teacher Preparation Program or permission of instructor. A survey course covering the identification, developmental characteristics, and intervention strategies for exceptional children and youth across education and community settings (1 fall hour).

544 DEVELOPMENTAL CHARACTERISTICS OF INTELLECTUALLY GIFTED INDIVIDUALS 3 credits
    Prerequisite: 540. Survey of etiology, diagnosis, classification and developmental characteristics of intellectually gifted individuals.

547 INDIVIDUALS WITH MILD/MODERATE EDUCATIONAL NEEDS: CHARACTERISTICS AND IMPLICATIONS 4 credits
    Survey of the etiology, identification, classification, developmental characteristics of and intervention strategies for individuals with mild/moderate educational needs.

548 INDIVIDUALS WITH MILD/MODERATE EDUCATIONAL NEEDS: CHARACTERISTICS AND IMPACTS I 4 credits
    Prerequisite: 540. Survey of the etiology, identification, classification, developmental characteristics of individuals with mild/moderate educational needs (20 field hours).

549 INDIVIDUALS WITH MILD/MODERATE EDUCATIONAL NEEDS: CHARACTERISTICS AND IMPACTS II 4 credits
    Prerequisite: 540. Survey of the etiology, identification, classification, developmental characteristics of individuals with mild/moderate educational needs (20 field hours).

550 SPECIAL EDUCATION PROGRAMMING: EARLY CHILDHOOD 3 credits
    Prerequisite: 540. Developmental patterns of young children with disabilities and developmental/exceptionality appropriate practices with respect to programming and adaptations (1 field hour).

551 SPECIAL EDUCATION PROGRAMMING: MILD/MODERATE I 3 credits
    Prerequisites: 540 or 547. Survey of etiology, identification, classification, and developmental characteristics of individuals with mild/moderate educational needs (20 field hours).

552 SPECIAL EDUCATION PROGRAMMING: SECONDARY/TRANSITION 3 credits
    Study of diagnostic and prescriptive service delivery systems designed to accommodate developmental patterns of secondary level students with exceptionalities (20 field hours).

553 SPECIAL EDUCATION PROGRAMMING: MODERATE/INTENSIVE I 4 credits
    Development of the programming strategies including assessment, inter/transdisciplinary models, family involvement, IFSP/IEP/IP. Development, instructional practices based upon legal/ethical principles for individuals with moderate/intensive educational needs (20 field hours).

554 SPECIAL EDUCATION PROGRAMMING: MODERATE/INTENSIVE II 4 credits
    Advanced program for providing educational planning and intervention for individuals with moderate/intensive educational needs. Focus is on developing a comprehensive educational program which will facilitate optimum functioning and independence (20 field hours).

555 SPECIAL EDUCATION PROGRAMMING: MILD/MODERATE II 4 credits
    Special educational instruction, assessment, teaching strategies, and adaptive materials necessary to meet the needs of school age students with mild/moderate educational needs (20 field hours).

560 COLLABORATION AND CONSULTATION IN SCHOOLS AND COMMUNITY 3 credits
    Prerequisites: 540 and 547, or 548, or permission of instructor. Provides professional educators with specialized knowledge and skills in collaboration and consultation for working with parents of exceptional children and other professionals in nonclassroom settings.

561 FAMILY DYNAMICS AND COMMUNICATION IN THE EDUCATIONAL PROCESS 3 credits
    A study of family therapy and structure along with beginning techniques for working with families of students with exceptionalities, in educational and community settings.

561 SPECIAL EDUCATION PROGRAMMING: EARLY CHILDHOOD MODERATE/INTENSIVE 3 credits
    Prerequisites: 540 and 547. Survey of etiology, identification, classification and developmental characteristics of individuals with early childhood disorders.

562 SPECIAL EDUCATION PROGRAMMING: MILD/MODERATE 3 credits
    Survey of etiology, identification, classification, and developmental characteristics of individuals with mild/moderate educational needs (20 field hours).

563 ASSESSMENT IN SPECIAL EDUCATION 3 credits
    Prepares student to select, administer and interpret formal and informal assessment procedures and use resulting data in planning educational programs for exceptional individuals.
601 COGNITIVE FUNCTION MODELS FOR PRESCRIPTIVE EDUCATIONAL PLANNING 3 credits
Prerequisite: permission of instructor. Consideration of cognitive development theories and their application for educational programming.

602 BEHAVIORAL ASSESSMENT 3 credits
Prerequisite: permission of instructor. Overview of behavioral theory and its application focusing upon the role of the school psychologist as an agent of behavior change.

603 CONSULTATION STRATEGIES IN SCHOOL PSYCHOLOGY 3 credits
Prerequisite: permission of instructor. A consideration of consultant roles in the practice of school psychology relative to related consultant process and with school and agency personnel, parents and children.

610 EDUCATIONAL DIAGNOSIS FOR SCHOOL PSYCHOLOGISTS 4 credits
Prerequisites: permission of instructor. Clinical study and application of current assessment approaches applicable in assessment of children's learning problems.

611 PRACTICUM IN SCHOOL PSYCHOLOGY 4 credits
Prerequisite: permission of instructor. Laboratory experience in psycho-educational study of individual children who have learning problems in school. (Repeat requirement).

630, 1 INTERNSHIP IN SCHOOL PSYCHOLOGY: FALL/SPRING 3 credits each
Prerequisite: permission of instructor. Full-time paid work assignment under supervision of a qualified school psychologist for an academic year structured according to provisions of the Department of Education. Additional readings required.

640 FIELD SEMINAR I: CURRENT PROFESSIONAL TOPICS/ISSUES IN SCHOOL PSYCHOLOGY 3 credits
Prerequisite: permission of instructor. Consideration of pertinent topics/issues in practice of school psychology with emphasis upon field-based concerns of a practicing school psychologist.

641 FIELD SEMINAR II: LOW INCIDENCE/RELATED INQUIRIES 3 credits
Prerequisite: permission of instructor. Consideration of pertinent topics/issues in practice of school psychology with emphasis on field-based concerns of a practicing school psychologist.

694 RESEARCH PROJECT IN SPECIAL AREAS 1-3 credits
Prerequisite: permission of advisor. Study, analysis and reporting of school psychology problem.

695 FIELD EXPERIENCE: MASTER'S 1-3 credits
Prerequisite: permission of instructor. Practical school psychology-related experience in school setting.

697 INDEPENDENT STUDY 1-4 credits
Prerequisites: permission of advisor and supervisor of the independent study. Documentation of specific area of investigation. Nature of the inquiry to be determined by student-supervisor agreement.

698 MASTER'S PROBLEM 2-4 credits
Prerequisite: permission of advisor. In-depth study of a research problem in education. Student must be able to demonstrate critical and analytical skills in dealing with a problem in school psychology.

699 MASTER'S THESIS 4-6 credits
Prerequisite: permission of instructor. Thorough study, analysis and reporting in depth of an educational problem; field projects in special areas; synthesis of existing knowledge in relationship to specific topic.

SPECIAL EDUCATIONAL PROGRAMS 5800:

590 WORKSHOP IN ECONOMIC EDUCATION OR IN SOCIAL STUDIES 1-3 credits
Individual work under staff guidance on curriculum problems; utilization of community resources; planning of curriculum units.

Business Administration

ACCOUNTANCY 6200:

520 ADVANCED FINANCIAL REPORTING AND ANALYSIS 3 credits
Prerequisites: 622 or equivalent. Advanced consideration of accounting theory and financial reporting practices for business combinations, partnerships, foreign operations, nonprofit entities, and consolidated statements. Covers U.S. GAAP, IFRS, SEC reporting, and corporate financial reporting policy. Emphasizes professional accounting research. Includes a research component.

530 CONTEMPORARY FEDERAL TAXATION 3 credits
Prerequisites: 621 or equivalent. Examines current federal tax practice with an emphasis on individual taxes. Includes a research component. Master of Taxation students will not be able to take this course to satisfy tax electives in the Master of Taxation program.

531 BUSINESS ENTITY TAXATION 3 credits
Prerequisites: 530 or permission. Federal income tax law related to partnerships, corporations, trusts and estates; also includes an overview of federal estate and gift tax law. Includes a research component. Master of Taxation students will not be able to take this course to satisfy tax electives in the Master of Taxation program.

540 ASSURANCE SERVICES AND PROFESSIONAL RESPONSIBILITIES 2 credits
Prerequisites: 621 or equivalent. Examines assurance services including external auditing and professional responsibilities. Focuses on standards, professional ethics, and independence requirements and procedures used in conducting assurance services. Includes a research component.

541 INFORMATION SYSTEMS AUDIT AND CONTROL 3 credits
Prerequisites: 540 or permission of instructor. Learn the fundamental concepts and practices of information systems audit control. Use control objectives and standards by information systems control, audit and security organizations.

554 INFORMATION SYSTEMS SECURITY 2 credits
Prerequisites: 603 or equivalent. Focus on information systems risk and security in distributed business environments; develop policies, practices, and systems for security of computers and data in business. Includes a research component.

570 GOVERNMENTAL ACCOUNTING 3 credits
Prerequisites: 621 or equivalent. Theory and procedures involved in application of fund accounting, budgetary control, appropriations and various accounting systems to governmental units, educational, medical and other nonprofit institutions. Covers financial reporting for government and not for profit entities and GASB standards. Includes a research component.
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MANAGEMENT

520 MANAGEMENT OF DATA NETWORKS
Prerequisite: 602. Principles of the design and management of data networks for business communications.
3 credits

571 MANAGEMENT PROJECT
Prerequisite: 670. Students develop skills in field-based management problem solving, project management, and requirements analysis under conditions of uncertainty in a collaborative interdisciplinary team environment.
3 credits

576 SUPPLY CHAIN SOURCING
Prerequisites: 675. Introduces the student to fundamental sourcing concepts as well as the scope of responsibility and critical roles of the sourcing function within the principal organization in a supply chain network.
3 credits

580 INTRODUCTION TO HEALTH-CARE MANAGEMENT
Prerequisite: graduate standing. Introductory course for health professionals covering principles and concepts of management applied to health services organizations. For those registered for graduate credit, a major paper is required.
3 credits

582 HEALTH SERVICES OPERATIONS MANAGEMENT
Prerequisites: 582 or 600 or equivalent, and permission of instructor. Application of operations and systems analysis to health services organizations.
3 credits

585 SPECIAL TOPICS IN HEALTH SERVICES ADMINISTRATION
Prerequisites: 582 or 577. Intensive team and/or individual research oriented towards solving a major hospital administration problem.
3 credits

600 MANAGEMENT AND ORGANIZATIONAL BEHAVIOR
Course examines management principles, concepts, functions, and processes, as well as human behavior in organizations.
3 credits

601 BUSINESS ANALYTICS AND INFORMATION STRATEGY
Prerequisites: 600 or equivalent. In-depth analysis and discussion of core issues that impact on business decision problems and analyze them quantitatively. Emphasis on business intelligence, statistics, and spreadsheet modeling skills for improving decision-making processes in business environments.
3 credits

602 COMPUTER TECHNIQUES FOR MANAGEMENT
Prerequisite: 550. Introduction to the use of integrated spreadsheet software, database management software, and the analysis and design of management information systems.
3 credits

605 BUSINESS APPLICATIONS DEVELOPMENT
The analysis and authorization of standard business processes with examples from diverse business functions. Students will integrate these applications for business decision making.
3 credits

606 ENTREPRENEURSHIP
Prerequisites: upper college or graduate standing and 300 or 600 or equivalent. Students develop new products and work with entrepreneurial businesses in the development of business plans that are presented to investors and entrepreneurs in local and international business plan competitions.
3 credits

620 E-BUSINESS FOUNDATIONS
Provides an understanding of the foundation of Electronic Business focusing on business and application issues.
3 credits

622 E-BUSINESS TECHNOLOGIES
Prerequisites: 602 or 620. Course provides a foundation in Internet related technologies for success in managing an electronic business. Students will be required to design and implement a functional e-business prototype.
3 credits

640 INFORMATION SYSTEMS AND IT GOVERNANCE
Prerequisites: 602. Covers IT strategies, tactics, tools, and management organizational use of information technology and systems. Includes strategic alignment, project management, outsourcing, security, application systems, and emerging technologies.
3 credits

641 BUSINESS DATABASE SYSTEMS
Prerequisite: 602. Introduction to issues underlying the analysis, design, implementation, and management of business databases.
3 credits

643 ANALYSIS AND DESIGN OF BUSINESS SYSTEMS
Prerequisites: 602 or 6200.603. A hands-on treatment of the methods used to develop different types of business information systems.
3 credits

644 KNOWLEDGE MANAGEMENT AND BUSINESS INTELLIGENCE
Explore the technologies and techniques that enable enterprise management to manage knowledge, metadata, and e-commerce as valuable business assets.
3 credits

645 SOFTWARE DEVELOPMENT AND QUALITY ASSURANCE
Prerequisites: 602. Introduction to business software development and quality assurance. Student teams will work on projects with an emphasis in health services administration, management, focusing on historical and/or contemporary organizational and/or policy/strategy issues as related to health-care organizations and health-care systems. Separate topics may be repeated for a maximum of six credits. For those registered for graduate credit, a major research paper is required.
3 credits

650 HUMAN RESOURCE SYSTEMS FOR MANAGERS
Prerequisite: 600 or equivalent. A broad survey of the fundamental principles, research findings, and practices related to the acquisition, development, maintenance and effective utilization of a business firm's human resources.
3 credits

