## Calendar 2009-2010

### Fall Semester 2009
- **Day and evening classes begin**: Mon., Aug. 24
- **Labor Day (day and evening)**: Mon., Sept. 7
- **Spring 2010 advancement to candidacy due**: Tue., Sept. 15
- **Veterans Day (classes held; staff holiday)**: Wed., Nov. 11
- **Thanksgiving Break**: Thu.-Sat., Nov. 26-28
- **Final instructional day**: Sat., Dec. 5
- **Final examination period**: Mon.-Sat., Dec. 7-12
- **Commencement**: Sat., Dec. 12
- **Winter Recess**: Sat.-Sat., Dec. 19–Jan. 9

### Spring Semester 2010
- **Day and evening classes begin**: Mon., Jan. 11
- **Martin Luther King Day**: Mon., Jan. 18
- **Summer 2010 advancement to candidacy due**: Mon., Feb. 15
- **Presidents’ Day**: Tue., Feb. 16
- **Spring Break**: Mon.-Sat., Mar. 15-Mar. 20
- **Classes resume**: Mon., Mar. 22
- **Final instructional day**: Sat., May 1
- **Final examination period**: Mon.-Sat, May 3-8
- **Commencements**: Fri.-Sun., May 7-9
- **Fall 2010 advancement to candidacy due**: Mon., May 17
- **School of Law Commencement**: Sun., May 16

### Summer Sessions I, II, and III 2010
- **First 5- and 8-week Sessions begin**: Mon., May 17
- **Memorial Day**: Mon., May 31
- **First 5-week Session ends**: Sat., Jun. 19
- **Second 5- and 8-week Sessions begin**: Mon., Jun. 21
- **Independence Day**: Mon., Jul. 5
- **First 8-week Session ends**: Sat., Jul. 10
- **Third 5-week Session begins**: Mon., Jul. 12
- **Second 5-week Session ends**: Sat., Jul. 24
- **Third 5-week and Second 8-week Sessions end**: Sat., Aug. 14
- **Summer Commencement**: Sat., Aug. 14

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### University Closing Policy
The president, or designee, upon the recommendation of the Director Environmental Health and Occupational Safety, will determine when conditions—such as severe weather or a state of emergency—necessitate closing the entire University or cancelling classes at the main campus and/or Wayne College in Orrville.

The Chief of Police will promptly notify other designated University officials and members of the Department of Institutional Marketing, 330-972-7820, who will contact area media. University colleges/departments/schools are encouraged to establish a method for communicating the closing decision to departmental personnel. Closing information will be announced as early and as simply as possible to avoid confusion.

Cancellation of classes and closure announcements will be made as early as possible in the day and will clearly state the affected campus(es). Call 330-972-SNOW or 330-972-6238 (TDD/Voice) for updated information.

### 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.
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
Assistant to the Vice President for Research & Dean, Graduate School
Mrs. Dolli Quattrocchi Gold .................................. 972-6737
Senior Executive Administrative Assistant
Mrs. Cynthia S. Angerstien ..................................... 972-6458
Administrative Assistant Senior
Ms. Heather A. Blake ............................................ 972-7664
Coordinator, Graduate Student Financial Aid
Mrs. Karen L. Caldwell ........................................ 972-6310
Director, McNair Scholars Program
Ms. Billi F. Copeland .......................................... 972-2135
Student Services Counselor
Ms. Jessica N. Fritz .............................................. 972-5169
Student Services Counselor
Ms. Brenda J. Henry ............................................ 972-7665
Coordinator, Graduate Admissions
Ms. Theresa M. McCune ...................................... 972-6405
Examiner Associate
Mrs. Sarah Sir Louis ............................................ 972-5296

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 ................................ 972-6519
College of Nursing .................................................................... 972-7551
College of Polymer Science and Polymer Engineering ......................... 972-7500
NEOUCOM (Northeast Ohio Univ. College of Medicine) .................. 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 .................................................. 972-7923
TTY/TDD ........................................................................ 972-5676
Buchtelite, The (student newspaper) ................................................. 972-7919
Center for Child Development ...................................................... 972-8210

Important Phone Numbers

Commuter Central ................................................................. 972-8690
Counseling, Testing, and Career Center
Counseling ........................................................................ 972-7082
Testing ................................................................................ 972-7084
English Language Institute .......................................................... 972-7544
Financial Aid, Office of Student .................................................... 972-7032
Scholarships (non-University) ...................................................... 972-6368
Scholarships (University) ............................................................ 972-6343
Student Employment ................................................................. 972-7405
Student Volunteer Program ......................................................... 972-6841
Toll-Free ............................................................................... 1-800-621-3847
Work Study .......................................................................... 972-8074
Health Services, Student ......................................................... 972-7808

Information Centers

Student Union ........................................................................... 972-INFO (4636)
Polsky's High Street Info Center ..................................................... 972-7531
Polsky's Main Street Info Center ..................................................... 972-7532
International Programs ................................................................. 972-6349
Immigration (Prospective Students) ................................................. 972-6740
Immigration (Current Students) ..................................................... 972-6296

Libraries, University
Bierce Library ........................................................................ 972-8161
Law Library ........................................................................... 972-7330
Science and Technology Library ..................................................... 972-7195
University Archives ................................................................. 972-7670
Multicultural Development, Office of ............................................ 972-7658
Academic Support Services/Access and Retention .............................. 972-6769
Ohio Residency Officer ................................................................. 972-7836
Pan-African Culture and Research Center ........................................ 972-7030
Parking Services .................................................................... 972-7213
Peer Counseling Program .............................................................. 972-8288

Photocopying
DocuZip (Student Union) ........................................................... 972-7870
Polsky's Center ...................................................................... 972-2043

Registrar, Office of the University .................................................... 972-8300
Graduation Office .................................................................... 972-8300
Records and Transcripts ................................................................ 972-8300
Residence Life and Housing .......................................................... 972-7800

Student Affairs, Vice President for ..................................................... 972-7067
Student Judicial Affairs ................................................................. 972-6380

Student Union
Information Center .................................................................. 972-INFO (4636)
Reservation Line .................................................................... 972-8689

Study Abroad ............................................................................ 972-7460
Ticketmaster .......................................................................... 972-6684
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. It is significant that the efforts, energy, and financial support of an Akron manufacturer of farm equipment, John R. Buchtel, were instrumental in persuading the Ohio Universalist Convention to build its college on a hill overlooking the town that stretched along the Ohio Canal. The grateful trustees responded by naming the school Buchtel College. It is also significant that during its first four decades, the struggling institution was indirectly aided in its efforts to survive by various local entrepreneurs who pioneered and prospered in such industries as cereals, clay products, matches, and rubber. Buchtel College’s emphasis on local rather than denominational interests became increasingly clear, and by 1913 those strong ties and the school’s financial situation caused its trustees to transfer the institution and its assets to the city. For the next 50 years, The Municipal University of Akron received its principal support from city tax funds and swelled from an enrollment of 188 to nearly 10,000.

The growth of the college paralleled the remarkable expansion of the community itself. From 1910 to 1920, Akron was the fastest-growing city in the country, evolving from a thriving canal town of 70,000 to a major manufacturing center of 208,000, thanks in large part to a boom in local factories that bore names such as Goodyear, Firestone, Goodrich, and others. The age of the automobile — and the demand for inflatable rubber tires — changed the complexion of Akron forever.

Changes within the Municipal University’s curriculum reflected the strong interrelationship of town and gown. In 1914 a College of Engineering began instruction, and other professional schools followed: Education (1921), Business Administration (1933), Law (1959), Community and Technical College (now Summit College) (1964), Fine and Applied Arts (1967), and Nursing (1967).

Considering the institution’s location in the heart of a burgeoning rubber industry, it seemed only appropriate that the world’s first courses in rubber chemistry would be offered at Buchtel College, in 1909. From those first classes in Professor Charles W. Knight’s laboratory would evolve the world’s first College of Polymer Science and Polymer Engineering (1988). During World War II, University of Akron researchers helped fill a critical need in the U.S. war effort by contributing to the development of synthetic rubber. The University’s polymer programs have produced some of the world’s most able scientists and engineers, and today attract millions of dollars annually in research support, as well as top graduate students from around the world.