651 MANAGEMENT OF ORGANIZATIONAL TRANSFORMATION
Prerequisite: 600 or equivalent. A comprehensive study of innovations in organizations designed to increase human satisfaction and productivity through changes in human management.
3 credits

652 MANAGING PEOPLE IN ORGANIZATIONS
Introduction to the employment issues that managers face in organizations. The aspects of organizational behavior that influence performance and issues related to managing human resources will be examined.
3 credits

653 ORGANIZATIONAL THEORY
Prerequisite: 600. Examines the structure, design and overall effectiveness of a business organization from a macro perspective.
3 credits

654 MANAGEMENT OF ORGANIZATIONAL CONFLICT
Prerequisite: 600 or equivalent. Course emphasizes that the organization benefits from inevitable conflicts that occur and provides skills in diagnosis, negotiation, and building trust and cooperative working relationships in organizations.
3 credits

655 COMPENSATION AND PERFORMANCE MANAGEMENT
Prerequisite: 600 or equivalent. The development and analysis of systems of payments and rewards in business organizations with special attention placed on performance evaluation methods and productivity enhancement.
3 credits

656 MANAGEMENT OF GLOBAL SUPPLY CHAIN AND OPERATIONS
Prerequisite: 600 or equivalent. Provides an overview and understanding of the design and operation of supply chains and the industries that serve them.
3 credits

657 THE LEADERSHIP ROLE IN ORGANIZATIONS
Prerequisite: 600. Analysis and development of leadership theory and thought. Identification of leaders in both formal and informal organizations. Training and development methods of leadership evaluation. Individual and group applications.
3 credits

658 STRATEGIC AND GLOBAL HUMAN RESOURCES MANAGEMENT
Prerequisite: 600 or equivalent. The formulation, design and implementation of human resource practices designed to fit the competitive cost advantages for business firms operating in domestic and international markets.
3 credits

659 INTERNATIONAL HUMAN RESOURCE MANAGEMENT
Prerequisite: 600. A survey course focused on the identification, analysis, and resolutions of human resource problems in business firms with global operations.
3 credits

660 STAFFING AND EMPLOYMENT REGULATION
Prerequisite: 600 or equivalent. Design and implementation of staffing practices and systems for businesses with an emphasis on the implications of federal regulations on the staffing function.
3 credits

662 SUPPLY CHAIN ANALYSIS
Prerequisite: 675. Application of quantitative models in the analysis and design of systems in the supply chain and in manufacturing and service operations environments.
3 credits

663 DATA ANALYSIS FOR MANAGERS
Prerequisite: 600 or equivalent. Design, evaluation and interpretation of research in business and organizations. Integrates quantitative and behavioral concepts and processes encountered in conducting such research, including ethical issues.
3 credits

665 MANAGEMENT OF TECHNOLOGY
Survey of the management and practice of technology driven organizations are discussed with concepts, models and case studies for managers of technology intensive operations.
3 credits

669 POLYMER MANAGEMENT DECISIONS
Prerequisite: 670. Introduces major polymer concepts, production processes, and uses of polymeric materials in an easy-to-comprehend interdisciplinary instructional way. Industrial case studies help integrate enterprise-wide innovation and technology management related decisions.
3 credits

670 MANAGEMENT OF SUPPLY CHAINS AND OPERATIONS
Prerequisite: 670. An overview of the issues and processes that influence the management of supply chains and operations at the strategic, tactical, and operational levels of the organization.
3 credits

671 QUALITY AND PRODUCTIVITY TECHNIQUES
Prerequisite: 600 or equivalent. A course designed to improve productivity and quality through statistical process control (SPC), material requirements planning (MRP), just-in-time (JIT), inventory control and management of the production process.
3 credits

672 SUPPLY CHAIN MANAGEMENT
Prerequisite: 600. Focuses on the integration of activities and information/materials flows across multiple organizations that comprise the supply chain, and the relationships among those organizations.
3 credits

678 PROJECT MANAGEMENT
Prerequisite: 601 or permission of instructor. Provides working knowledge of tools and methods available to project managers including computerized analysis of network models to aid in the planning and control functions.
3 credits

679 SUPPLY CHAIN LOGISTICS MANAGEMENT
Prerequisite: 675. Emphasizes the importance of planning and operation of supply chain logistics systems that includes transportation, inventory and warehousing, with particular emphasis on international logistics, regulations and documentation.
3 credits

681 HEALTH SERVICES SYSTEMS MANAGEMENT
Prerequisite: 600 or equivalent or permission of instructor. Study of health services organizations, comparative delivery systems, the roles of third-party payers and government policy in health care. Seminar format: major research paper required.
3 credits

682 HEALTH SERVICES RESEARCH PROJECT
Prerequisites: 680 or permission of instructor. In-depth field study in health services administration with applications of research and analysis skills. Course requires review of literature and a major research paper.
3 credits

685 INDEPENDENT STUDY IN HEALTH SERVICES ADMINISTRATION
May be repeated for a total of three credits. Prerequisites: 580 or 568 or permission of instructor. Independent study and research of a special topic of interest to health services administration (e.g., management), chosen by the student in consultation with and supervised by the instructor for the supervision of the student.
1-3 credits

687 SELECTED TOPICS IN MANAGEMENT
May be repeated for a total of six credits. Prerequisite: 652. Selected topics in historical, contemporary and/or operational and functional areas of management.
1-3 credits

578 ORGANIZATIONAL STRATEGY
Prerequisites: 6500:670, 6400:674, 6600:620, 6800:605 or permission of instructor. A case-oriented course which focuses on the development and critical analysis of the research design and analysis of organization development and change within the organizational environment.
3 credits

697 INDEPENDENT STUDY IN MANAGEMENT
May be repeated for a total of six credits. Focus on special topics of study and research in management on an independent basis.
1-3 credits

MARKETING

575 BUSINESS NEGOTIATIONS
Examines business negotiation principles and practices and builds skills in the process of negotiating business agreements within a global environment.
3 credits

580 SALES MANAGEMENT
Prerequisite: 660. Develops analytical and managerial skills through case studies and other learning activities relating to the organization, selection, training, motivation, and control of domestic or global sales force. (Graduate credit requires additional research paper).
3 credits

590 MARKETING CONCEPTS
Introduces course examining buyer behavior, environmental influences, target marketing, product development, distribution, promotion, and pricing for business firms and nonprofit organizations. (May be repeated for a total of six credits.)
3 credits

615 DATABASE MARKETING
Prerequisite: 600. This course examines the information-driven process that is managed by database technology in e-commerce, business-to-business, business-to-consumer, and create customized marketing programs and strategies. Database marketing focuses on better decision making relative to customer selections and customer relationships.
3 credits
620 STRATEGIC MARKETING 3 credits
Review of Marketing terminology and concepts. Managerial assessments of opportunities, threats as explored as do the development and management of appropriate strategic marketing plans and their tactical implementation.

625 BRAND MANAGEMENT 3 credits
Prerequisite: 620. Application of the development, management and evolution of brands in the creation of competitive advantage. Required field project satisfies the requirement for action-based learning.

630 CUSTOMER RELATIONSHIP MANAGEMENT 3 credits
Prerequisites: 600 or permission of instructor. Investigation of the marketing concept and practice of making the customer the focus of the firm's business model. Examining the strategies and tactics for successful customer acquisition and retention is the focus of the course. 

635 E-COMMERCE AND INTERACTIVE MARKETING 3 credits
Prerequisites: 620. Covers the impact of electronic technology on marketing strategy and tactics. Investigations include: vendor/dealer relations, website traffic designs, database applications, and web appraisal metrics.

640 BUSINESS RESEARCH METHODS 3 credits
Prerequisites: 650/603 and 602. Covers the scientific methods as well as the gathering and analysis of information to identify opportunities and solve problems within a business organization.

645 INNOVATIVE MARKETING STRATEGIES 3 credits
Prerequisites: 600. A review of contemporary business issues and their impact on innovative marketing practices. Simulations, cases, and field projects support structured class dialogues and examine emerging business and marketing themes.

655 INTEGRATED MARKETING COMMUNICATIONS 3 credits
Prerequisite: 600. The total range of marketing communication tools are examined individually and in the context of planning, developing, and implementing a systematic and integrated communications program.

670 COMPETITIVE BUSINESS STRATEGY 3 credits
Prerequisite: 600. Investigation of competitive business strategy from an industry perspective. The course presents a framework which can be used to understand and develop competitive strategies.

697 INDEPENDENT STUDY IN MARKETING 1-3 credits
(May be repeated for a total of six credits) Focus on special topics of study and research in marketing on an independent basis.

PROFESSIONAL 6700:

695 INTERNSHIP IN BUSINESS 1-3 credits
Prerequisite: Permission of instructor. On-the-job experience with cooperating private and public sector organizations. Individual assignments made by supervising faculty member. Periodic reports and research papers required. Credit/noncredit.

696 SPECIAL TOPICS IN PROFESSIONAL DEVELOPMENT 1 credit
Special topics and current issues in the MBA Program Professional Core. May be repeated with a change of subject, not to exceed six credits.

698 COLLOQUIUM IN BUSINESS 1-3 credits
Prerequisite: permission of graduate director. Study of business administration through a seminar of several lectures in business research and practice. A broad range of topics in business research and issues will be discussed by guests, faculty and graduate students. May be repeated, but will not satisfy degree requirements. Credit/noncredit.

INTERNATIONAL BUSINESS 6800:

506 INTERNATIONAL BUSINESS 3 credits
A basic course in international business which can also provide a platform for more specialized international business courses. Students majoring in IB are required to participate in an approved study abroad program. Foreign students must choose a country other than their home country to satisfy the study abroad requirement. Students will prepare and submit a detailed examination of the business environment visited.

605 INTERNATIONAL BUSINESS ENVIRONMENTS 3 credits
Prerequisites: all MBA foundation courses. The course is intended to develop an understanding of the global business environment and the integrated functions of the multinational corporation.

630 INTERNATIONAL MARKETING POLICIES 3 credits
Explores the problems of formulating and implementing marketing strategies and tactics within complex and changing multinational organizations and international markets. A planning framework is emphasized.

685 MULTINATIONAL CORPORATIONS 3 credits
A course designed to develop an understanding of global businesses, their functions, structures, and strategic options.

690 SEMINAR IN INTERNATIONAL BUSINESS 3 credits
A course covering major issues in international business.

697 INDEPENDENT STUDY IN INTERNATIONAL BUSINESS 1-3 credits
(May be repeated for a total of six credits) Prerequisites: Graduate standing and permission of instructor. Focus on special topics of study and research in international business on an independent basis.

Creative & Professional Arts

ART 7100:

501 SPECIAL TOPICS IN HISTORY OF ART 1-3 credits
Prerequisite: Permission of instructor. A lecture course focusing on a particular movement, period artist, or medium. (May be repeated when a different subject or level of investigation is selected.)

502 MUSEOLOGY 3 credits
Laws and business dealing with museum science, including museum history, staff structure, art handling, storage and presentation, and exhibition preparation.

503 ART AND CRITICAL THEORY 3 credits
Prerequisite: Permission of instructor. This course, designed for both studio and art history majors, surveys the major theoretical currents in contemporary criticism and art history.

505 HISTORY OF ART SYMPOSIUM 1-3 credits
(May be repeated for credit when a different subject is indicated) Prerequisite: Permission of instructor. Lecture, individual research and evaluation, group discussion related to a specific time period or to an artistic problem.

507 METHODS OF ART HISTORY 3 credits
Prerequisite: Permission of instructor. This course explores the history of the discipline and the permutations it has undergone since its establishment in the early years of the nineteenth century.

510 METHODS OF TEACHING ELEMENTARY ART 3 credits
Prerequisite: Admission to Teacher Education Program Art P12. A lecture course presenting the necessary skills and knowledge to successfully implement, plan, instruct, and assess a diverse, art-based curriculum for the elementary school. No credit as elective courses for art majors.

511 METHODS OF TEACHING SECONDARY ART 3 credits
Prerequisite: Admission to Teacher Education Program Art P12. A lecture course providing the knowledge, skills, and experience necessary for the development of curriculum, instruction and assessment appropriate for application at the high school level. No credit as an elective for art majors.

512 STUDENT TEACHING COLOQUIUM 1 credit
Prerequisites: Successful completion of field experience and permission. Corequisite: 5500:694. A lecture course providing the skills and knowledge necessary for art education licensure. Student will gain knowledge in resume building, licensure requirements, and practical pedagogical techniques.

513 SURVEY OF ASIAN ART 3 credits
This course introduces the student to historical, cultural, political, and religious aspects of civilization that influenced the aesthetics of Asian art.

518 MULTIPLES AND MULTICLIVITY 3 credits
Prerequisites: Permission of instructor. Advanced printmaking class recommended for studio majors working with multiples, variability, and production requiring students to define and complete their own projects.

519 SPECIAL TOPICS IN PRINT 3 credits
Prerequisite: Permission of instructor. Investigation in specialized printmaking media like Photomechanics, Digital Printing, and Book Arts among others. May be offered in conjunction with University sponsored residency or travel.

523 COMMUNITY-BASED ART EDUCATION 3 credits
A service learning course for art educators that combines traditional lecture, demonstration, and hands-on workshop to introduce students to contemporary practices in community-based arts.

524 MIDDLE SCHOOL MATERIALS AND TECHNIQUES 3 credits
A lecture course in which students will gain a hands-on approach to developing instructional art materials and lessons for the middle school.

525 CERAMICS: METHODS, MATERIALS, AND CONCEPTS 3 credits
Prerequisites: Successful completion of field experience and permission. Corequisite: 5500:694. A course for art educators exploring visual arts as a vehicle for whole child development and learning across the curriculum in P-K-6 school settings.

ART 7100:

527 ART IN THE INCLUSIVE CLASSROOM 3 credits
Prerequisite: 5100:620. An advanced studio course exploring the use of art with diverse populations through lecture, hands on art making and site visits.

528 ELEMENTARY FIELD EXPERIENCE: ART LICENSURE 1 credit
Corequisite: 7100:610. Instructional field experience in the 7-12 art classroom to apply theory and research into practice.

529 SECONDARY FIELD EXPERIENCE: ART LICENSURE 1 credit
Corequisite: 7100:511. Instructional field experience in the P-K-6 art classroom to apply theory and research into practice.

530 PROFESSIONAL PRACTICES FOR ART EDUCATORS 1 credit
Prerequisites: 510 and 511. A lecture course providing support and guidance to develop the specialized skills and knowledge necessary for employment in the field of Art Education.

554 ADVANCED CERAMICS 3 credits
Prerequisite: Permission. Studio course with emphasis on advanced ceramic techniques.

589 SPECIAL TOPICS IN STUDIO ART 3 credits
(May be repeated for credit when a different subject or level of investigation is indicated). Prerequisite: varies by course. Group investigation of topics of art not offered elsewhere in the curriculum.

590 WORKSHOP IN ART 1-3 credits
(May be repeated for credit when a different subject or level of investigation is indicated to maximum of 12 credits) Prerequisite: advanced standing in art or permission of instructor.

593 ADVANCED SEMINAR IN ART EDUCATION 3 credits
Prerequisite: Acceptance to the MS program in Secondary Education with Visual Art Licensure. This lecture course is an advanced seminar in education introducing students to historical, contemporary, philosophical issues in art education. Contemporary problems, theories and practices in art education also addressed.

594 SPECIAL TOPICS: ART EDUCATION 1-3 credits
(May be repeated for credit when a different subject or level of investigation is indicated) Group investigation of topics of interest to the art education student and not covered elsewhere in the curriculum.

597 INDEPENDENT STUDIES 1-3 credits
(May be repeated for 9 credits) Prerequisites for art majors: completion of at least one advanced course in the major with a grade of A or A- and permission of instructor. Prerequisites for non-art majors: permission of instructor. Investigation in depth of aesthetic and technical problems within a studio-selected area of specialization. Student must present in writing a study plan and time schedule for instructor approval.

598 SPECIAL PROBLEMS IN HISTORY OF ART 1-3 credits
(May be repeated for credit when a different subject or level of investigation is indicated) Prerequisites: 4 credits in art history and permission of instructor. Individual research in art history centered around limited topic, such as specific time period, history of specific techniques, a single artist or movement in art history. No more than 10 credits will be counted toward major.

MUSIC 7500:

525 MUSIC TEACHING METHODOLOGIES FOR GRADUATE STUDENTS 2 credits
Basic pedagogical techniques of the teaching of undergraduate music courses, including preparation of syllabi, methods of evaluation, and instruction on class preparation and presentation.
2 credits
Prerequisite: Undergraduate music theory equivalent to four semesters. Review of basic music theory concepts. Coverage includes the chromatic harmony vocabulary of the 18th, 19th, and 20th centuries.

2 credits
Prerequisite: Undergraduate music history equivalent to four semesters of music history or literature. Review of music history for graduate students. Coverage extends from antiquity to the present. Both reading and listening assignments will be required.

2 credits
Prerequisite: Undergraduate music theory equivalent to four semesters of music history or literature. Review of music history for graduate students. Coverage extends from antiquity to the present. Both reading and listening assignments will be required.

2 credits
To train graduate student in performing and in techniques of percussion instruments. Emphasis on research, literature, performance, and techniques from elementary through advanced levels.

2 credits
Prerequisite: 552. Comparative musicology; acoustics; psychology and physiology of music; aesthetics; theory of music theory; Historical musicology.

2 credits
Prerequisite: 122 or permission of instructor. A survey and evaluation of available software in the various forms of musical instruction. Students will design a course suitable for submission to a programmer.

2 credits
Prerequisite: 361 and 442 or permission. Baton techniques and problems relating to practice, reading and preparation of scores; organization of ensembles; programming; conducting large instrumental ensembles. One hour lab required.

2 credits
Prerequisite: 361 and 442 or permission. Conduction techniques to the choral ensemble, including lead sheet, error detection, tonal development, stylistic analysis and accuracy. One hour lab required.

3 credits
Prerequisite: permission of instructor. A systematic analysis of prevailing schools of pedagogy. Sound production psychology, method books and special problems in teaching addressed.

3 credits
Prerequisite: permission of instructor. After comparative analyses of selected examples, student make original solo guitar arrangements of works written for other solo instruments.

2 credits
Prerequisite: permission of instructor. Study of depth in the four bowed stringed instruments, their teaching and close relationship. Despite obvious difference in physical application of cello and bass from violin and viola, methods of bowed sound production and coloring are closely related. Application of the instruments to solo, chamber and orchestral playing.

2 credits
Prerequisite: permission of instructor. Study of the repertoire in terms of general structure, character, voice, notation, pitch, ornamentation, improvisation, and interpretation of dynamics, rhythm, articulation, and tempo.

2 credits
A study of the repertoire in terms of general structure, character, voice, notation, pitch, ornamentation, improvisation, and interpretation of dynamics, rhythm, articulation, and tempo.

2 credits
Prerequisite: permission of instructor. Study of the repertoire in terms of general structure, character, voice, notation, pitch, ornamentation, improvisation, and interpretation of dynamics, rhythm, articulation, and tempo.

2 credits
Prerequisite: permission of instructor. A study of the repertoire in terms of general structure, character, voice, notation, pitch, ornamentation, improvisation, and interpretation of dynamics, rhythm, articulation, and tempo.

2 credits
A study of the repertoire in terms of general structure, character, voice, notation, pitch, ornamentation, improvisation, and interpretation of dynamics, rhythm, articulation, and tempo.

2 credits
Prerequisite: permission of instructor. A study of the repertoire in terms of general structure, character, voice, notation, pitch, ornamentation, improvisation, and interpretation of dynamics, rhythm, articulation, and tempo.

2 credits
A study of the repertoire in terms of general structure, character, voice, notation, pitch, ornamentation, improvisation, and interpretation of dynamics, rhythm, articulation, and tempo.

2 credits
A study of the repertoire in terms of general structure, character, voice, notation, pitch, ornamentation, improvisation, and interpretation of dynamics, rhythm, articulation, and tempo.

1 credit
Prerequisite: permission of instructor. Investigation of topics not offered in regular curriculum. Graduate student must fulfill additional requirements.

2 credits
Prerequisite: permission of instructor. Study in depth of style, structure, technical demands, manner of setting text, and special performance problems found in masterworks by great choral composers of nine centuries.

2 credits
Prerequisite: permission of instructor. Growth and development of opera from 1600 to present. Includes detailed examination of stylistic and structural changes as well as performance practices.

3 credits
A study of the history of practices and trends in American music education.

3 credits
Prerequisite: 553. Introduction to programming languages for the microcomputer including BASICA, Pascal and Assembler. Programming for microcomputers towards music educational concepts.

3 credits
A study of measurement and evaluation techniques and their application in music education.

2 credits
Prerequisite: permission of instructor. Detailed study of compositional techniques and stylistic traits observed in Western music from Monteverdi through early Beethoven.

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Prerequisite: permission of instructor. Detailed study of compositional techniques and stylistic traits observed in Western music from Monteverdi through early Beethoven.
APPLIED MUSIC  7520:

521-569 APPLIED MUSIC FOR MUSIC MAJORS  2 or 4 credits each
The following courses are intended for a student majoring in one of the programs in the Department of Music. Courses levels correspond approximately to class standing (90 for freshman, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

521 PERCUSSION
522 CLASSICAL GUITAR
523 HARP
524 VOICE
525 PIANO
526 ORGAN
527 VIOLIN
528 VIOLA
529 CELLO
530 STRING BASS
531 TRUMPET OR CORNET
532 FRENCH HORN
533 TROMBONE
534 BARTONE
535 TUBA
536 FLUTE OR PICCOLO
537 OBOE OR ENGLISH HORN
538 CLARINET OR BASS CLARINET
539 BASSOON OR CONTRABASSOON
540 SAXOPHONE
541 HARP/CHORD
542 PRIVATE LESSONS IN MUSIC COMPOSITION  2-4 credits each
[May be repeated] Prerequisites: undergraduate degree in music, graduate standing and/or permission of instructor determined through audition.

521-661 GRADUATE STUDY IN APPLIED MUSIC  2 or 4 credits each
[May be repeated] Prerequisites: undergraduate degree in music, graduate standing and/or permission of instructor determined through audition.

521 PERCUSSION
522 CLASSICAL GUITAR
523 HARP
524 VOICE
525 PIANO
526 ORGAN
527 VIOLIN
575 POLITICAL COMMUNICATION 3 credits
Students explore the relationship between politicians, citizens, and media. Topics include media perception, campaign technologies, advertising, debates, engagement, rhetoric, and attitudes. Theories and methodologies analyzed.

581 FILM AS ART: AN INTRODUCTION TO THE FILM FORUM 3 credits
A study of the role and function of Cinematography, Editing, Sound, and Mise-en-scene as they shape the meaning of the film within the context of the traditional/non-traditional narratives and the documentary structure.

590 COMMUNICATION WORKSHOP 1-3 credits
May be repeated for a total of six credits. Group study or group projects investigating particular phase of media not covered by other courses in curriculum.

600 INTRODUCTION TO GRADUATE STUDY IN COMMUNICATION 3 credits
Introduction to the ideas and scholarship that constitute the various research interests in the department.

602 QUALITATIVE METHODS IN COMMUNICATION 3 credits
Prerequisite: 600. The course covers paradigms underlying qualitative inquiry, major methods of inquiry, and techniques utilized in the communication discipline. The course fosters student’s ability to conduct qualitative research through gathering and analyzing data.

603 QUANTITATIVE METHODS IN COMMUNICATION 3 credits
An introduction to elementary concepts of empirical and quantitative research and their applications in studies of mass media research topics.

606 COMMUNICATION PROBLEMS IN THE BASIC SPEECH COURSE 1 credit
Designed to train graduate student in methods and materials of introductory speech course. Required of all teaching graduate assistants.

608 COMMUNICATION PEDAGOGY 3 credits
Familiarizes students with aspects of teaching communication and media courses at the college level.

624 SURVEY OF COMMUNICATION THEORY 3 credits
Study of dimensions of field of communication: information analysis, social interaction and semantic analysis.

625 THEORIES OF MASS COMMUNICATION 3 credits
Prerequisite: 600 or permission of instructor. A review of theories of mass media and studies exploring the effects of media.

645 INTERCULTURAL COMMUNICATION THEORY 3 credits
Analysis of the impact on the communication process of cultural difference between communities; entities examining literature in intercultural communication.

670 COMMUNICATION CRITICISM 3 credits
Introduces the basic elements, approaches and types of critical discourse as it is relevant to communication and mass media studies.

690 GRADUATE COMMUNICATION INTERNSHIP 1-6 credits
May be repeated for a total of six credits. Prerequisites: must have attained the category of full assistant and be in good standing in the School’s graduate program; must receive permission and approval of internship placement and research proposal. Provides communication graduate students with opportunity to obtain experience and to apply knowledge of academic concepts in a supervised work setting in the communication field.

691 ADVANCED COMMUNICATION STUDIES 3 credits
Prerequisite: May be repeated for a total of six credits. Special topics in communication areas of particular faculty expertise. Consult department for particular topic each semester.

697 GRADUATE COMMUNICATION INTERNSHIP 3 credits
Prerequisite: May be repeated for a total of six credits. Prerequisites: 7800:000 and approval of project. Advanced standing or permission of the school director.

698 MASTER’S PROJECT/PRODUCTION 1-6 credits
Prerequisite: May be repeated for a total of six credits. Prerequisite: Permission of the school director.

699 GRADUATE RESEARCH/READINGS 1-3 credits
(1 credit) Prerequisite: permission. Individual research or independent readings under supervision of member of theatre graduate faculty.

757 CONTEMPORARY THEATRE 3 credits
Detailed examination of representative plays of the contemporary theatre.

555 CREATING PERFORMANCE 3 credits
Prerequisite: May be repeated for a total of six credits. This course introduces devising processes, improvisation, ensemble work, and physical theatre techniques appropriate to the preparation of practical performance projects from sources other than a conventional play.

567 METHOD OF TEACHING ELEMENTARY THEATRE ARTS 3 credits
Prerequisite: Graduate status. Course provides skills, knowledge, and experience essential to teaching effective and creative theatre arts in elementary school through current methods, techniques, and materials.

572 METHODS OF TEACHING SECONDARY THEATRE ARTS 3 credits
Prerequisite: Graduate status. Course presents skills, knowledge, and experiences essential to teaching innovative and creative theatre arts in the secondary school through current methods, techniques, and materials.