Research, innovation, and creativity actively take many forms at the University — in the sciences, and in the arts and humanities. Today, University faculty study ways of matching workers with jobs to maximize performance; develop new ways to synthesize fuel; write and produce plays, write poetry, choreograph dance works; explore improved methods of tumor detection; evaluate water quality in northeast Ohio; provide speech and hearing therapy to hundreds of clients; aid the free enterprise system by sharing the latest in business practices with new and established companies alike; provide health care in community clinics; and study political campaign financing and reform. Faculty are awarded patents each year for their work on new technologies and products. The University of Akron’s continuing and central commitment to the liberal arts is signified by the perpetuation of the institution’s original name in the Buchtel College of Arts and Sciences.

The University has a long tradition of serving the needs of part-time and full-time students through day and evening classes, and it attracts traditional and nontraditional students of all economic, social, and ethnic backgrounds. Committed to a diverse campus population, the University is at the forefront of all Ohio universities in recruiting and retaining students of diverse backgrounds.

The University’s first doctoral degree was, appropriately enough, awarded in polymer chemistry in 1959, but master’s degrees were granted as early as 1882. The University of Akron now offers 17 doctoral degree programs and seven law degree programs as well as more than 100 master’s degree programs and options. The University offers undergraduate students a choice of more than 200 majors and areas of study leading to associate and bachelor’s degrees. Hundreds of noncredit continuing education courses, certificate programs and specialized training opportunities are available for individuals and organizations.

In 1963 the receipt of state tax monies made the University a state-assisted municipal university, and on July 1, 1967, The University of Akron officially became a state university. Today, 26,000 students from 44 states and 79 countries are enrolled in its 11 degree-granting units. The Princeton Review listed The University of Akron among the “Best in the Midwest” in its 2008 edition of Best Colleges: Region by Region. Its College of Polymer Science and Engineering is the nation’s largest academic polymer program. The University excels in many other areas, including global business, organizational psychology, educational technology, marketing, dance, intellectual property law, and nursing. Alumni of the University number nearly 144,000 and include scientists, engineers, artists, lawyers, educators, nurses, writers, business people, and other professionals at work in every state and throughout the world.

The 223-acre Akron campus, with 88 buildings, is within walking distance of downtown Akron and is located in a metropolitan area of 2.8 million people. The University’s presence in Northeast Ohio provides numerous opportunities in recreation, major collegiate, amateur, and professional sports, concerts, cultural events, and commerce, all within easy driving distance and many accessible via public transportation. Arts venues on campus include Daum and Sandefur theatres, Guezetta Recital Hall, the Emily Davis Gallery, and E.J. Thomas Performing Arts Hall, the flagship performance venue for the region. The critically acclaimed Akron Symphony Orchestra, Tuesday Musical and UA Steel Drum Band perform at Thomas Hall. The University joined the Mid-American Conference in 1991 and participates on the NCAA Division I level in 19 sports.

The University’s ongoing, major campus renovation that began in 2000, the “New Landscape for Learning,” has added 16 new facilities, 17 major additions or renovations, and 34 acres of green space. This transformation continues today — UA’s first on-campus football stadium is scheduled for completion in time for the Zip’s 2009 home opener.

For more than 139 years, The University of Akron has been an active participant in Akron’s renaissance of commercial and artistic endeavor, a leader in the metropolitan area’s intellectual and professional advancement, a center for internationally lauded research efforts and a source of enrichment, education, and vitality for Northeast Ohio. Our history is a long and proud one — yet at The University of Akron, our eyes are on the future, for our students, our faculty and staff, our community, and our world.

MISSION STATEMENT

The University of Akron, a publicly assisted metropolitan institution, strives to develop enlightened members of society. It offers comprehensive programs of instruction from associate through doctoral levels; pursues a vigorous agenda of research in the arts, sciences and professions; and provides service to the community. The University pursues excellence in undergraduate and graduate education, and distinction in selected areas of graduate instruction, inquiry, and creative activity.

CHARTING THE COURSE

Today, the University stands on the threshold of a fundamental shift in thinking and a sweeping recommitment of institutional talents, energies and resources toward attaining even greater excellence. The blueprint for change is “Charting the Course,” an ongoing and dynamic process of strategic thinking that begins with the University’s fundamental strategies and builds to where the institution envisions itself in the future.

Objective and documented excellence tells us that The University of Akron is already the leading public university in northern Ohio and signals a clear promise and destiny. We have framed our vision as a Statement of Strategic Intent:

The University of Akron intends to be recognized as the public research university for Northern Ohio.

That recognition will be gained by building upon the documented excellence that has enabled the University to achieve its current high level of achievement, and by strategic investments, partnerships and initiatives.

The University will continue to build a leadership position in information technology—to better prepare our students for today’s technologically advanced knowledge economy, to make learning more accessible and dynamic, and to increase the effectiveness of the University’s planning and operations.

We will attain technological and programmatic excellence throughout the University by taking full advantage of our metropolitan setting and long-standing relationships with area business and industry. We will act decisively to form and optimize strategic partnerships that will benefit our students and our community.

Enabling student success will continue to be the hallmark of The University of Akron. We recognize, importantly, that students are the responsibility of all of us at the University. We will work to strategically shape and define the quality, diversity and size of our student body. And, we will strive to offer students the chance to apply what they are learning in the classroom through hands-on research, service, internships, cooperative education or similar opportunities.

Student success is our number one priority.

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-
istrators, maintenance and service personnel, and everyone else whose work and dedica-
tion 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 develop-
ing our understanding and tolerance of differences in gender, ethnicity, age, spiri-
tual belief, sexual orientation, and physical or mental potential. We take responsibility 
for sustaining a caring 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 civil-
ity, united in our rejection of violence, coercion, deceit, or terrorism. We work to 
increase collaboration, cooperation, and consensus within rational dialogue char-
acterized 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 dis-
course.

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 teach-
ing/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. Fac-
ulty shall not engage in sexual or other forms of harassment or engage in inap-
propriate 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, dis-
criminatory, harassing, violent and/or threatening behavior is explicitly prohibited. Academic dishonesty will not be tolerated. Students are expected to to take respon-
sibility for their own learning and, in return, can expect respect from teaching from the faculty member. Students should report unprofessional behavior on the part of faculty members. Students have a right to expect that they will not be sexually other-
wise harassed, intimidated, or threatened.

On the Campus

On the campus, everyone is expected to respect and protect the dignity and free-
dom 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 expec-
tations 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 reg-
ulations 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 Con-
duct and the University Disciplinary Procedures. Faculty, contract professionals, 
administrators, and staff are expected to abide by all University regulations and pro-
cedures.

ACCREDITATION

Accreditation assures that degrees are recognized and approved by select regional and national education associations, societies and councils. Accreditation serve two funda-
mental purposes: quality assurance and institutional and program improvement. There are two types of accreditation of educational institutions: institutional accredita-
tion and specialized accreditation. Institutional accreditation evaluates the entire institu-
tion and recognizes 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 (30 North 
La Salle Street, Suite 2400 Chicago, IL 60602 (800) 621-7440) since 1914 and has been 
reaccredited at the highest level as a comprehensive doctoral degree-granting institu-
tion.

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

Accreditation provides the security of knowing that the University will honor most cred-
its earned at a similarly accredited college or university. Degrees earned at the Univer-
sity 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-The International Association for Management Education
- Accreditation Board for Engineering and Technology
- American Association for Family and Consumer Sciences
- American Association of Medical 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
- 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 for 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 Pediatric 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)
- Midwest 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 Continuation 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 gradu-
ates with approved baccalaureate degrees from The University of Akron.
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 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 Polymer Science classes.

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 building features a full 120-yard Astro Play field, 300-meter six-lane Mondo track, 8,000-square foot strength and conditioning 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 III). 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.

Buckingham Center. Located at 220 Wolf Ledges Parkway in the renovated Union Depot Building. This building houses the offices of the Associate Provost, Multicultural Development, Office of Multicultural Development, Black Cultural Center, Academic Achievement Programs, classrooms and a repository of African-American history.

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

Center for Child Development. This former Girl Scout regional headquarters building at 108 Fir Hill has been renovated to accommodate the University’s Center for Child Development.

Computer Center. This building located at 185 Carroll Street houses the University’s Information Services office, main computer, and Information Technology Services (Electronic Repair and Distributed Technology Services).

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 E. 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 unparalleled service to the nation during World War I. The entire 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 the College of Polymer Science & 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 Fine and Applied 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 is connected to the Memorial Hall by a pedestrian bridge and contains an intercollegiate 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.

Hower House. Located on Fir Hill, this 19th-century mansion has been designated a Historic Place by the National Park Service.

Infocision Stadium-Summa Field. Located at 289 South Union, this state-of-the-art multiplex facility is scheduled for completion September 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 remodelled 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 Auditionium.

Paul E. Martin University Center. Located at 105 Fir 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 dinner between 11:30 p.m. and 8:30 p.m. Business and departmental functions, banquets, receptions, and parties can be scheduled during the hours of 7:30 a.m. to 11 p.m. The office of the Department of Development is located on the upper floors of the building.

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 administrative office space. The law complex stands at the corner of University Avenue and Wolf Ledges Parkway.

Memorial Hall. Dedicated to the memory of Summit County men and women who died in World War II, this building contains the Rhodes Arena. It contains the Office of Sport Science and Wellness Education, a multi-functional gymnasium with spectator seating, two smaller gymnasia, a motor learning lab, a human performance lab, an athletic training lab, a weight training and fitness center, an athletics batting cage, and several classrooms.

Ocasek Natatorium. The natatorium houses an Olympic-size swimming pool with adjacent spectator seating area, and locker rooms and showers. The center also houses a 50-yard racetrack as well as weight room facilities. The natatorium is named for former Ohio State Senator Oliver Ocasek.

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 Archaeology.

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

Physical Facilities Operations Center. This building, located at 146 Hill Street, houses physical facilities offices, craft shops, the central heating and cooling distribution center, and the Campus Police/Security Department.

The Polsky Building. The largest academic building in Ohio, this renovated downtown 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, the Case Center for Health Policy, and the 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 newly constructed 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 136 South Broadway, across the street from the Quaker Square Inn and Quaker Square Residence Hall, in addition to academic uses, retail, banquet, office, and dining facilities.

Robertson Dining Hall. This building houses the cafeteria and a dining room for students.

Rubber Bowl. This off-campus stadium at 800 George Washington Blvd., four miles from campus, features an artificial turf playing field, seating for 35,000, locker rooms, concession stands, and a press box.

Schrank Hall. Named for Harry P. Schrank, longtime member and chairman of 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.

Schrank Hall North contains space for Adult Focus, Biology, College of Engineering, Computer-Based Assessment and Evaluation, Summit College and Women’s Studies.

Schrank 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 Affairs, University College, and Business and Finance. Major services provided in this building are the Office of Accessibility, Admissions, Center for Career Management, Counseling Center, Student Financial Aid, Office of the University Registrar, University College, New Student Orientation, and Business and Finance (Student Financials).


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, Office of Student Judicial Affairs, Computer Solutions — the computer technology store, DocuZip copy center, bank, Information Center, Ticketmaster outlet, Planet Underground, Starbucks, Zip Card office and Barnes and Noble Bookstore. Visit our Web site at http://www.uakron.edu/studentlife.

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 Department of Chemical and Biomolecular Engineering. The department offices, research labs, and the computer lab are located in the building.

Zook Hall. Named to honor George F. Zook, president of the University from 1925 to 1933, this Buchtel Common 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 245, general classrooms, a science and mathematics classroom/lab, a laboratory science classroom, shown laboratory, two multi-purpose demonstration classrooms, and a microbiology laboratory.

FACILITIES AND EQUIPMENT

The University’s addition 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 Biology houses greenhouses, controlled-environment chambers, an animal research facility, a molecular biology research center, modern laboratory equipment, and a computer lab. All faculty in the department are involved in research, including biochemistry, molecular biology, cell biology, and genetics. The department offers several undergraduate majors and minors, as well as graduate programs in biological science.

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 of organic and inorganic compounds. These include Laser Raman 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 Chemistry Stores facility maintain an inventory of more than 1,100 items, including chemicals, glassware, and apparatus. Additional information about the department, faculty, and programs can be found on the department Web site located at www.chemistry.uakron.edu.

The Department of Classical Studies, Anthropology and Archaeology 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 library of images database on the Greek world (20,000 images and most of Greek literature both in Greek and in translation), and to the Internet and the Web. The lab includes an extensive suite of graphics software, dual-monitor authoring workstations as well as desktop machines, flatbed and film scanners, and an accelerated 100 base-T local network connected to the University backbone. Digital installation and creation are a regular part of most classes.

The Department of Computer Science is located on the second floor of the College of Business and Sciences Building. In addition to basic courses, the department offers 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. Facilities are state-of-the-art and provide a broad range of experience that is attractive to potential employers.

Department computers provide access to the Internet, the World Wide Web, and the computational resources of the Ohio Supercomputing Center in Columbus. In addition, there are connections to the VBN’s Internet II network. Many department computers are accessible via the University dial-up lines or the Internet.

The proximity of the faculty offices to the computer laboratories encourages regular interaction between students and faculty. Staff members provide introductory seminars and are always available to assist and guide students. A friendly, informal, helpful atmosphere makes the department an enjoyable place to learn and gain practical experience.

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 computer laboratory for faculty and students. It is equipped with the latest equipment, running in a Microsoft environment. In addition, the department has a variety of instructional software, including econometrics tutorials, word processors and SAS. The lab is also equipped with a project 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 experience. Additional information about the department, faculty, and programs is available on the department Web site at www.uakron.edu/econ.

The Department of English is located on the third floor of Olin Hall. The department offers a diverse collection of maps, aerial photographs and satellite images. 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 for 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.

The Department of Geology and Environmental Science has modern instrumentation 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 mass spectrometer, automated inductively coupled plasma 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 geese, seismic-surveying equipment, ground-penetrating radar, and a field geodimeter. In addition to the

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standard equipment used to prepare and analyze rocks and sediment, the department has Giddings Soil Probe, Zodiac boat, pontoon- supported aqueous 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.

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 excellence 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: www3.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 audiorecords 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. Facilities include research laboratories used for faculty and student research projects, laboratories for experiments associated with coursework, and a computer lab for undergraduate and graduate students. In addition to research facilities, faculty and programs, information about the department, its faculty, and its programs is available on the internet at http://www.uakron.edu/colleges/artsci/physics/index.php. The smallness of the department provides ample opportunity for interaction with all faculty members. This interaction combined with the laboratory space, computing facilities and reading room offers students a learning experience in an attractive and hospitable environment.

The Department of Political Science is located on the second floor of Olin Hall. The department maintains an instructional computer lab consisting of 16 fast and frequently updated computers that are used by our students as they analyze real world political conflicts. The department also houses the facilities for the internationally known Bliss Institute of Applied Politics, one of the largest internship programs in the area, and the Center for Conflict Management.

The Department of Psychology is located on the third floor of the College of Arts and Sciences Building. The department maintains three computer labs that are available for undergraduate and graduate students in Psychology. All labs have access to the internet. Supported throughout the labs are statistical packages which include SAS, SPSS, and MPlus. Microsoft Office is available throughout the department for word processing. A full-time research programmer/analyst provides hardware and software support for the department, and a smaller PC cluster for research and additional information about the department, its faculty, and its programs is available on the internet at http://www.uakron.edu/colleges/artsci/physics/index.php. The smallness of the department provides ample opportunity for interaction with all faculty members. This interaction combined with the laboratory space, computing facilities and reading room offers students a learning experience in an attractive and hospitable environment.

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College of Creative and Professional Arts

The School of Communication features a television classroom/studio and a wide complement of supporting audio and video equipment, including graphics generators and linear and non-linear editors. Portable audio and video equipment is available for use on the premises and is an audio recording facility with multitrack capability. The School also houses radio station WZIP—an on-air 7500 watt FM radio station serving Northeast Ohio. WZIP-FM is operated by UA students under the supervision of professional broadcasters and gives students an opportunity to develop skills in broadcasting and communication through the completion of on-air assignments. A multimedia production/editing laboratory/classroom supports class instruction. News, publications, and other writing classes have access to a Macintosh computer laboratory with complete desktop publishing layout, graphics, and print capabilities.

The School of Dance, Theatre, and Arts Administration is located in the new Guzzetta Hall addition. The Theatre Program offers graduate programs in Theatre and Arts Administration. It utilizes three different performing spaces to present its annual season of two to four productions. Guzzetta Hall houses the versatile “black box” experimental Sandefur Theatre as well as rehearsal, teaching, and shop facilities. Kolbe Hall is the site of the 244-seat Daum Theatre, complete with support facilities. This conventional proscenium theatre is the home of theatre productions as is E.J. Thomas Performing Arts Hall. Student productions are performed in Studio 28, Sandefur Theatre, and Daum Theatre.