575 ACTING FOR THE MUSICAL THEATRE 3 credits
Prerequisite: Permission. A scene study course in analyzing and performing roles in American musicals. Accompanist provided.

576 WORKSHOP IN THEATRE ARTS 1-3 credits
Prerequisite: May be repeated for a total of six credits. Prerequisite: Advanced standing or permission. Group study or group projects investigating particular phases of theatre arts not covered by other courses in current.

600 RESEARCH AND WRITING TECHNIQUES 3 credits
Exploration of the basic research tools and methods appropriate to the discipline, including utilization of the computer. Guidelines for writing thesis.

603 SPECIAL TOPICS IN THEATRE ARTS 1-4 credits
May be repeated as different subject areas are covered, but no more than 12 credits may be applied toward M.A. degree. Traditionally, no more than six credits total toward M.A. degree. Projects approved by Graduate Arts Committee. Guidelines for writing thesis.

641 PROBLEMS IN DIRECTING 3 credits
Advanced directing course with special emphasis on staging of complex plays from all periods of drama.

645 SEMINAR IN DRAMATIC LITERATURE 3 credits
Representative Western stage play (non-American) are examined in theatrical, historical, and critical/theoretical contexts.
Health Sciences & Human Services

FAMILY AND CONSUMER SCIENCES 7400:

500 NUTRITION COMMUNICATION AND EDUCATION SKILLS
- Permission of instructor: Theory and development of communication and nutrition counseling skills essential to dietetics practice; interpersonal communication; interviewing; nutrition counseling; education techniques, media, and current technology.

501 AMERICAN FAMILIES IN POVERTY
- Permission of instructor. Overview of issues, trends, and social policies affecting American families living in poverty. Online section available.

502 ADVANCED FIBER ARTS
- Permission of instructor. An advanced course that builds on the skills learned in the prerequisite, with the intention of reaching a caliber suitable for one of the many professional organizations in this field, including business aspects such as market analysis and product development.

503 ADVANCED FOOD PREPARATION
- Permission: permission. Study of advanced techniques of food preparation. Introduction to and interpretation of classic and foreign cuisines. Emphasis on individualized experience, skill development and evaluation of procedures and results.

504 MIDDLE CHILDHOOD AND ADOLESCENCE
- 3 credits.

505 FAMILY FINANCIAL MANAGEMENT
- Analysis of the family as a financial unit including financial problems and their resolution, decision-making patterns and financial practices behavior. Cases, exercises, problems and computer analysis.

507 FCS OCCUPATIONAL EMPLOYMENT EXPERIENCE
- Provides student with knowledge of current business and industrial practices at a level minimal to ensure competence. Emphasis on computer skills and application, current trends in the food service industry.

513 FOOD SYSTEMS MANAGEMENT II
- Emphasis on development of abilities and strengths in management of food service establishments. Includes study of skill areas such as budgeting, personnel management, equipment management, and human resources management.

514 FOOD SYSTEMS MANAGEMENT II CLINICAL
- Emphasis on development of abilities and strengths in management of food service establishments. Includes study of skill areas such as budgeting, personnel management, equipment management, and human resources management.

518 HISTORY OF INTERIOR DESIGN I
- The study of nineteenth and twentieth-century furnishings and interiors, with emphasis on the social-cultural influences shaping their development.

519 HISTORY OF INTERIOR DESIGN II
- The study of nineteenth and twentieth-century furnishings and interiors, with emphasis on the social-cultural influences shaping their development.

522 TEXTILES FOR INTERIORS
- Permission: permission. Study of physical, aesthetic, comfort, care, and durability properties of textile products and testing procedures to determine suitability for desired end uses and as it relates to interior fabrics.

524 NUTRITION IN THE LIFE CYCLE
- Permission: permission. Study of the physiological basis for nutritional requirements; interrelating factors which affect growth, development, maturation and nutritional status from conception through the elderly years.

525 TEXTILES FOR APPAREL
- Permission: permission. Evaluation of physical, aesthetic, comfort, care and durability properties of textile products and testing procedures to determine suitability for desired end uses.

526 HUMAN NUTRITION
- Permission: permission. Introduction to gross food systems, food production processes, and the role of nutrition in maintaining health and preventing disease.

527 GLOBAL ISSUES IN TEXTILES AND APPAREL
- Permission: permission. Examine the global structure and scope of the textile and apparel industries emphasizing an economic perspective.

528 NUTRITION IN MEDICAL SCIENCE I

529 NUTRITION IN MEDICAL SCIENCE II CLINICAL

530 PROFESSIONAL PREPARATION SKILLS IN FAMILY & CONSUMER SCIENCES
- Permission: permission. Emphasis on abilities and strengths in the professional areas in which the family and consumer sciences graduate is expected to function, including communication, nutrition, human resources management, and human development.

531 TEXTILE CONSERVATION
- Study of the history of textiles and their conservation. Emphasis on techniques and materials used in the conservation of textile artifacts.

532 HISTORY OF FASHION
- Permission: permission. Study of western fashion, textiles, and designers from the eighteenth century to the present, with emphasis on social-cultural influences.

534 FAMILY COURSES
- Study of family stress and crisis including internal and external variables and their influence on degree of disorganization, coping and recovery. Includes theory, research and application dimensions.

541 FAMILY RELATIONSHIPS IN MIDDLE AND LATER YEARS
- Study of family patterns and problems during middle and later years of life with emphasis on psychological and biological changes and economic and social adequacy. Research and trends in gerontology.

542 HUMAN SEXUALITY
- Permission: permission of instructor. Introduction to problems and values. Emphasis is on the role of values in intimate relationships, the diverse dimensions of sexual responsibility.

543 NUTRITION ASSESSMENT
- Corequisites: 528 or permission. Application of principles of nutrition and assessment. Analysis and interpretation of current research and trends in nutrition assessment.

544 NUTRITION IN MEDICAL SCIENCE LONG TERM CARE - CLINICAL
- Corequisites: CP graduate students only. Clinical experiences in long-term care facilities for application of principles of nutrition in the elderly.

546 CULTURE, ETHNICITY AND THE FAMILY
- Permission: permission. Study of the role of culture and ethnicity in adaptation of the family system to environment. Program applications considered. Online section available.

548 BEFORE AND AFTER SCHOOL CHILD CARE
- Study of the development, implementation and evaluation of school-age child-care programs for before and after school and vacation periods.

549 FLAT PATTERN DESIGN
- Permission: permission. Instructor: Theory and experience in clothing design using flat pattern techniques.

551 CHILD IN THE HOSPITAL
- Permission: permission. Seminar dealing with special needs and problems of hospitalized children.

552 CHILD, ILLNESS AND LOSS
- This course examines the phenomena of illness, loss and bereavement in modern society with a special emphasis on children and families.

553 FACILITATING SUPPORT GROUPS
- Theories, strategies and skills needed to facilitate support groups for children and adults are studied using a variety of approaches including participation in a support group.

555 PRACTICUM EXPERIENCE IN A CHILD LIFE PROGRAM
- Corequisites: 561 or permission of instructor. Field experience in a child life program and classroom activities including critical analysis of a currently functioning program and program administration.

560 ORGANIZATION AND SUPERVISION OF CHILD-CARE CENTERS
- Theory, principles and procedures used in establishing and operating centers for infants, toddlers, preschool and school-age children.

561 CASE MANAGEMENT FOR CHILDREN AND FAMILIES I
- Provides an overview of Case Management basics in a multi-systems collaborative context. Includes roles, values, principles, state, service systems, and service coordination.

562 CASE MANAGEMENT FOR CHILDREN AND FAMILIES II

563 COMMUNITY NUTRITION I - LECTURE
- Corequisite: 580. Field placement in area agencies offering nutrition services. Study of the agency's goals, organization, and philosophy of nutritional care. Prerequisites: CP students only.

564 COMMUNITY NUTRITION II - LECTURE
- Corequisite: 580. Field placement in area agencies offering nutrition services. Study of the agency's goals, organization, and philosophy of nutritional care. Prerequisites: CP students only.

565 COMMUNITY NUTRITION III - LECTURE
- Corequisite: 561. Field placement in area agencies offering nutrition services. Study of the agency's goals, organization, and philosophy of nutritional care. Prerequisites: CP students only.

566 DEVELOPMENTS IN FOOD SCIENCE
- Corequisite: 580. Study of the development of food science and technology as it affects characteristics of foods. Critical evaluation of current basic and applied research emphases.

576 HUMAN NUTRITION

578 NUTRITION IN CLINICAL SETTINGS
- Corequisites: 561. Field placement in area agencies offering nutrition services. Study of the agency's goals, organization, and philosophy of nutritional care. Prerequisites: CP students only.

580 COMMUNITY NUTRITION I - LECTURE
- Corequisite: 580. Field placement in area agencies offering nutrition services. Study of the agency's goals, organization, and philosophy of nutritional care. Prerequisites: CP students only.

581 COMMUNITY NUTRITION I - CLINICAL
- Corequisite: 580. Field placement in area agencies offering nutrition services. Study of the agency's goals, organization, and philosophy of nutritional care. Prerequisites: CP students only.

582 COMMUNITY NUTRITION II - LECTURE
- Corequisites: 561. Field placement in area agencies offering nutrition services. Study of the agency's goals, organization, and philosophy of nutritional care. Prerequisites: CP students only.

583 COMMUNITY NUTRITION II - CLINICAL
- Corequisite: 561. Field placement in area agencies offering nutrition services. Study of the agency's goals, organization, and philosophy of nutritional care. Prerequisites: CP students only.

584 HOSPITAL SETTINGS, CHILDREN, AND FAMILIES
- Permission: permission. Focuses on hospital as a major social institution; introduces procedures and functions of the hospital; roles played by various hospital personnel; and the psychological and biological changes and economic and social adequacy. Research and trends in gerontology.

586 NUTRITION AND PHYSICAL ACTIVITY
- Permission: permission. Emphasis on physical activity and the role of nutrition in affecting characteristics of foods. Critical evaluation of current basic and applied research emphases.

590 PRINCIPLES OF NUTRITION
- Corequisites: 583. Field placement in area agencies offering nutrition services. Study of the agency's goals, organization, and philosophy of nutritional care. Prerequisites: CP students only.

591 PROFESSIONAL PREPARATION FOR DIETETICS
- Corequisites: 583. Field placement in area agencies offering nutrition services. Study of the agency's goals, organization, and philosophy of nutritional care. Prerequisites: CP students only.

592 NUTRITIONAL ASSESSMENT
- Corequisites: 580 and 581. Field placement in area agencies offering nutrition services. Study of the agency's goals, organization, and philosophy of nutritional care. Prerequisites: CP students only.

593 NUTRITIONAL ASSESSMENT
- Corequisites: 580 and 581. Field placement in area agencies offering nutrition services. Study of the agency's goals, organization, and philosophy of nutritional care. Prerequisites: CP students only.