The School of Music is housed in Guzzetta Hall and also utilizes the E.J. Thomas Performing Arts Hall. Guzzetta Recital Hall seats 250 and is equipped with a pipe organ, harpsichord, two concert grand pianos, and a recording booth. The Music Computer Center is equipped with Macintosh computers and MIDI/sound and video equipment. An electronic music studio features digital and analog multitrack recording equipment and a sound mixing console for music composition. Classrooms, studios, and 40 practice rooms (acoustical sound modules) are used for teaching, rehearsals, and practice.

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 Memorial Hall.

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 Counseling Psychology (a collaborative program with the Department of Psychology in the College of Arts and Sciences). Masters programs are offered in Community 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.

The Department of Curricular and Instructional Studies includes the areas of early childhood, middle childhood, secondary (adolescent to young adult), preschool to grades 12 (P-12) education and the areas of special education as an intervention specialist for early childhood (P-3: mild/moderate/intensive), mild to moderate (K-12) or moderate to intensive (K-12). Initial teacher preparation programs are available at the undergraduate, post-baccalaureate and master’s degree levels. The early childhood program prepares teachers to teach three to five-year-olds. The middle childhood program prepares teachers to teach grades four through nine with specialization in each of the two areas selected from reading/language arts, mathematics, science and social studies. The secondary program prepares teachers in grades seven to twelve to teach language arts, mathematics, science, social studies, family and consumer science (grades 4-12). The P-12 program prepares teachers of foreign language, music, dance, drama, or visual arts. Endorsements are available in reading and teaching English as a second language. The special education options prepare graduate students to be master teachers and supervisors of special education programs. 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.

The Department of Educational Foundations and Leadership serves undergraduate 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, philosophical, psychological, and social foundations required in all graduate education programs. They teach, advise, and supervise problems, theses, and dissertations of students in their degree-granting graduate programs, the master’s programs in Educational Foundations, the master’s and doctoral programs in Educational Administration, the master’s program in Higher Education Administration, undergraduate and masters programs in Post-secondary Technical Education, certificate in Technical & Skills Training and certificate in Postsecondary Teaching.

The Department of Sport Science and Wellness Education prepares students for careers in teaching, athletic training, exercise science, coaching and related recreational fields. 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 (classrooms, the main gym, an indoor running track, a multi-purpose room, and four teaching station areas), Memorial Hall (classrooms, as well as large and small gyms), Ocasek Natatorium (classroom, swimming pool, racquetball courts, and cardiovascular fitness and weight training area), Student Recreation and Wellness Center (cardiovascular fitness and weight training area) Athletic Field House (sports medicine equipment), and Lee Jackson Field (an outdoor running track).

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 Raven Science and Engineering Center, Schrank Hall North, Whitby Hall, and the Commerce Research Building.

The master’s programs in the College consist of departmentally administered Master of Science degrees in Chemical, 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 coordinated Doctor of Philosophy in Engineering Degree with Youngstown State University and a joint MD/Doctor of Philosophy Degree in Engineering with the Northeast Ohio Universities College of Medicine.

The Department of Biomedical Engineering is located in the Otson 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 also participate in the joint MD/Doctor of Philosophy 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 interests in biomedical instrumentation, biomechanics, bioengineering, 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 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 AMTI force plates, a VAX—EMG system, and associated computer hardware and software.

The Biostereometrics Laboratory is equipped to perform spatial analysis using three-dimensional sensing technology, which includes a Kern Maps-200 Digitizing System and a JK Laser Holographic camera for laser holographic interferometry.

The Biomechanics and Tissue Engineering Laboratory provides equipment infrastructure...
tured 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 physiology to bones and joints. Including a custom built spine flexibility testing 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 Optotrack Certus, for measurement of three-dimensional kinematics of multiple rigid bodies and National Instruments data acquisition equipment.

The Department of Chemical and Biomolecular Engineering is located in Whitby Hall with undergraduate laboratories in the South Tower of the Auburn Science and Engineering Center. The Department of Civil and Environmental Engineering has a maximum capacity of 100,000 lbs., a load frame used to test full scale members and structural systems. The Structural Materials Laboratory is available. The Senior Design Project laboratories provide opportunities 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 volt/ampere meters, 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 a Labconco lyphorizer.

The Catalysis Research Laboratory is equipped with high pressure and high temperature IR reactor system with a Nicolet Magna-IR 560 Spectrometer Series II, a Nicolet Magna-IR 560 Spectrometer E.S.P. and a Barbers 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 lab is equipped with a gamma ray instrument for measuring porosity of packed columns and filter cakes, a Frazier Test to measure air permeability of filter media, a Hac Royco BR8 particle counter, a Zeta Meter and a Brookhaven EKA 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/ATR, GC/FID/TCD high pressure phase behavior apparatus, Berty 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.

The Department of Civil Engineering is located in the Auburn Science and Engineering Center and Schrunk 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 techniques. Laboratory equipment includes UV-visible spectrophotometers, resistometers, 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 hydraulic laboratory a titling flume enables the student to visualize water flow in streams and rivers. A pressurized pipe module is used to study frictional losses in different size 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 other soil properties. The testing is accomplished through the use of two universal testing machines with a maximum capacity of 100,000 lbs., five closed loop servo-hydraulic testing machines 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 range detection systems to provide traffic data for systems operation and analysis. The global positioning system tracks 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.

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

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 interfacing 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 microcomputers and industrial controllers in addition to measurement equipment and components.

The power electronics lab is taught as part of a power electronics course and teaches 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 electromagnetics/microwave laboratory uses basic experiments in transmission lines, waveguides and antennae 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.

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 acquisi-
tion systems. The Materials Testing Laboratory has a computer controlled servo-
hydraulic structural testing machine and a uniaxial universal testing machine for per-
foming static, quasistatic, cyclic and dynamic tests on a spectrum of engineer-
ing materials and several types of hardness testing equipment. The Parker Hannifin
Motion and Control Laboratory has hydraulic and pneumatic servo systems as well as
several pilot systems controlled by PLCs and computer controllers. The Experi-
mental Mechanics Laboratory has photoelastic strain measuring equipment and asso-
ciated 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 Engi-
neering Computer Network Facility (ECNF). The System Dynamics and Controls Lab-
oratory is composed of several microprocessors, analog computers, and digital
controllers, as well as equipment for process control and robotics. The Micro Elec-
tro Mechanical Systems (MEMS) Laboratory has instrumentation to build and char-
acterize MEMS devices.

The Vibration and Acoustics Laboratory has electromechanical shakers, sound pres-
sure level instrumentation, and frequency spectrum analyzers for modal analysis.
The Metallurgy and Failure Analysis Laboratory has a complete set of metallurgical
equipment including several high-resolution instruments supervised by a profes-
sional staff. The Applied Polymer Research Center, operated jointly with the Department of Chemistry, provides several high-resolution instru-
cements for macromolecules and polymer morphology. A nuclear magnetic resonance laboratory is maintained with several high-resolution instruments. The applied research section of the Maurice Mor-
ton 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 test-
ing of rubber and plastic materials. This Center provides classrooms and laboratories
for undergraduate students in the Mechanical Polymer Engineering program. The lab-
oratories available in the Department of Polymer Engineering include the and the
Extrusion Laboratory, the Electromagnetic Radiation and Electron Optics Laboratory, the
Thermal and Dielectric Laboratory, the Rheological Laboratory, and the Mechanical
Laboratory.

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.
Nine laboratories are available for authentic student learning experiences. All programs provide community experiences through intern-
ships, clinicals, and student teaching. These programs have active Advisory Com-
mittees of community professionals who provide advice and networking assistance. The School's Center for Family Studies offers a variety of certificate pro-
gam in Family and Consumer Science. The College maintains the Center of Community Intervention and Services. In cooperation with the College of Education, the School maintains the Center for Child Development for the study of child development and teacher edu-
cation. The school also houses the University of Akron Nutrition Center, a com-
prehensive laboratory 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.

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 com-
munity agencies and organizations. The strong commitment and interaction with a
network of agencies in the community serves as a laboratory for students.

The School of Speech-Language Pathology and Audiology provides profes-
sional and professional training to students who wish to become speech-lan-
guage pathologists and/or audiologists. The School houses the Audiology and Speech-Language Pathology Programs, which are accredited by the
depsor-Aurea Children's Hospital with a major emphasis in language development.
The Center offers durable solutions for children and adults with speech, language, or hearing problems.

College of Nursing

The College of Nursing, located in Mary Gladwin Hall, provides professional nursing edu-
cation to students at the bachelor'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 Nurs-
ing Education. The College has a Student Affairs Office which provides academic advis-
ing services to prospective students. The College contains a state-of-the-art Learning
Resources Center which includes 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, educa-
tion and research. The College of Nursing also has a Center for Gerontological Health Nurs-
ing and Advocacy whose primary goal is to improve the health care and quality of life for

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 Man-
agement and Business Certificate Programs are also available. Advanced practice spe-
cialties include adult/gerontological health nursing, behavioral health nursing, child
and adolescent health nursing and nurse anesthesia. Postmasters certificate programs include
adult/gerontological health nursing, behavioral health nursing, and 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 is 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.

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 elective courses in both poly-
mer science and polymer engineering for undergraduate 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 indus-
try. Options have also been developed in the College of Arts and Sciences in Chem-
istry and Physics which emphasize polymer science. In addition, an interdisciplinary
undergraduate program leading to a degree in Mechanical Polymer Engineering, approved by the faculties of the colleges Engineering and Polymer Science and Poly-
mer Engineering was started in fall 1995. Students in this program are administered in the College of Engineering, and the program is described in that section of this Bul-
elin.

The facilities of the Department of Polymer Science and the Maurice Morton Insti-
tute of Polymer Science (MMIPS) support fundamental and applied research in poly-
mer chemistry, polymer physics, and many aspects of polymer behavior. There are extensive laboratories for polymer synthesis 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 instru-
cements 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 serve industry and government agencies for a reliable source of problem solving and data. The total value of major instrumentation and equipment housed in the polymer science laboratories exceeds $15 million.

The Department of Polymer Engineering and Institute of Polymer Engineering maintain a broad-based, range, state-of-the-art processing, structural, and rheologi-
cal/mechanical characterization facilities to meet the needs of research and devel-
opment on materials for energy, environment, and health. Processing instruments and facilities include multi-functional extrusion, injection, blow molding, and rubber processing facilities. Polymer processing facilities include a range of equipment devoted to chemical measurements and instrumentation.

The APTC servers the region's academic and industrial needs by offering a wide vari-
ety of hands-on, non-credit courses as well as customized training. Since its open-
ing in 1997, the APTC has trained over 6,000 people in basic to advanced courses in the rubber and plastics industry world-wide. By actively attending to our clients, we have responded by adding courses of interest in the new and emerging fields of bio-mate-
rials and polymers for bio-medical applications in anticipation of collaboration with

Background Information

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the newly formed BioInnovation Institute in Akron. With a diverse set of course offerings that serve our industry, the APTC is the largest polymer training center in the United States.

The center offers 15 non-credit, short courses in the area of rubber chemistry, mixing and compounding. In addition, it presents a full complement of hands-on plastics programming designed to enhance the skills of incumbent workers in the plastics processing field. Its world-class training seminars and workshops are presented by instructors from the industry, who bring practical experience to the classroom.

For more information on the center, please contact Tayba Tahir, director; Akron Polymer Training Center, College of Polymer Science and Polymer Engineering, at (330) 972-8661 or via email at tahir@uakron.edu. Visit the APTC Web site at http://www2.uakron.edu/aptc.

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 and 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 worldwide, the Akron Polymer Training Center is the workforce development division of the Akron Global Polymer Academy.

University Libraries

Library facilities are housed in three separate locations: in Bierce Library on Buchtel Common; the Science Library in Auburn Science and Engineering Center, Room 104; and Archival Services in the Polsky Building, lower level.

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, audio-visual materials, and archival documents. The library receives more than 15,000 magazines, journals, 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.

Information Technology Services Division

Providing Information Technology (IT) Direction, Services and Support for The University of Akron.

The Information Technology Services (ITS) Division supports all of the University’s technology needs including data and communications. In today’s University environment, professionals, 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 360 Dell wireless laptops are available for two- and four-hour loans in Bierce Library, the Science & Technology Library, Circulation desk, the Student Union information desk, Polsky’s Room 267 and the Exchange Street Residence Hall. 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 Desktop PCs for students is located in the College of Arts & Sciences building, Room 103A.

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 dial-in access to the University Computer Network as well as direct network connections 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
- Microsoft Publisher
- Adobe Acrobat Reader
- Hummingbird Residency Job Entry
- McAfee Virus Scan 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 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 S2C

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. – 7 p.m.

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

Polsky 367

Monday – Friday: 8 a.m. – 8 p.m.

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

Hours of operation during the Fall and Spring semesters:

Monday–Thursday: 8 a.m. – midnight
Friday: 8 a.m. – 9 p.m.
Saturday: 10 a.m. – 4 p.m.
Sunday: 1 p.m. – 7 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), Springboard!, and email (WebMail). For more information, visit Software Training Service’s Web site at http://www.uakron.edu/its/learning/training/index.php.

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
- Administer placement testing for incoming university students.

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.

For further information, contact Design and Development Services at (330) 972-2443 or visit the website: http://www.uakron.edu/its/instructional_services.

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 Distance Learning Services at (330) 972-2720.

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.

UAs computer network, named UAnet, provides access to:
- ZiplINK – UAs 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 the 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

Katharine Owens, Ed.D., Associate Director of Operations

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 distinctive educational ventures. Providing consulting and training services to the polymer industry worldwide, 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 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 give all citizens, and particularly students, an opportunity to learn how to become active and competent in political life; to help maintain a tradition of ethical public service in 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 College of Medicine, 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 platforms. 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 currently involved 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, and 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

Robert H. Seiple, M.S., Manager
Crittenden J. Ohlman, Ph.D., Assistant Manager

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 (IRPA, DMTA), electron microscopy (STEM, TEM, SEM, AFM), 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

William T. Lyons, Jr., 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 Olin Hall, (330) 972-5855, wlyons@uakron.edu, or www.uakron.edu/centers/conflict.

H. Kenneth Barker 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.


Nancy K. Grant, Ph.D., Director

The intent and primary charge of the Center for Emergency Management and Homeland Security Policy Research (CEM/HSPR) is the improvement of the practice of emergency management. The Center focuses on policy and its interaction with the function of emergency management. This policy analysis and research relates to contemporary Emergency Management questions/issues in the State of Ohio and Nationally. Project areas include terrorism preparedness, business and industry continuity, disaster response, and recovery assessment as well as management practices relating to crisis and disasters.

Center for Environmental Studies

Ira D. Sasowsky, Ph.D., Director

The Center for Environmental Studies matches the expertise of about 100 faculty in 33 disciplines with the needs of students seeking study and research opportunities related to the environment. Since its founding in 1970, the center has sponsored, or in other ways supported, activities appropriate to understanding the Earth system and maintaining a quality environment for humanity.

The center offers both undergraduate and graduate certificate programs. By enrolling in selected courses outside of their major field of study, students have the opportunity to broaden their education and enrich their career development. A student may take courses in an area of interest and design a broad training required to address environmental concerns. The center also coordinates special forums, workshops, and seminars that address major issues. Examples include the National Energy Forum, the World Food Forum, and Evaluation of Environmental Data. Workshops on environmental studies in England, energy, and natural history exemplify the interdisciplinary approach to the understanding of issues.

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. The Center, an affiliate of the Work-Family Institute at Boston College, can supply current and credible information on work-family issues to its constituencies.

The Center is represented by faculty from 5 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 is a volunteer organization whose mission is to teach students and develop faculty in the principles and practices of the selected disciplines of information technology and electronic business. The Center’s activities will identify, promote, and teach the best practices in the design, development, and application of information technology in organizations.

Center for Literacy

Evangeline Newton, 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/colleges/educ/lit/index.php.

Center for Organizational Development

James J. Divoky, D.B.A., 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 Organizational Research

Dennis Doverspike, Ph.D., Director

The Center for Organizational Research is a business research and consulting center managed by the Industrial/Organizational Psychology Department at the University of Akron. The Industrial/Organizational Psychology Department at the University of Akron consistently ranks as one of the top ten programs in the nation (according to U.S. News & World Report).

The COR’s mission is to provide top quality consultation and research-based interventions to the business community. The COR also serves the purpose of providing professional training and research opportunities for graduate and undergraduate students. The COR is able to provide a tailored approach to the client’s needs because of its smaller client base and research orientation. COR offers larger organizations access to solutions based on cutting-edge research from a nationally regarded academic program.