594 NUTRITION IN THE LIFE CYCLE
- Corequisites: 580 and 581. Field placement in area agencies offering nutrition services. Study of the agency's goals, organization, and philosophy of nutritional care. Prerequisites: CP students only.
<table>
<thead>
<tr>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>593 NUTRITION FOR ATHLETES</td>
<td>3</td>
<td>Study of metabolism before, during, and after exercise. Factors affecting nutrient needs and peak performance of different athletic populations.</td>
</tr>
<tr>
<td>594 PRACTICUM IN PARENT AND FAMILY EDUCATION</td>
<td>3</td>
<td>Prerequisites: 593, 605. Provides on-site opportunities to apply parent and family education skills. Includes a review of strategies, ethical considerations, and supervision by the on-site principal.</td>
</tr>
<tr>
<td>595 CHILD LIFE INTERNSHIP</td>
<td>6</td>
<td>Prerequisite: Acceptance into the program. Field experience in a child life program at an approved pediatric facility under the supervision of a Certified Child Life Specialist.</td>
</tr>
<tr>
<td>596 PARENT EDUCATION</td>
<td>3</td>
<td>Prerequisite: Permission of instructor. Application that reviews and analyzes various parent education techniques with major emphasis on the evaluation of parent education programs. Online course.</td>
</tr>
<tr>
<td>598 STUDENT TEACHING SEMINAR</td>
<td>1credit</td>
<td>Contd. 700-800, 800. Seminar for students currently enrolled in Family and Consumer Sciences student teaching. Emphasis on block and lesson plan development, licensure, portfolio development, PRAKTIK III, professional development, and student teaching reflections.</td>
</tr>
<tr>
<td>602 FAMILY IN LIFE-SPAN PERSPECTIVE</td>
<td>3</td>
<td>Study of individual and family development across life span. Emphasis on adjustment patterns and interpersonal competence. Implications for education theory research and social policy.</td>
</tr>
<tr>
<td>604 ORIENTATION TO GRADUATE STUDIES IN FAMILY AND CONSUMER SCIENCES</td>
<td>1credit</td>
<td>Introduction to the concepts and processes necessary for graduate study in the interdisciplinary field of family and consumer sciences.</td>
</tr>
<tr>
<td>605 DEVELOPMENTAL PARENT-CHILD INTERACTIONS</td>
<td>3</td>
<td>Prerequisite: Permission of instructor. Study of reciprocal interactions between parent and child from birth to adulthood. Consideration of cross-cultural, historical, and societal influences, and various family characteristics and structures. Online course.</td>
</tr>
<tr>
<td>607 FAMILY DYNAMICS</td>
<td>2</td>
<td>Development of techniques in family and consumer sciences programs utilizing role theory, exchange theory and systems theory as understood through the study of the family across the life cycle.</td>
</tr>
<tr>
<td>610 CHILD DEVELOPMENT THEORIES</td>
<td>3</td>
<td>Prerequisite: Permission of instructor. A comparative study of developmental theories of the child in the family context. Application of the theories to child rearing in the family will be emphasized.</td>
</tr>
<tr>
<td>623 SUPPORT SYSTEMS FOR INDIVIDUALS AND FAMILIES</td>
<td>2</td>
<td>Prerequisite: Full admission to the SLP program or permission of the school director. Introduction to experimental design in field of communicative disorders.</td>
</tr>
<tr>
<td>644 THEORIES OF FASHION</td>
<td>3</td>
<td>In-depth analysis of the theories underlying fashion and evaluation of current research related to the fashion.</td>
</tr>
<tr>
<td>646 DEVELOPMENT OF TECHNIQUES IN FAMILY AND CONSUMER SCIENCES</td>
<td>2</td>
<td>Prerequisites: Full admission to the SLP program or permission of the school director. Development of techniques in family and consumer sciences programs utilizing role theory, exchange theory and systems theory as understood through the study of the family across the life cycle.</td>
</tr>
<tr>
<td>665 DEVELOPMENT IN INFANCY AND EARLY CHILDHOOD</td>
<td>3</td>
<td>Analysis of research and theoretical frameworks regarding infant and child development from conception through age five. Implications for guidance and education.</td>
</tr>
<tr>
<td>671 SOCIAL, PSYCHOLOGICAL AND ENVIRONMENTAL ASSESSMENT OF DRESS AND THE NEAR ENVIRONMENT</td>
<td>3</td>
<td>Study of dress and the near environment as they relate to human behavior at the micro and macro level.</td>
</tr>
<tr>
<td>693 HISTORY AND CONCEPTUAL BASES OF FAMILY AND CONSUMER SCIENCES</td>
<td>3</td>
<td>History of the field of family and consumer sciences with emphasis on the leaders and the conceptual basis of the field.</td>
</tr>
<tr>
<td>695 RESEARCH METHODS IN FAMILY AND CONSUMER SCIENCES</td>
<td>3</td>
<td>A study of family and consumer sciences research methods emphasizing concept and theoretical development, policy application and ethical considerations.</td>
</tr>
<tr>
<td>696 PRACTICUM IN FAMILY AND CONSUMER SCIENCES</td>
<td>3</td>
<td>Prerequisite: permission of advisor/instructor. A minimum of 150 hours of supervised experience in an approved community setting to acquire skills related to area of specialization.</td>
</tr>
<tr>
<td>697 RESEARCH IN PARENTING AND COMMUNITY</td>
<td>5</td>
<td>Prerequisite: permission of thesis advisor. Supervised reading and research related to approved thesis topic. May be repeated once.</td>
</tr>
<tr>
<td>698 MASTER’S PROJECT</td>
<td>3</td>
<td>Prerequisite: Permission of advisor. The development, implementation and evaluation of a community-based supervised project which makes a significant contribution to the field and may be published.</td>
</tr>
<tr>
<td>699 MASTER’S THESIS</td>
<td>5</td>
<td>Prerequisite: permission of advisor. Supervised research in a specialized area of family and consumer sciences which makes a contribution to the field and may lead to publication.</td>
</tr>
</tbody>
</table>

**SPEECH-LANGUAGE PATHOLOGY AND AUDIOLOGY 7700:**

<table>
<thead>
<tr>
<th>Course Title</th>
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</tr>
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<tbody>
<tr>
<td>530 ASPECTS OF NORMAL LANGUAGE DEVELOPMENT</td>
<td>3</td>
<td>(Not open to communicative disorders major) Introduction to acquisition and development of language – phonologically, semantically and syntactically. Relates language acquisition to perceptual development of child and looks at function of language in individual, family and school.</td>
</tr>
<tr>
<td>534 AUGMENTATIVE COMMUNICATION AND SPEECH-LANGUAGE PATHOLOGISTS</td>
<td>2</td>
<td>Prerequisite: 7700/7010 or permission of the school director. This course introduces the multicultural considerations faced by audiologists and speech-language pathologists providing services to families and individuals with communication disorders.</td>
</tr>
<tr>
<td>540 SPEECH-LANGUAGE AND HEARING DISORDERS IN THE PUBLIC SCHOOLS</td>
<td>2</td>
<td>(Not open to communicative disorders major) Nature, causes and treatment of speech, hearing and language disorders in public schools. Special reference to role of classroom teacher in identifying students with suspected problems and in working with school clinician.</td>
</tr>
<tr>
<td>541 ORGANIZATION AND ADMINISTRATION: PUBLIC SCHOOL SPEECH-LANGUAGE AND HEARING PROGRAMS</td>
<td>1 credit</td>
<td>Prerequisites: Senior or graduate standing or permission. For clinicians who plan to work in public school systems. Covers program requirements and professional ethical issues imposed by state and federal laws.</td>
</tr>
<tr>
<td>590 EARLY INTERVENTION FOR PRESCHOOLERS</td>
<td>2</td>
<td>Prerequisite: Graduate status. This course explores model programs currently being offered to children five to ten years old, with and without disabilities at two different levels.</td>
</tr>
<tr>
<td>595 DEVELOPMENTAL DISABILITIES</td>
<td>2</td>
<td>Prerequisite: Graduate status. Current practice related to clinical intervention designed for individuals with developmental disabilities. Explores the use of the natural environment and the computer as intervention tools.</td>
</tr>
<tr>
<td>596 WORKSHOP: SPEECH-LANGUAGE PATHOLOGY AND/OR AUDIOLOGY</td>
<td>1 credits</td>
<td>(May be repeated for a total of four credits) Prerequisite: permission. Group investigation of the particular phase of speech pathology and/or audiology not offered by other course.</td>
</tr>
<tr>
<td>610 INSTRUMENTATION IN SPEECH PATHOLOGY AND AUDIOLOGY</td>
<td>2</td>
<td>Principles and use of clinical and research instrumentation in speech and hearing.</td>
</tr>
<tr>
<td>611 RESEARCH METHODS IN COMMUNICATIVE DISORDERS I</td>
<td>3</td>
<td>Prerequisite: permission of advisor or permission of the school director. An introduction to experimental design in field of communicative disorders.</td>
</tr>
<tr>
<td>620 ARTICULATION</td>
<td>2</td>
<td>Prerequisite: Full admission to the SLP program or permission of the school director. Historically background, current theories and research related to etiology, evaluation and treatment articulation and phonology disorders.</td>
</tr>
<tr>
<td>623 SUPPORT SYSTEMS FOR INDIVIDUALS AND FAMILIES WITH COMMUNICATIVE DISORDERS</td>
<td>2</td>
<td>Prerequisite: Full admission to the SLP program or permission of the school director. Enhances students' abilities to interview, provide educational information, and create support systems for persons with communicative handicaps and their families.</td>
</tr>
<tr>
<td>624 NEUROGENIC SPEECH AND LANGUAGE DISORDANS</td>
<td>3</td>
<td>Prerequisites: Full admission to the SLP program or permission of the school director. Course presents current theories and research related to neuroanatomical etiology, diagnosis, classification, and treatment of adults with neurologically based communication disorders.</td>
</tr>
<tr>
<td>625 MOUTH AND LIP PALATE</td>
<td>2</td>
<td>Prerequisite: Full admission to the SLP program or permission of the school director. Background and current research related to normal and velopharyngeal function as well as evaluation, diagnosis, and treatment of voice and cleft palate.</td>
</tr>
<tr>
<td>627 STUTTERING: THEORIES AND THERAPY</td>
<td>2</td>
<td>Prerequisite: Full admission to the SLP program or permission of the school director. This course provides information and discussion on theories, classification, diagnosis, and treatment of fluency disorders.</td>
</tr>
<tr>
<td>628 TOPICS IN DIFFERENTIAL DIAGNOSAN OF SPEECH AND LANGUAGE DISORDERS</td>
<td>2</td>
<td>(May be repeated for a total of four credits) Prerequisite: Full admission to the SLP program or permission of the school director.</td>
</tr>
<tr>
<td>630 CLINICAL ISSUES IN CHILD LANGUAGE</td>
<td>4</td>
<td>Prerequisite: Full admission to the SLP program or permission of the school director. Presents current research perspectives on child language disorders and clinical methodologies in language assessment and intervention.</td>
</tr>
<tr>
<td>631 ACQUIRED BRAIN INJURY</td>
<td>3</td>
<td>Prerequisites: Full admission to the SLP program or permission of the school director. A study of behavioral deficits, stages of recovery, assessment techniques, and principles of cognitive rehabilitation related to closed head injury.</td>
</tr>
<tr>
<td>632 DYSPHAGIA</td>
<td>3</td>
<td>Prerequisite: Full admission to the SLP program or permission of the school director. Outlines etiology, assessment, and treatment for infants, children, and adults with feeding and swallowing disorders (dysphagia). It provides actual experiences in diagnosis and feeding therapy approaches.</td>
</tr>
<tr>
<td>633 PROFESSIONAL ISSUES</td>
<td>2</td>
<td>Prerequisite: Full admission to the SLP program or permission of the school director. Ethical, moral, and legal processes and issues. For students preparing to sit for certification exams.</td>
</tr>
<tr>
<td>639 AUDIOLOGY FOR THE SPEECH-LANGUAGE PATHOLOGIST</td>
<td>3</td>
<td>Prerequisite: Full admission to the SLP program or permission of the school director. Advance knowledge and related communicative disorders with special orientation toward the speech-language pathologist.</td>
</tr>
<tr>
<td>640 ADVANCED CLINICAL PRACTICAL PEDIATRIC PATHOLOGY</td>
<td>1 credits</td>
<td>Prerequisite: Full admission to the SLP program or permission of the school director. May be repeated. Supervised clinical praxis in evaluation and treatment of speech and language disorders, includes preparation of written reports.</td>
</tr>
</tbody>
</table>
724 HISTORY OF AUDIOLOGY
Preliminary to admission to the Au.D. program or permission of instructor. An examination of the history of deafness/hearing impairment and the profession of audiology.

2 credits

725 MEDICAL MANAGEMENT OF AUDITORY DISORDERS
Preliminary to 712. A study of the multidisciplinary approach to medical/surgical management of patients with auditory and vestibular disorders.

3 credits

726 ELECTROPHYSIOLOGICAL TECHNIQUES IN AUDIOPEDAGOGY
Preliminary to 700: Study of the use of diagnostic audiologic, including ABR, MLA, ECoG, ENG, ABR, P500, VER, and SSER.

3 credits

727 CULTURAL ISSUES IN DEAFNESS
Preliminary to the Au.D. program or permission of instructor. An introduction to Deaf Culture and the audiologist’s roles and responsibilities in planning treatment with members of the deaf community.

2 credits

728 SEMINAR IN AUDIOLOGY
Preliminary to the Au.D. program or permission of instructor. Selected current topics in audiologic emphasis on review of current literature. Course may be repeated up to six credits.

3 credits

729 RESEARCH PROJECT IN AUDIOLOGY
Preliminary to the Au.D. program or permission of instructor. Completion of a Doctoral Research Project including data collection, analysis, write-up, and oral presentation.

3 credits

730 PRACTICE MANAGEMENT IN AUDIOLOGY
Preliminary to the Au.D. program or permission of instructor. Study of issues which impact the management of audiological practices, including establishing a private practice, reimbursement, marketing, record keeping and professional liability.

4 credits

731 FOURTH YEAR SEMINAR
Preliminary to the Au.D. program or permission of instructor. Corequisite: 745 or 750 or permission of instructor. In-depth consideration of topics/issues in the practice of audiology. Repeatable up to six credits.

1 credit

741 DIRECTED OBSERVATION IN AUDIOLOGY I
Preliminary to 714. Supervised clinic practicum in audiology. Repeatable up to six credits.

1 credit

742 DIRECTED OBSERVATION IN AUDIOLOGY II
Preliminary to 715. Supervised clinic practicum in audiology. Directed observation of clinical practice including audiological diagnosis and audiologic rehabilitation. Repeatable up to six credits.

1 credit

743 CLERKSHIP I
Corequisite: 709. Clinical practicum in audiology during which students perform discrete tasks under supervision. Repeatable for up to 6 credits.

1 credit

744 CLERKSHIP II
Corequisite: 743. Supervised clinical practicum in audiology during which students will perform discrete clinical tasks while under supervision. Repeatable for up to 6 credits.

1 credit

745 INTERNSHIP IN AUDIOLOGY I
Preliminary to 714 and permission of instructor. Supervised intern practicum in audiology requiring the independent performance of basic audiological assessments, including hearing aid management. Repeatable up to 8 credits.

2 credits

746 INTERNSHIP IN AUDIOLOGY II
Preliminary to 745 and permission. Supervised clinical practicum in audiology requiring the independent performance of diagnostic audiological assessment, hearing aids, and audiological rehabilitation procedures. Repeatable up to eight credits.

2 credits

747 GRADUATE AUDIOLOGIST I
Corequisites: 746. Supervised clinical practicum in audiology which encompasses audiological assessments and audiological rehabilitation. Repeatable for up to 9 credits.