Center for Policy Studies

Karl Kalenthaler, 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. 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 evolved from the Center for Urban Studies, established at the University of Akron in 1967. 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 tandem with 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://www3.uakron.edu/gstat/consulting.html, 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

Bridget A. Ford, Ph.D., Director

The Center for Urban and Higher Education is a public education and research unit within the College of Education with the broad purpose of improving student achievement pre-K through higher education. It serves both the University and the community by fostering collaboration among faculty, students, practitioners, and community leaders in educational conferences and seminars, research, and training.

English Language Institute

Debra L. Deane, M.A., Director

Established in 1979, the English Language Institute (ELI), part of Buchtel College of Arts and Sciences, offers two programs in English as a Second Language (ESL) instruction. The 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. ELI courses at four levels of English proficiency target language and academic skills needed for successful study at a U.S. university: reading efficiently, writing clearly, taking lecture notes, and communicating effectively in English. Students also study grammar and vocabulary and prepare for language proficiency tests to meet the University's English requirement. (The TOEFL, Test of English as a Foreign Language, or the ELI-ASSET, Academic Study Skills and English Test, along with ELI course grades may be used to successfully complete the ELI and begin academic coursework.) In addition, students receive a wide variety of support services to facilitate their transition to life and study in the United States.

The Community and Corporate ESL Program, designed specifically for nonnative English speakers living and working in Northeast Ohio, offers a variety of services including private tutoring and consulting (e.g., editing of documents, language assessment).

In addition to these instructional programs, the ELI administers the University of Akron Developed English Proficiency Test (the U-ADEPST), 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 eli@uakron.edu, or call 330-972-7544.

Fisher Institute for Professional Selling

The Fisher Institute for Professional Selling was founded in 1994. Its mission is to enhance the image of the sales profession, to promote professional selling and sales management as a rewarding lifetime career, to provide quality sales training and learning experiences, and to advance the knowledge of professional selling through the support of applied research.

William and Rita Fitzgerald Institute for Entrepreneurial Studies

James J. Divoky, D.B.A., Contact Person

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, 330-972-7043.

Institute for Global Business

Il-Woon Kim, Ph.D., Associate Director

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

Institute for Health and Social Policy

Richard C. Stephens, Ph.D., Interim Director

The Institute for Health and Social Policy, located on the fifth floor of the Polsky Building, was established in February 1999 for the study of the delivery of effective health and social services. The mission, objectives and research continuum are defined as follows:

Mission

To improve the quality of services to specific target groups most at risk of health and social consequences in order to decrease morbidity and mortality and the burden of health and social problems on the community and individuals.

Objectives

• Conduct research appropriate to the mission
• Collaborate with units on campus
• Assist faculty in the development of proposals

Research Continuum

• Epidemiology
• Intervention Development
• Service delivery
• Technology transfer
• Policy

Most of the work conducted by the Institute is on behalf of government or non-profit agencies. Faculty and students have the opportunity to collaborate on research and evaluation projects of national significance.

The Institute also serves as an educational resource for students and the community for the most up-to-date social and health services research available and the latest advances in behavioral and social science research technologies.

Institute of Polymer Science and Polymer Engineering

Roderic P. Quirk, 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, FTR, UV-vis, X-ray, AFM, goniometer), polymer processing (mixing, extrusion, film fabrication, rheology, filament winding, injection molding, electrospinning), electronics and electrical repair, machining, glassblowing and a variety of analytical and processing equipment. In cooperation with the Departments 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 Center 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
• 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 The Institute 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’s intellectual property law curriculum, and organizes 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.
The University of Akron 2009-2010

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 joint 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 Consortium 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 catalysis, 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 1962 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 regional 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 students and the community, provides nutrition services and conducts research in sports nutrition, chronic disease treatment, wellness and disease prevention, nutrition information technology, food safety and sanitation, and community nutrition.

Taylor Institute for Direct Marketing
Dale Lewison, Ph.D., 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 the Taylor Institute of Direct Marketing at (330) 972-8228 or taylorinfo@uakron.edu.

Training Center for Law Enforcement and Criminal Justice
Michael Jalbert, Interim Director
The Training Center for Law Enforcement and Criminal Justice, employing the expertise of the Criminal Justice Technology faculty and the experienced professionals in the field of Criminal Justice, provides state certified training in the following areas: Basic Peace Officer Training Academies, Private Security, 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 from the Division of EMS and offers all State Certified Classes for firefighter certification. The Center employs 190 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 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 Affairs
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. ULlifeLine 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 the CTCC Web site.
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.

Center for Career Management
The Center for Career Management’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 outreachs are provided throughout the campus community which includes a wide variety of topics such as resume writing, job search skills, dress for success, etiquette dining, and mock interviews. In addition, CCM 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. CCM 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 Center for Career Management. CCM is located in Simmons Hall, Room 301 and can be contacted at (330) 972-7747 or via the web at http://www.uakron.edu/ccm.

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, surgical benefits, and in-hospital medical benefits. Brochures describing details of the student health insurance plan may be obtained at Student Health Services.

Completed health forms and other health-related records are confidential and are kept in the Student Health Services offices. For more information, contact Health Services at (330) 972-7808. Information about student health insurance also is available at http://www.leonardinsurance.com.

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. This mission goes well beyond the legal requirements, including Section 504 of the Rehabilitation Act, 1973 and the Americans with Disabilities Act (ADA) of 1990, and supports the University’s commitment to create a welcoming environment for all students.

For more information, call (330) 972-7928 or (330) 972-5764 (TTY), see our Web site at www.uakron.edu/access, 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.

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, a movie theater, game room, student organization offices, Student Judicial Affairs, Computer Solutions—the computer technology store, a ZipCard office, the DocuZip copy center, bank, Ticketmaster outlet, Information Center, Barnes & Noble Bookstore, Planet Underground, and Starbucks Coffeehouse. Visit our website at www.uakron.edu/studentunion.

- Food Areas. On the first level is Zee’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, Sizzling 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; mail- ing 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.
- Ticketmaster Center. Located on the second floor, sells tickets to most events in northern Ohio, including Blossom Music Center, Public Hall Cleveland, and the Quicken Loans Arena. Over-the-counter sales include tickets to campus functions, sporting events and local shows.
- 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.
- Room Reservations can be obtained in the Student Union. Call (330) 972-8689 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. In addition, the store is a point of contact for other services, such as requesting a university network ID (UANet ID) or requesting a network connection in the residence halls.
- 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.

Office of Student Judicial Affairs
Student Judicial Affairs is the office that receives and reviews referrals that allege violations of the University’s Student Code of 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 (Student Code of Conduct). The Student Code of Conduct can be accessed by visiting www.uakron.edu/jsja or visiting the Office of Student Judicial Affairs, Student Union 216. For more information regarding the Student Code of Conduct, please contact the Office of Student Judicial Affairs at jsja@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 accordance 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 Affairs 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 safety 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 the Office of Student Judicial Affairs. The Student Code of Conduct Manual explains the University’s disciplinary process and is available through the Office of 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 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 for a small fee.

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.

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. 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 t-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, walk with a companion to 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, http://www.uakron.edu/ogc/Preventa-
EMERGENCY PHONE NUMBERS

Call extension 911 on campus to reach UA police immediately.

- Police ................................................................. 2911
- Campus Patrol ..................................................... 8000
- (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 1902, the Colleges of Engineering and Business 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. Cherrington, 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. Brinkhous was appointed dean of Graduate Studies and Research in 1967, being succeeded in 1968 by Dr. Edwin L. Livsey, Dr. Cléobourn E. Griffin succeeded Dr. Livsey 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. Carrell 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 1996 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 biology, 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.

The school also
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)

SECTION 2. General Information

REGULATIONS

Student Responsibility
A student assumes full responsibility for knowing the regulations and pertinent procedures of the Graduate School as set forth in this Bulletin. Normally, the degree requirements in effect at the time a student is admitted to a program will apply through graduation. However, if existing programs are revised, the student has the option of pursuing the revised program as long as all requirements in the revised program are met. Additional information pertaining to programs can be obtained from the appropriate department chair.

Admission
Every person who desires to enroll in or audit any graduate credit course must be first admitted or approved by the Graduate School.

Online applications for admission to the Graduate School should be submitted electronically at least six weeks (domestic) and six months (international) before the start of the term for which admission is sought in order to allow adequate time for complete processing. No applications will be accepted after the University deadline for applications, which is usually about three weeks before the beginning of a term and is published in the Schedule of Classes. Some programs, such as nursing, counseling, and counseling psychology have earlier deadlines. Applicants should contact the departments for more detailed application information.

First-time applications to the Graduate School must be accompanied by an application fee. The fee for domestic students is $30. The fee for international students is $40. A fee of $25 must accompany all domestic and international reapplications.

An official transcript from each college or university attended must also be received by the Graduate School before the application will be processed. This applies to the complete academic record, both undergraduate and graduate. Transcripts should be sent from the institutions attended directly to the Graduate School. The applicant is responsible for seeing that the above conditions are met by the deadlines for filing applications.

All records, including academic records from other institutions, become part of the official file and cannot be returned for any purpose. An offer of admission will be made to an applicant who meets all admission requirements. However, it must be recognized that staff, facilities, and other resources are limited, so the number of students accepted will vary among departments and from term to term. An accepted applicant may begin graduate work in the fall, spring or summer semester. The offer of admission is void, however, if the applicant does not register for courses within two years from the time of admission. An individual whose offer of admission has lapsed must submit a new application to be reconsidered.

The student is admitted only for the purpose or objective stated on the application for admission. A new request for admission must be filed when the original objective has lapsed or when the student wishes to change objectives. The admitted status terminates when the time limits have been exceeded or other conditions for continued admitted status have not been met.

No student will be admitted without approval and acceptance by a department within the University, but admission to a department does not necessarily imply admission to or candidacy for any graduate degree program in that department. Admission for graduate study in any program can only be granted by the dean of the Graduate School.

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. A 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 admisssibility 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 for the last two years (64 semester credits or equivalent); or holds an advanced degree from an accredited college or university in or appropriate to the intended field; or holds a baccalaureate or master’s degree from a foreign college or university with first-class standing or its equivalent, plus satisfactory evidence of competence in English.

- **Deferred Admission** may be granted if the applicant’s record does not meet provisions of the requirements for full admission. Any change must be arranged through the Graduate School. Graduate-level coursework cannot be taken by a student under the deferred admission status.

- **Provisional Admission** may be given to any applicant 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 the 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 provisions of the requirements for full admission. Any change must be arranged through 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 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 the 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 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 before the end of the following semester (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 “F” 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 undergraduate and graduate programs. Tuition and fees shall be collected if allowed under sponsoring contract for any courses the fellow may choose to take;
  - 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;
  - 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 credit. 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 for which the applicant desires admission to the program;
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/docs/gaHandbook.pdf.

International Students

The University of Akron welcomes international students and seeks to make their educational experience pleasant and meaningful. Each year, approximately 850 international students from 85 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 to the Office of International Programs, The University of Akron, Polsky Building, Room 483, Akron, OH 44325-2101, 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, applicants who are fully admitted may enroll in graduate course work and be eligible for University of Akron-funded assistantships, fellowships, or scholarships. Prospective teaching assistants must also achieve a minimum score of 50 on the Test of Spoken English (TSE) or a passing score on the University of Akron Developed English Proficiency Test (the U-ADEPT), or a 23 or greater on the speaking component of the internet-based TOEFL. See http://www.ets.org/toefl for information about the TSE. Visit http://gradsch.uakron.edu/eli/UADEPT/uadept_index.html for details about U-ADEPT.

Applicants to graduate programs can demonstrate their English proficiency in one of these ways:
- A minimum score of 550 on the paper-based Test of English as a Foreign Language (TOEFL) or 213 on the computer-based TOEFL or 79 or higher on the internet-based TOEFL. (The following departments require a higher standard of proficiency: the Ph.D. program in Sociology requires a TOEFL of 577/233/90; the M.S. program in Urban Studies and Public Affairs requires a TOEFL of 570/230/88; English and History require a TOEFL of 580/237/92; and Biomedical Engineering requires a TOEFL of 590/243/96.) Scores more than two years old will not be accepted. See http://www.toefl.org for information about the TOEFL.

- A minimum score of 6.5 on the International English Language Testing System (IELTS), which is managed by University of Cambridge ESOL Examinations, British Council, and IDP Education Australia. Scores more than two years old will not be accepted. See http://www.ielts.org for information about the IELTS.

- Successful completion of a full course of study in the Advanced Level of the English Language Institute (ELI) at The University of Akron. The ELI is an intensive (20 hour a week) program in English for academic purposes. The Advanced Level course of study is offered every Fall, Spring, and Summer according to the university’s academic calendar. For details about successful completion and about applying to the English Language Institute, see http://www.uakron.edu/eli.

- Successful completion of 24 credit hours of upper-level undergraduate or 18 credit hours of graduate course work at a U.S. university or college in which English is the primary language of instruction. Successful completion is defined as maintaining a 3.0 GPA in full-time, continuous studies. Applicants must submit original transcripts of their course work.

- Successful completion of an undergraduate or graduate program at a university outside the United States in which English is the language of administration and instruction. English must be used for all administrative functions and for all areas of instruction (with the exception of foreign language courses) including course lectures, materials, discussions, readings, and writing assignments. Applicants must submit an original official document from the undergraduate or graduate institution certifying that all of the administrative functions and instruction are conducted in English. The document must be signed by an officer of the institution and carry an official seal. The Associate Dean of the Graduate School at The University of Akron will review the submitted documentation and inform the applicant if he/she has satisfied the English requirement. The decision will be final.

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). This form indicates additional costs for an F-1/J-1 student’s dependents; should they accompany or join the student here. Annual tuition and living expenses for the 2009-2010 academic year will be approximately $23,000. Tuition is subject to change.

Graduate students may request financial aid through fellowships and graduate assistantships. A graduate student interested in applying for this aid should request the necessary forms when requesting the admission application.

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.

International Student Orientation

The required international Student Orientation takes place two weeks before Fall classes begin and the week before Spring classes begin and costs $75 (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 a native language and who expect to become a teaching assistant must demonstrate proficiency in English through departmental certification. Neither English proficiency testing nor departmental certification is required for research, instructional, or administrative assistants.

Note: International students are encouraged to contact the Office of International Programs directly with questions about housing, climate, insurance, or immigration regulations. Questions concerning degree programs should be directed to the appropriate academic department.

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:

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<tr>
<th>Grade</th>
<th>Points</th>
<th>Quality</th>
<th>Key</th>
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</thead>
<tbody>
<tr>
<td>A</td>
<td>4.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A-</td>
<td>3.7</td>
<td></td>
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<tr>
<td>B+</td>
<td>3.3</td>
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<tr>
<td>B</td>
<td>3.0</td>
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<tr>
<td>B-</td>
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<td>C+</td>
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<td>C</td>
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<td>C-</td>
<td>1.7</td>
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<td>D+</td>
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<td>D-</td>
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<td>F</td>
<td>0.0</td>
<td>Failure</td>
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<tr>
<td>CR</td>
<td>0.0</td>
<td>Credit</td>
<td></td>
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<tr>
<td>NC</td>
<td>0.0</td>
<td>No credit</td>
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<td>AUD</td>
<td>0.0</td>
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</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 part 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 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”).

W – 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 of 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 recalculations 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 graduate 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 will dismiss full-time students who do not return to good academic standing within two consecutive semesters (excluding summers) 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” should 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:

• September 15 for Spring Commencement
• February 15 for Summer Commencement
• May 15 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 Student Code of Conduct available at www.uakron.edu/ujia. In Student Union 216, or by contacting Student Judicial Affairs at 330-972-6380 or sjia@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.

A student who has been accused of academic dishonesty will be asked to meet with the course instructor. The matter can be resolved informally at the College level and/or an academic sanction can be imposed. If the student opposes the decision, he/she may appeal to the College Dean.

A further discussion of these procedures and other avenues for recourse can be found in the Grievance Procedures for Graduate Students, available at the Graduate School, The Polsky Building 489, and included 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 any person 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 3345.011 of the Revised Code, and shall also include private medical and dental colleges which receive direct subsidy from the state of Ohio.
4. “Domicile” as used in this rule is a person’s permanent place of abode so long as the person has the legal ability under federal and state law to reside permanently at that abode. For the purpose of this policy, 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 and (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 or her enrollment in an institution of higher education and who is not receiving, and has not directly or indirectly received in the preceding twelve consecutive months, financial support from persons or entities who are not residents of Ohio for all other legal purposes.
3. A dependent student of a parent or legal guardian or the spouse of a person who, as of the first 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:
   a. A sworn statement from the employer or the employer’s representative on the letterhead of the employer or the employer’s representative certifying that the parent, legal guardian, or spouse of the student is employed full-time in Ohio.
   b. A copy of the lease under which the parent, legal guardian, or the spouse is the lessee and occupant of rented residential property in the state; a copy of the closing statement on residential real property located in Ohio of which parent, legal guardian, or spouse is the owner and occupant; or if parent, legal guardian, or spouse is not the lessee or owner of the residence in which he or she has established domicile, a letter from the owner of the residence certifying that parent, legal guardian, or spouse resides at that residence.