3 credits

748 GRADUATE AUDIOLOGIST II
Corequisites: 747 and permission. Supervised clinical practicum in audiology requiring the independent performance of diagnostic and rehabilitation, and vestibular assessment and rehabilitation. Repeatable for up to 9 credits.

3 credits

749 GRADUATE AUDIOLOGIST III
Corequisites: 748 and successful completion of the PRAXIS Examination. Corequisites: 731. Supervised clinical practicum in audiology requiring the independent performance of audiological assessment procedures, audiological rehabilitation, and vestibular assessment and rehabilitation. Repeatable up to 24 credits.

8 credits

750 GRADUATE AUDIOLOGIST IV
Corequisites: 749 and successful completion of the PRAXIS Examination. Corequisites: 731. Supervised clinical practicum in audiology requiring the performance of audiological assessment procedures, audiological rehabilitation, and vestibular assessment and rehabilitation. Repeatable up to 24 credits.

4 credits

751 GRADUATE AUDIOLOGIST V
Corequisites: 750 and permission. Corequisites: 731. Supervised clinical practicum in audiology required the independent performance of audiological assessment procedures, audiological rehabilitation, and vestibular assessment and rehabilitation. Repeatable up to 9 credits.

3 credits

899 DOCTORAL ENROLLMENT/RESIDENCY
May be repeated up to 8 credits. Preliminary to Graduate standing in the Doctor of Audiology program and permission of instructor. Continuous enrollment course to maintain status in Au.D. program.

1-8 credits

139
602 FOUNDATION FIELD PRACTICUM 3 credits
Prerequisites: second of two field practicum courses to be taken in the first year of the MSW program. 400 clock hour, supervised internship at a social service agency. Credit/noncredit. (Offered only Spring Semester.)

603 ADVANCED FIELD PRACTICUM 3 credits
Prerequisites: first of two field practicum courses to be taken in the second year of the MSW program. A two-semester, 600 clock hour, supervised internship in a social service agency, based on the student's concentration and specialization. Credit/noncredit. (Offered only Fall Semester.)

604 ADVANCED FIELD PRACTICUM 3 credits
Prerequisites: second of two field practicum courses to be taken in the second year of the MSW program. A two-semester, 600 clock hour, supervised internship in a social service agency, based on the student's concentration and specialization. Credit/noncredit. (Offered only Spring Semester.)

605 SOCIAL WORK PRACTICE WITH SMALL SYSTEMS 3 credits
Prerequisite: graduate status or permission of instructor. Provides the basic knowledge, skills, professional ethics and values necessary for beginning social work practice with small client systems.

606 SOCIAL WORK PRACTICE WITH LARGE SYSTEMS 3 credits
Prerequisite: 605 or permission of instructor. Provides the basic knowledge, skills, and strategies of social work practice with task groups, organizations, and communities.

607 ADVANCED PRACTICE WITH SMALL SYSTEMS I 3 credits
Prerequisite: second level graduate student or permission of instructor. This course focuses on the differential assessment of individuals, families and small groups and the application of a range of theory bases.

608 ADVANCED PRACTICE WITH SMALL SYSTEMS II 3 credits
Prerequisite: 607 or permission of instructor. As a continuation of Advanced Practice I, this course focuses on the development and implementation of intervention strategies with and on behalf of small systems.

611 DYNAMICS OF RACISM AND DISCRIMINATION 3 credits
Prerequisite: graduate status or permission of instructor. Provides knowledge of anatomy and understanding the factors leading to and sustaining racism, sexism, homophobia, and the like, on both macro and micro levels.

622 FUNDAMENTALS OF RESEARCH I 3 credits
Prerequisite: graduate status or permission of instructor. This course provides an introduction to the logic of scientific inquiry, the research process, and the relationship between research and social work practice.

623 FUNDAMENTALS OF RESEARCH II 3 credits
Prerequisite: 622; statistics course; or permission of instructor. Provides students with an understanding of quantitative and qualitative methodologies and the use of descriptive and inferential statistics in analyzing research data.

631 HUMAN BEHAVIOR AND SOCIAL ENVIRONMENT: LARGE SOCIAL SYSTEMS 3 credits
Prerequisite: graduate status or permission of instructor. This course focuses on understanding the human behavior and life cycle development of people as individuals and as members of families and other small groups.

632 HUMAN BEHAVIOR AND SOCIAL ENVIRONMENT: LARGE SYSTEMS 3 credits
Prerequisite: 631 or permission of instructor. This course focuses on the human behavior of people as members of larger social systems including formal and informal organizations, communities, and institutions.

646 SOCIAL WELFARE POLICY I 3 credits
Prerequisite: graduate status or permission of instructor. Examines the historical, philosophical, and value bases of social welfare as well as the relationship between social work practice, policy, and policy delivery.

647 SOCIAL WELFARE POLICY II 3 credits
Prerequisite: 646 or permission of instructor. This course prepares students with the beginning skills to engage in social problem/policy analysis.

650 ADVANCED STANDING INTEGRATIVE SEMINAR 6 credits
Prerequisite: advanced standing. Provides an integrative view of social work practice with an emphasis on values, foundation knowledge and skills, and evaluation of professional implications.

656 SOCIAL WORK PRACTICE WITH GAYS AND LESBIANS 3 credits
Prerequisite: graduate status or permission of instructor. This course focuses on gay and lesbian culture and lifestyles, discrimination based on sexual orientation, and intervention strategies appropriate to practice with gays and lesbians.

658 PSYCHOPATHOLOGY AND SOCIAL WORK 3 credits
Prerequisite: second level graduate student or permission of instructor. An examination of the symptomology, theoretical frameworks and social aspects of mental illness, and the role of the social worker in the treatment of mental disorders.

664 DIRECT PRACTICE RESEARCH 3 credits
Prerequisite: second level graduate student or permission of instructor. Provides students with advanced knowledge in research methodology of single system design and skills to implement an evaluation study of their intervention with clients.

685 SUPERVISION AND STAFF DEVELOPMENT 3 credits
Prerequisite: second level graduate student or permission of instructor. An examination of the purpose, functions, and theories of supervision; the impact of cultural, ethnic and racial differences on supervision/staff development; and problems encountered.

671 SOCIAL WORK ADMINISTRATION 3 credits
Prerequisite: second level graduate student or permission of instructor. This course focuses on supervisory and managerial roles and functions as they are carried out at different hierarchical levels in human service organizations.

672 COMMUNITY ORGANIZATION AND PLANNING 3 credits
Prerequisite: must have completed first year of master's program. Required for all second year students concentrating on Casework Practice sequence. Prepares students to work in communities and in public and private agencies.

673 STRATEGIES OF COMMUNITY ORGANIZATION 3 credits
Prerequisite: second level graduate student or permission of instructor. Emphasizes the historical development and application of several community strategies used to identify community needs, meet these needs, and empower and empower and engage community groups.

674 COMMUNITY, ECONOMIC SYSTEMS AND SOCIAL POLICY ANALYSIS 3 credits
Prerequisite: second level graduate student or permission of instructor. This course provides a base for understanding economic systems and analyzing the political framework at federal, state, and local levels and their impact on communities.

675 PROGRAM EVALUATION 3 credits
Prerequisite: second level graduate student or permission of instructor. This course provides students with methods for evaluating programs in agencies, including approaches, measures, development, design, data collection and analyses employed in program outcome research.

676 FISCIAL MANAGEMENT OF SOCIAL AGENCIES 3 credits
Prerequisite: second level graduate student or permission of instructor. This elective course concentrates on the financial aspects of social administration, management, principles of economic and fiscal exchange, accountability and fiscal accounting.

680 AGING AND SOCIAL WORK PRACTICE 3 credits
Prerequisite: second level graduate student or permission of instructor. An examination and evaluation of aging programs and policies, demographic trends and the changing role of social work service providers.

681 AGING: POLICIES AND PROGRAMS 3 credits
Prerequisite: second level graduate student or permission of instructor. An examination and evaluation of aging programs and policies, demographic trends and the changing role of social work service providers.

685 SOCIAL WORK PRACTICE: FAMILY AND CHILDREN 3 credits
Prerequisite second level graduate student or permission of instructor. Examines the major problems encountered by children and families in the life cycle and explores intervention strategies and programs to address their needs and strengths.

686 SOCIAL WELFARE POLICY AND SERVICES: FAMILY AND CHILDREN 3 credits
Prerequisite: second level graduate student or permission of instructor. Examines the federal and state laws, policies, and services governing children and families, including the supportive, supplemental and substitutive aspects of services.

690 ADVANCED PRACTICE AND POLICY IN SUBSTANCE ABUSE 3 credits
Prerequisite: second level graduate student or permission of instructor. This course provides students the knowledge and skill base necessary for managing and practicing with people affected by substance abuse, or secondary, family providers, and preventive work.

691 SOCIAL WORK VALUES AND ETHICS 3 credits
Prerequisite: Full admission to the MSW program. This elective ethics course focuses on practical or applied ethics. Fundamentals of moral reasoning and ethical decision-making in social work practice are reviewed. Utilized are case materials that illustrate application of normative ethics and standards in the NASW Code of Ethics.

692 GROUP WORK PRACTICE 3 credits
Prerequisite: Full admission to the MSW program. Examines the fundamental knowledge and skills required for social work practice with groups across multiple client systems. Knowledge of social work values and ethical practice is related to all aspects of group work. Emphasis on group values is appropriately balanced.

694 THEORIES AND PROCEDURES IN ADDICTION STUDIES 3 credits
Prerequisite: Full admission to the MSW program. Examines the role of the social worker in the treatment of addiction. Emphasis is given to the concept of addiction and the addiction process in people as individuals and families; effects of addiction on individuals; effects of addiction in individuals; techniques and practices that have positive outcomes in treatment and prevention fields; and professional issues facing the addiction field.

695 HEALTH CARE: PLANNING AND POLICY ISSUES 3 credits
Prerequisite: second level graduate student or permission of instructor. This course is designed to orient students to the planning and policy issues in health care, andhow social work interface with health care.

696 EPIDEMIOLOGIC ANALYSIS OF HEALTH AND SOCIAL PROBLEMS 3 credits
Prerequisite: second level graduate student or permission of instructor. This course applies the epidemiological method to social work practice, such as treatment groups, making administrative decisions, in planning and evaluation, and doing preventive work.

Nursing

NURSING 8200:

509 INTERNATIONAL HEALTH 2 credits
Prerequisite: Admission to MSN program. A comparison of nursing roles and responsibilities in an international environment. The influence of education, ethics, government, and demographics on health and geography on health care.

512 GLOBAL PERSPECTIVES OF HEALTH AND HEALTH CARE 2 credits
Prerequisite: Senior or graduate status. May be repeated for a maximum of 6 credits) Cultural, political, educational, and economic perspectives of different regions of the world and the impact of these factors on health will be compared and examined.

533 SCHOOL NURSE PRACTICUM I 5 credits
Prerequisite: 597/521, 523 and 8200-225 or 660, correlative: 225 or 660 if not previously completed. Emphasis on clinical primary health care nursing to enhance positive health behavior outcomes of well children and adolescents with minor conditions in family, community, and school contexts.

534 SCHOOL NURSE PRACTICUM II 5 credits
Prerequisite: 597/521, 523, 8200-225 or 660, 8200-593. Emphasis on primary health care nursing to enhance positive health behavior outcomes of well children/adolescents with minor common health or behavioral problems and chronic illnesses.

561 ADVANCED PHYSIOLOGICAL CONCEPTS IN HEALTH CARE I 3 credits
Prerequisite: Admission to MSN program. This course presents an in-depth study of physiological processes in the areas of neurological, neuromuscular and cardiovascular physiology and their interrelationship with therapeutic agents.

562 ADVANCED PHYSIOLOGICAL CONCEPTS IN HEALTH CARE II 3 credits
Prerequisite: 597/521. This course presents an in-depth study of physiological processes in the areas of respiratory, renal and endocrine physiology and their interrelationship with therapeutic agents.

589 SPECIAL TOPICS: NURSING 14 credits
May be repeated as new topics are presented Group studies of special topics in nursing. May not be used to meet requirements for the major in nursing. May be used for elective credit.

593 WORKSHOPS 14 credits
May be repeated as new topics are presented. Selected topics in nursing. May be used to meet undergraduate/graduate requirements at the discretion of the college.

598 SPECIAL READINGS 14 credits
Prerequisite: permission of student's advisor or dean. Special areas in an area of concentration may be taken to satisfy elective credit. Special readings may not be used to satisfy requirements of the major.
630 RESOURCE MANAGEMENT IN NURSING SETTINGS 3 credits
Prerequisite: Admission to Graduate Program or permission of instructor. Examines management of the delivery of nursing service settings, analyzes impact of economic and labor relations on health and nursing care.

631 ADULT/GERONTOLOGICAL HEALTH NURSING NP IV PRACTICUM 3 credits

632 FISCAL MANAGEMENT IN NURSING ADMINISTRATION 3 credits
Prerequisite: Admission to Graduate Program or permission of instructor. Examines management of health care delivery to diverse populations. Examines methods to shape policy, distribution, and allocation of resources. Web-based course.

633 LEADERSHIP IN NURSING ORGANIZATIONS I 3 credits
Prerequisites or Corequisites: 630, 652, 653. Leadership and management theories are utilized to guide practice in the role of nurse administrator.

634 LEADERSHIP IN NURSING ORGANIZATIONS II 3 credits
Prerequisites: 633, 638. Leadership and management theories are utilized to guide study of the role of nurse administrator.

645 PRINCIPLES OF ANESTHESIA II 3 credits
Prerequisite: Admission into the Nurse Anesthesia program. The course presents content dealing with the chemical and pharmacological components of anesthesia agents.

649 NURSE ANESTHESIA RESIDENCY 1-4 credits
Prerequisites: 644, 645. This course introduces the second year student to the art and science of both obstetrical and pediatric anesthesia related theory, research, and practice.

653 PRACTICUM: NURSING ADMINISTRATION I 2 credits
Prerequisites: Admission to Graduate Program or permission of instructor. Leadership and management theories are utilized to study the role of the nurse administrator.

652 PRACTICUM: NURSING ADMINISTRATION II 2 credits
Prerequisite: Admission into the Nurse Anesthesia program. The course presents content dealing with the chemical and pharmacological components of anesthesia agents.

680 SCIENTIFIC COMPONENTS OF NURSE ANESTHESIA 3 credits
Prerequisite: Admission into the Nurse Anesthesia program. The course presents content dealing with the chemical and pharmacological components of anesthesia agents.

680 CHILD AND ADOLESCENT HEALTH NURSING II 3 credits
Prerequisites: 655. Clinical practicum course emphasizes on advanced practice in primary health care nursing with introduction to differential diagnosis and clinical management.

680 NURSE ANESTHESIA RESIDENCY 2 credits
Prerequisite: Admission into the Nurse Anesthesia program. The course presents content dealing with the chemical and pharmacological components of anesthesia agents.

680 PRACTICUM: NURSING ADMINISTRATION II 2 credits
Prerequisite: Admission into the Nurse Anesthesia program. The course presents content dealing with the chemical and pharmacological components of anesthesia agents.

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Prerequisite: Admission into the Nurse Anesthesia program. The course presents content dealing with the chemical and pharmacological components of anesthesia agents.
815 THEORY CONSTRUCTION AND DEVELOPMENT IN NURSING
Prerequisites: Admission to the Ph.D. Program and 810. Examines strategies for theory development in logical-empirical-deductive and inductive approaches. Emphasis will be on elements and strategies used in theory building. (KSU 70719)

820 INTRODUCTION TO NURSING KNOWLEDGE DOMAINS
Prerequisite: 810 and 815. Corequisite: 816. Introductory seminar analyzing selected theoretical and methodological approaches to knowledge development in nursing. Emphasis on critical analysis of knowledge in areas of special interest. (KSU 70720)

823 PRINCIPLES OF SCIENTIFIC INQUIRY IN NURSING
Prerequisite: Admission to the Ph.D. program or permission of instructor. Corequisite: 824. This course examines diverse paradigms and research methods as the foundation for scholarly inquiry in nursing. Students begin building a foundation for focused intellectual inquiry in a substantive area of nursing.

824 FOUNDATIONS OF SCHOLARLY INQUIRY IN NURSING
Prerequisite: Admission to the Ph.D. program or permission of instructor. Corequisite: 825. This course examines diverse paradigms and research methods as the foundation for scholarly inquiry in nursing. Students begin building a foundation for focused intellectual inquiry in a substantive area of nursing.

825 QUANTITATIVE RESEARCH METHODS
Prerequisite: Admission to the Ph.D. Program or permission of the professor. An integrated approach to the design of quantitative nursing research. Exploration of the interrelationships of theoretical framework, methodology, and quantitative research design. Emphasis on critical evaluation of empirical findings and their implications for future research.

826 ADVANCED HEALTH CARE STATISTICS I
Prerequisite: Admission to the Ph.D. Program or permission of the professor; pre-or corequisites: 816, 825, 840, 846. This course examines theories and processes of formulating state/national health care policy. Focus on health care issues, the political and legislative process, and contemporary policy dimensions. (KSU 70713)

830 QUALITATIVE RESEARCH METHODS
Prerequisite: Admission to the Ph.D. Program or permission from the instructor. Selected qualitative research methods used to study nursing phenomena. Philosophical bases, design, data collection and analysis, evaluation of rigor, and ethical issues associated with qualitative major qualitative methods will be analyzed with regard to nursing phenomena. (KSU 70730)

831 NURSING AND HEALTH CARE POLICY
Prerequisite: Admission to the Ph.D. Program or permission of the professor. Seminar on current trends and issues in health care policy and the health sciences to assist students to become leaders in practice, academic, and community.

832 ADVANCED HEALTH CARE STATISTICS II
Prerequisites: 827 and admission to the Ph.D. Program or permission of instructor. Theories synthesize and applied knowledge of advanced multivariate and statistical techniques commonly used in health care and nursing research.

837 NURSING SCIENCE SEMINAR I
Prerequisite: 820. Seminar on critical analysis and synthesis of theoretical models and empirical research that form the foundation for the student's research. Focus will be on theoretical foundations of nursing science. (KSU 86891, 86919, 86921, 86929)

841 AMRR: APPLICATION OF QUANTITATIVE METHODS
Prerequisites: 825, 827, 837 and admission to the Ph.D. Advanced seminar on selected areas related to research development in quantitative methods and evaluation essential to the advancement of nursing knowledge.

846 AMRR: MEASUREMENT IN NURSING RESEARCH
Prerequisite: 820 and admission to the Ph.D. Program or permission of instructor. Theories and concepts related to measurement and nursing research including techniques for construction, testing, and refining of instruments with assessment of reliability and validity.

847 AMMR: APPLICATION OF QUALITATIVE METHODS
Prerequisite: 820 and admission to the Ph.D. Program or permission of instructor. Achieve an in-depth understanding of one qualitative research approach (chosen by student according to higher research plans), including associated philosophical foundations, key concepts, typologies, and evaluative criteria.

848 AMRR: PROGRAM EVALUATION IN NURSING
Prerequisites: 820 and admission to the Ph.D. Program or permission of instructor. Seminar lecture; analysis of theories and models of program evaluation and their relationships to program assessment, testing, and outcomes in nursing-related evaluations.

849 AMMR: GRANT DEVELOPMENT AND FUNDING
Prerequisite: 820 and admission to the Ph.D. Program or permission of instructor. Advanced seminar on critical analysis of proposal and grant development, funding, peer review, and advanced process with emphasis on the development of a grant proposal.

850 NURSING SCIENCE SEMINAR II
Prerequisites: 820 and 840. Focus on advancement of student's scholarship within one of the following areas: discovery, teaching, integration, or application through design and implementation of a faculty-facilitated project. (KSU 87091)

883 EVALUATION IN NURSING EDUCATION
3 credits
- Application of evaluation and measurement principles to nursing education. Emphasis on evaluation as both process and outcome.

885 PRACTICUM: ACADEMIC ROLE OF THE NURSE EDUCATOR
1-12 credits
- Focuses on in-depth evaluation of descriptive, normative, and correlation, regression, and formula processes for educational research and programming. Emphasis on initial manipulation of data, integrating understanding of reference and probability.

890 DOCTORAL DISSERTATION
1-2 credits
- Prerequisite: Advancement to candidacy. (May be repeated) Independent dissertation research under the guidance of a faculty advisor and a dissertation committee. (KSU 88019)

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827 INTRODUCTION TO BLENDING AND COMPOUNDING POLYMERS
Prerequisite: Permission of instructor. Nature of polymer blends and compounds and their applications. Preparation and technology using batch and continuous mixers. Mixing Mechanisms.

827 MOLD DESIGN
Prerequisite: Permission of instructor. Molding methods to manufacture polymeric products. Emphasis on mold design, molds, equipment, computerized design.

550 ENGINEERING PROPERTIES OF POLYMERS
Prerequisite: Permission of instructor. Introduction to engineering properties and polymer processing. Analyzing mechanical properties in glass, rubber, and fluid states. Product design, rheology, and polymer processing concepts.

551 POLYMER ENGINEERING LABORATORY
Prerequisite: Permission of instructor. Laboratory experiments on the rheological characterization of polymer melts, fabricating polymer experiments, structural investigation of polymer parts.

601 POLYMER ENGINEERING SEMINAR
1 credit
- Presentations of recent research on topics in polymer engineering and internal and external speakers.

610 STRUCTURAL CHARACTERIZATION OF POLYMERS WITH ELECTROMAGNETIC RADIATION
2 credits
- Characterization of orientation, morphology, superstructure in polymers using x-ray, light scattering, birefringence, dichroism, cryo-microscopy, unid determination.

621 RHEOLOGY OF POLYMER FLUIDS
3 credits

622 ANALYSIS AND DESIGN OF POLYMER PROCESSING OPERATIONS I
3 credits
- Prerequisite: 620. Mathematical models and analysis of polymer processing operations including extruder screws, injection molds, dies, fibers, film formation.

623 ANALYSIS AND DESIGN OF POLYMER PROCESSING OPERATIONS II
3 credits
- Prerequisite: Permission of instructor. Basic studies on non-isothermal phenomena in polymer engineering emphasizing crystallization, vitrification, frozen-in orientation and residual stresses, applications, including fiber spinning and film extrusion.

631 ENGINEERING PROPERTIES OF SOLID POLYMERS
2 credits
- Transitions as a function of polymer structure, optical characteristics, mechanical, analysis ultimate properties, viscoelastic behavior of elastomers and plastics, large strain behavior and basic analysis on experimental methods.

641 POLYMER MATERIALS ENGINEERING SCIENCES
2 credits
- Physico-chemical properties of amorphous and crystalline polymers. Glass transitions, crystallization, molecular orientation and morphology of important commercial polymers, fabricating principles.

650 BASIC ENGINEERING FOR POLYMER ENGINEERS
3 credits
- Basic concepts of polymer engineering taught in lecture-laboratory format intended for orientation of new graduate students.

651 POLYMER ENGINEERING LABORATORY
3 credits
- Rheological characterization of polymer melts, rubber and plastic extrusion, extrudate swell, injection and compression molding, crystallization behavior, x-ray diffraction, film blowing, impact testing, and tensile testing.

661 POLYMERIZATION REACTOR ENGINEERING
3 credits
- Polymeric kinetics, reactor design. Comparison of polymerization in batch and continuous stirred tank reactors, flow patterns around agitators, tubular reactors, reactor stability.

675 CARBON-POLYMER NANOTECHNOLOGY
3 credits
- Prerequisite: Permission of instructor. This course focuses on the fundamental aspects of nanotechnology in general and basic knowledge of polymer/carbon nanoscience and nanotechnology in particular.

680 POLYMER COATINGS
3 credits
- Permits permission of instructor. This course is an introduction to coating science. The synthesis of polymeric binders and pigments used in commodity coatings will be the focus of the first part of the course. The second part of the course will focus on coatings formulation and end-use applications for commodity coatings.

699 MASTER’S THESIS
16 credits
- This course is repeated Supervised original research in specific area of polymer engineering.

712 RHEO-OPTICS OF POLYMERS
2 credits
- Applications of rheo-optical methods as means of determining stress fields in polymeric glasses and fluids during deformation, rheo-optical properties of polymers in glasses, rubbery and fluid states. Theory of dynamic birefringence and its application to mechanical relaxations of amorphous and semicrystalline polymers, and recent experimental results.

715 ADVANCED CHARACTERIZATION OF FUNCTIONAL POLYMERS
3 credits
- Prerequisites: 611 and 623 or equivalent (with permission of instructor). Course will focus on the advanced structural and fundamental property characterization techniques including optical, electrical, magnetic, and others. A particular focus will be the influence of the history of polymer processing on these properties.

720 MOLECULAR ASPECTS OF POLYMER RHEOLOGY
2 credits
- Prerequisite: 621 or permission of instructor. Molecular theory for concentrated solutions and melts of flexible homopolymers, molecular rheology of miscible polymer blends, block copolymers, and liquid crystalline polymers.

721 RHEOLOGY AND PROCESSING TWO-PHASE POLYMER SYSTEMS
2 credits
- Prerequisites: 621 or equivalent. Particles (dumbbells, mixing-devices and devolatilization behavior). Theoretical hydrodynamics of suspensions of rigid particles, experimental studies of rheological behavior, extrapolation theories representing suspension behavior, dispersion of droplets into an emulsion, phase morphology development and rheological properties of blends.

722 ADVANCED MODELLING OF POLYMER PROCESSING
2 credits
- Prerequisite: Permission of instructor. Modeling of processing operations including extrusion molding, fiber and film processing, computer-aided design.

723 RHEOLOGY AND PROCESSING OF ELASTOMERS
2 credits
- Interpretation of rheological properties and critical study and analysis of processing operations including behavior in internal mixers, screw extruders, die systems and vulcanization molding.

724 ADVANCED EXTRUSION AND COMPOUNDING
2 credits
- Principles of operation and flow in single and twin screw extruders, screw design, characteristics of internal mixers, analysis and simulation of flow.
675 CHEMORHEOLOGY AND PROCESSING OF THERMOSETS 2 credits
Prerequisites: 641 or 622, or permission of instructor. Rheological behavior of thermosets, vulcanization of rubbers, time-temperature-transition relationships in thermosets, reaction injection molding, compression molding, pultrusion.

677 ADVANCED POLYMER RHEOLOGY 2 credits
Prerequisites: 621 or equivalent. Second level course in non-linear constitutive equation for viscoelastic, viscoelastic-plastic polymeric materials. Utility and applicability to polymer processing problems.

678 NUMERICAL METHODS IN POLYMER ENGINEERING 2 credits

731 TENSILE ANALYSIS OF POLYMERS AND COMPOSITES 2 credits
Prerequisite: 831. The design of rubber molds, bearings and sandwich components with demonstration of finite element methods. Classical plates and shells theories with applications to composite structures.

745 LIQUID CRYSTALS 2 credits
Prerequisite: permission of instructor. Structure of low molecular weight and polymeric liquid crystals. Characterization, physical properties including optical properties, phase transitions, structure-property relationships, processing of polymeric species.

747 POLYMER COLLOIDS 3 credits
Prerequisite: permission of instructor. Colloid and colloidal dispersions, phase stability, aggregation structures, thermodynamics, kinetics of phase transitions in polymer colloids, Emulsion and solution polymerization, organic/inorganic hybrid materials, coating technology. Rheology of colloidal polymers.

748 PHASE TRANSITIONS IN POLYMER BLENDS AND ALLOYS 3 credits
Prerequisite: permission of instructor. Elucidating thermodynamics of polymer blends, block copolymers, crystallinity, liquid crystalline polymers, and kinetics of phase transitions. Structure development and modeling of reactive polymer blends.

761 INJECTION AND COMPRESSION MOLDING FUNDAMENTALS 2 credits
Prerequisite: permission of instructor. The course provides fundamental knowledge in physical, thermal, and rheological properties required for injection and compression molding including theoretical and experimental aspects of various molding processes.

770 POLYMER NANO COMPOSITES 3 credits
Prerequisite: permission of instructor. Develops understanding on synthesis, characterization, processing, and properties of polymer nanocomposite materials involving nanoscale fillers in conjunction with thermosetting, thermoplastic, and elastomeric polymer matrices.

773 ADVANCED POLYMER COATING TECHNOLOGY 2 credits
Prerequisite: 641 or equivalent or permission of instructor. The polymeric binders used in radiation-curable coatings for electronic packaging and waterborne coatings will be stressed. The chemistry of dyes and the coatings science of pigments will be presented. The chemistry of polymer degradation will also be covered.

777 MODELING OF NANOSCALE MATERIALS 3 credits
Prerequisite: Permission of instructor. Introduces molecular simulation methods (Monte Carlo, molecular dynamics) and their application to polymer-related materials at the molecular and coarse-grain levels.

780 ADVANCED FUNCTIONAL POLYMERS 2 credits
Prerequisite: 611, 641, or permission of instructor. This course focuses on the recent development of functional polymers for applications as advanced materials, and smart materials, which require the attendant to possess some prior knowledge of polymer science and polymer engineering from such 600-level course(s) as mentioned above.

788 ADVANCED SPECIAL TOPICS IN POLYMER ENGINEERING 2 credits
May be repeated. Prerequisite: permission of instructor. Advanced special topics intended for Ph.D. students in polymer engineering.

898 PRELIMINARY RESEARCH 1-15 credits
May be repeated. Preliminary investigation of Ph.D. dissertation subject.

899 DOCTORAL DISSERTATION 1-6 credits
May be repeated. Prerequisite: Successful completion of Ph.D. qualifying exams. Original research by a Ph.D candidate.
Grievance Procedures for Graduate Students

Purpose
The procedures set forth in this document are intended to provide graduate students with a formal channel of appeal and redress of grievances arising out of their academic and/or employment relationship with the University.

Procedures
1. Any graduate student who believes that he or she has valid grounds for a complaint shall attempt to resolve the problem through a conference with the faculty member involved, the department head, and/or the graduate advisor. Following that, the student may attempt to resolve the problem with the assistance of the academic dean. A graduate student presenting a case to the academic dean must provide a full written statement of the grievance, together with all appropriate supporting material. When or if the problem has not been adequately resolved at that level or the student wishes to appeal that decision, the student shall prepare a written statement of the complaint setting forth clearly and specifically the allegations and shall hand deliver the written complaint to the Dean of the Graduate School. The Dean of the Graduate School shall notify the complainant confirming the receipt of the complaint and shall request all materials from the Dean of the complainant’s college.

2. Within one week of receipt of the complaint, the Dean of the Graduate School shall communicate with all parties in an attempt to informally resolve the problem. The result of this process will be a recommendation by the Dean of the Graduate School which will be communicated in writing to all parties, including the Senior Vice President and Provost.

3. The complaint shall become a grievance to be filed with the Senior Vice President and Provost if: a) the Dean of the Graduate School wishes to have a Hearing Committee render a recommendation on the grievance; or b) the student wishes to appeal the recommendation of the Dean of the Graduate School. The student must notify the Senior Vice President and Provost in writing within one week of notification of the Dean of the Graduate School’s decision on the complaint.

4. Upon receipt of the grievance, the Senior Vice President and Provost shall notify in writing the President of Graduate Student Government that a Hearing Committee should be constituted. The Hearing Committee shall be organized in no more than two weeks.

5. When the grievance has been filed with the Chairperson of the Hearing Committee, it shall be the responsibility of that Chairperson to notify in writing all parties involved in the grievance within two working days. This notification shall include the following information: that a grievance has been filed; the nature of the grievance; and the parties involved.

6. If the charged party in that grievance admits the validity of the grievance, the Chairperson of the Hearing Committee shall waive the hearing and shall direct the parties involved in the grievance within two working days. This notification shall be summarized, written record of all the proceedings.

7. If the party charged in the grievance denies the validity of the grievance, the Hearing Committee shall conduct the hearing.

Hearing Committee
A Hearing Committee shall be established as follows:

1. Chairperson – The Chairperson shall be a member of the graduate faculty with full membership, but not from a department involved in the proceedings. This Chairperson shall be selected by the Senior Vice President and Provost and shall serve for only one grievance proceeding. The Chairperson shall conduct the hearing and shall vote only in the case of a tie.

2. Members – Four members shall be selected as follows:

   a. From the complainant’s department - a graduate student not directly involved, selected jointly by the Department Chair and the President of the Graduate Student Government. If the grievance is filed against the Department Chair, the Academic Dean shall substitute for the Department Chair. If the grievance is filed against the department, the Senior Vice President and Provost shall substitute for the Department Chair.

   b. From the complainant’s department - a faculty member not directly involved, selected jointly by the Department Chair and the President of the Graduate Student Government. If the grievance is filed against the Department Chair, the Academic Dean shall substitute for the Department Chair. If the grievance is filed against the department, the Senior Vice President and Provost shall substitute for the Department Chair.

   c. A graduate student not involved with the complainant and not from the complainant’s department, selected by the Vice Chairperson of the Graduate Council.

   d. A member of the graduate faculty with full membership not involved in the complaint nor from the complainant’s department, selected by the Senior Vice President and Provost.

3. A Hearing Committee shall be organized anew each and every time a grievance is brought forth. A Hearing Committee shall serve through the adjudication and resolution of the complaint.

Hearing Procedure
1. The hearing must take place within two weeks of the Hearing Committee’s formation.

2. At least three working days prior to the hearing, the Hearing Committee Chairperson shall provide the Hearing Committee and the parties involved with:
   a. The student’s written statement of the grievance.
   b. Written notification of when and where the Hearing Committee shall meet.
   c. A copy of “Grievance Procedures for Graduate Students” and all relevant documents.

3. Each party shall be required to appear in person before the Hearing Committee to present his/her case. Each party may have an advisory colleague present to protect his/her rights if so desired. However, the parties shall speak and act on their own behalf. Witnesses may be called to present evidence on behalf of the complainant or the charged person. The use of tape recorders is prohibited, except as may be required to accommodate persons with disabilities.

4. All parties shall be entitled to an expedited hearing. In urgent cases in which it is alleged that a regulation, administration decision, or action threatens immediate and irreparable harm to any of the parties involved, the Hearing Committee shall expedite the hearing and disposition of the case. The Hearing Committee is empowered to recommend to the Dean of the Graduate School that an individual, department, or college discontinue or postpone any action which threatens to cause irreparable harm, pending the final disposition of the case.

5. The burden of proof shall be on the complainant and the standards of justice and fair play shall prevail in the adjudication of violations and grievances.

6. If necessary, the Hearing Committee may consult with the University’s Office of General Counsel for advice at any time throughout this process.

Decisions and Actions
1. The Hearing Committee shall decide as follows: there has been a violation of the complainant’s rights, or there has been no violation of the complainant’s rights.

2. Should the Hearing Committee determine that a violation of the complainant’s rights occurred, the Committee shall, if practical, recommend a resolution to the Senior Vice President and Provost.

3. The Senior Vice President and Provost, exercising his/her judgment, shall act on the implementation of the resolution recommended by the Hearing Committee.

Record Keeping
The Chairperson of the Hearing Committee shall be responsible for keeping a summarized, written record of all the proceedings.

1. Records of all proceedings shall be prepared by the secretarial personnel of the Graduate School. Copies of all proceedings shall be distributed as follows:
   a. To all parties involved in the proceedings.
   b. To the Hearing Committee members.
   c. To the President of the Graduate Student Government.
   d. To the Dean of the Graduate School.
   e. To the Senior Vice President and Provost.

2. A copy of all proceedings shall be kept in the office of the Dean of the Graduate School pursuant to the University’s record retention proposal.

Appeal
An appeal may be made to the President of the University after all of the above procedures have been followed. The President of the University shall assess each case on an individual basis and his/her decision shall be considered final.
Family Educational Rights and Privacy Act (FERPA)

A student has a right to:
- Inspect and review education records pertaining to the student;
- Request and amendment to the student’s records; and
- Request a hearing (if the request for an amendment is denied) to challenge the contents of the education records, on the grounds that the records are inaccurate, misleading, or violate the rights of the student.

The parent or eligible student has a right to:
- Inspect and review the student’s education records;
- Request the amendment of the student’s education records to ensure they are not inaccurate, misleading, or in otherwise in violation of the student’s privacy or other rights.
- Consent to disclosures of personally identifiable information contained in the student’s education records, except to the extent that FERPA authorizes disclosure without consent.
- File with the U.S. Department of Education a complaint concerning alleged failures by the school to comply with the requirements of FERPA; and
- Obtain a copy of the school’s FERPA policy.

Disclosure of Personally Identifiable Information
- FERPA regulations list conditions under which “personally identifiable information” from a student’s education record may be disclosed without the students prior consent.
- Disclosure may be made to authorized representatives of the U.S. Department of Education, the Office of Inspector General, or state and local education authorities. These officials may have access to education records as a part of an audit or program review, or to ensure compliance with Student Financial Assistance program requirements. (Representatives of the Department include research firms that are under contract with the Department to conduct studies of financial aid procedures, using student information provided by the schools selected for the study. The term also includes the Student Financial Assistance program public inquiry contractor.)
- Disclosure may be made if it is in connection with financial aid that the student may receive a request from the Immigration and Naturalization Service (INS) or the Federal Bureau of Investigation (FBI) for access to a student’s records. Such a request may be granted only if the student information is needed to determine the amount of the aid, the conditions for the aid, the student’s eligibility for the aid, or to enforce the terms or conditions of the aid.
- Disclosure may be made to the student’s parent, if the student is dependent on the parent, as defined by the Internal Revenue Service. If the student receives more than half of his or her support from the parent, under the IRS definition, the student is a dependent of the parent. (Note that the IRS definition is quite different from the rules governing dependency status for the Student Financial Assistance programs.)
- Disclosure may be made to organizations that are conducting studies concerning the administration of student aid programs on behalf of educational agencies or institutions.

Annual Notification
Each year, The University of Akron is required to give notice of the various rights accorded to parents or students pursuant to the Family Education Rights and Privacy Act (FERPA). Parents and students, under FERPA, have a right to be so notified and informed. In accordance with FERPA, you are notified of the following:
- Right to Prevent Disclosures
You have the right to prevent disclosure of Education Records to third parties with certain limited expectations. It is the intent of The University of Akron to limit the disclosure of information contained in your Education Records to those instances where prior written consent has been given for disclosures, as an item of directory information of which you have not refused to permit disclosure, or under the provisions of FERPA which allows disclosure without prior written consent.
- Right to Inspect
You have the right to review and inspect substantially all of your Education Records maintained at or by The University of Akron.
- Right to Request an Amendment
You have the right to have corrected any parts of any Education Record that you believe to be inaccurate, misleading, or otherwise in violation of your FERPA rights. This right includes the right to a hearing to present evidence that the record should be changed if this institution decides not to alter the Education Records.
- Right to Obtain Policy
You have the right to obtain a copy of the written institutional policy adopted by The University of Akron in compliance with FERPA. A copy may be obtained in person or by mail from the FERPA coordinator, the University Registrar, whose office is located in Simmons Hall, Room 120. In addition, this policy may be accessed online at http://www.uakron.edu/ogc/docs/11-08_6-25-07.doc.
- Right to File a Complaint
You have the right to file a complaint with the Family Educational Rights and Privacy Act Office at the Department of Education, 600 Independence Avenue, S.W., Washington, D.C., 20202-3887 (202) 260-8001, concerning any belief you may have that The University of Akron has failed to comply with the provisions of FERPA.

Release of Directory Information
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University Rule 3359-2-05
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