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

1. Criteria evidencing residency
   a. if a person is subject to tax liability under Section 5747.02 of the Revised Code;
   b. if a person qualifies to vote in Ohio;
   c. if a person is eligible to receive Ohio public assistance;
   d. if a person has an Ohio driver’s license and/or motor vehicle registration.

2. Criteria evidencing lack of residency
   a. if a person is a resident of or intends to be a resident of another state or nation for the purpose of tax liability, voting, receipt of public assistance, or student loan benefits (if the student qualified for that loan program by being a resident of that state or nation);
   b. if a person is a resident of or intends to be a resident of another state or nation for any purpose other than tax liability, voting or receipt of public assistance (see paragraph (D)(2)(a) of this rule).

3. For 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.

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

1. A person who is living and is gainfully employed on a full-time or part-time self-sustaining basis in Ohio and is pursuing a part-time program of instruction at an institution of higher education shall be considered a resident of Ohio for these purposes.
2. A person who enters and currently remains upon active duty status in the United States military service while a resident of Ohio for all other legal purposes and his or her dependents shall be considered residents of Ohio for these purposes as long as Ohio remains the state of such person’s domicile.
3. A person on active duty status in the United States military service who is stationed and resides in Ohio and his or her dependents shall be considered residents of Ohio for these purposes.
4. A person who is transferred by his or her employer beyond the territorial limits of the 50 states of the United States and the District of Columbia while a resident of Ohio for all other legal purposes and his or her dependents shall be considered residents of Ohio for these purposes as long as Ohio remains the state of such person’s domicile as long as such person has fulfilled his or her tax liability to the state of Ohio for at least the tax year preceding enrollment.
5. A person who has been employed as a migrant worker in the state of Ohio and his/her dependents shall be considered a resident for these purposes.

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

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

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

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 when his or her parents or legal guardian removes their residency from the state of Ohio shall continue to be considered a resident during continuous full-time enrollment and until his or her completion of any one academic degree program.

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

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

4. Any person once classified as a nonresident, upon the completion of twelve consecutive months of residency, must apply to the institution he or she attends for reclassification as a resident of Ohio for these purposes if such person in fact wants to be reclassified as a resident. Should such person present clear and convincing proof that no part of his or her financial support is or in the preceding twelve consecutive months has been provided directly or indirectly by persons or entities who are not residents of Ohio for all other legal purposes, such person shall be reclassified as a resident. Evidentiary determinations under this rule shall be made by the institution which may require, among other things, the submission of documentation regarding the sources of a student’s financial support.

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

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

**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 1-800-621-3847.

**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...Finances -> 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/Busfin/studentfin/billing.php by selecting the term of interest. Students enrolling the Installment Payment Plan for the fall or spring semester will make three installments over the term. During the summer session there are two installments.

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, e.g., instructional, general, parking, etc., 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. 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

Certain fees are subject to refund.

- Instructional fee (tuition) and nonresident surcharge.
- General fee.
- Course materials and computing fee.
- Student parking fee (only if permit is returned).
- Student teaching fee.
- Laboratory breakage and late service deposit.
- Residence hall fees (note: subject to special policy).
- Technology fee

Amount of Refund

Amount of refund is to be determined in accordance with the following regulations and subject to course instructor/advisor signature requirements contained in the University’s official withdrawal policy:

- 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
  - if the student requests official withdrawal, the following refund percentages apply:
    - If 6.667% of class attended: 100%
    - If 13.333% of class attended: 70%
    - If 20% of class attended: 50%
    - If 26.667% of class attended: 30%
    - If 33.333% of class attended: 20%
    - Greater than 33.333% of class attended: 0%

- Refunds for course sections are based in class length. The courses which have not been scheduled consistent with the standard 15 week fall/spring/summer semester will also be handled on a prorated 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. If a drop occurs on class day, it is counted as a day attended for the purpose of refund.

- 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 formal withdrawal earlier, in which case the refund will be determined as 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.

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.
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 3.0 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.

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
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/forms.php, 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/graduation 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/gradThesDiss.php.

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 terms. 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 collegiate dean and the dean of the Graduate School.

* The doctoral program in engineering is an interdisciplinary program offered on a collegiate basis. In the descriptions of University doctoral degree requirements on the following pages, citations of department or departmental faculty should be interpreted as citations of college or collegiate faculty with specific reference to the doctoral program in engineering.
Continuous Enrollment Requirement

All students admitted to doctoral programs must register for a minimum of one graduate credit as approved by 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 specific 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 90 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 prior 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 3.00 or better. Transfer credits from other institutions shall not be computed as part of a student’s University of Akron grade point average.

Individual course transfer or credit must 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 major 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 techniques (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, educational 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 requirement.

*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/gradsch/forms.php, 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 and submit 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/gradsch/gdlnThesDiss.php. 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., Interim Dean
Annabelle Foos, Ph.D., Associate Dean
Charles B. Monroe, 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 Classical Studies, Anthropology, and Archaeology; 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
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.

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
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 a joint 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 necessitate using information 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, biotechnology, bioinformatics, and biophysics 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. 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, a 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:

• Strong academic background as evidenced by grade point average of at least 3.0
• GRE scores
• Strong letters of recommendation
• Willingness of one or more potential advisors to take student on as an advisee

Doctor of Philosophy in Counseling Psychology

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 [http://www.apa.org/ed/accreditation/homepage.html]. 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. The typical program involves four years of study and faculty involvement with exams and dissertations.

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. Departments 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 (60, 620, 630, 640, 650) 10
- Counseling psychology core courses (707, 709, 710, 711, 712, 713, 715, 717) 33
- Practicum sequence (672 [2+2+2+2], 673 [2+2+2+2], 795 [4+4], 796 [4+4]) 32
- History, measurement, and developmental coursework (718, 727, 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. The 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

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.
• Complete studies selected by the student in consultation with an advisory committee, including:
  – 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 cognitive field. Those whose native language is not English must demonstrate proficiency in English.

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 all general requirements for the Doctor of Philosophy degree.

Doctor of Philosophy in Psychology

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 Aptitude and Advanced Psychology Test;
  – securing of three letters of recommendation;
  – Major field:
    – a minimum of 90 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 conjunction 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);
Doctor of Philosophy in Sociology
Akon-Kent Joint Ph.D. Program

The University of Akron and Kent State University offer a joint doctoral program leading to the Ph.D. degree. Faculty and students engaged 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 and students interchange freely.

Admission to the Program

A student may apply with a completed master’s degree or equivalent or after at least one year of full-time coursework or equivalent (18 credits) in the sociology master of arts program at The University of Akron. The coursework must include the master of arts core sequence. Scores from the general exam of the Graduate Record Examination (GRE) are required as part of the doctoral application. 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 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).

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.

- Completion of a research practicum (three credits). This may be waived for the student who already has sufficient research experience.
- Completion of a minimum of 60 credits of graduate-level (600 or higher) coursework beyond the bachelor’s degree.

Degree Requirements (for a student admitted without the master’s degree)

In addition to meeting the requirements for a student admitted with the master’s degree, the student must meet the following requirements:

- Full residency requirement of the Graduate School.
- Register for a minimum of 30 credits of dissertation credit, complete a dissertation and successfully defend it in an oral examination.

Doctor of Philosophy in Urban Studies and Public Affairs

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 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).

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):
  - 3980:700 Advanced Research Methods I
  - 3980:701 Advanced Research Methods II
  - 3980:705 Economics of Urban Policy
  - 3980:708 Urban Policy: The Historical Perspective
  - 3980:710 Qualitative Research Methods
  - 3980:716 Theoretical Foundations for Public Affairs
  - 3980:740 Survey Research Methods
  - 3980:780 Ph.D. Colloquium
  - 3980:795 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.

**Biology**

**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 indicating the proposed area of specialization and possible advisors 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) >=50 on the Test of Spoken English (TSE), or c) a passing score on the U-Advent test

**Master of Science**

**Thesis Option I**

This program is primarily for the student who will pursue a research career, including the student who intends to enter 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.

**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
- 3100:673 Integrative Stress Physiology
- 3100:676 Integrative Physiology

**Non-thesis 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.

**Chemistry**

**Master of Science**

- Chemistry coursework – with the approval of the advisor, up to 12 credits may be taken in related areas – 24 credits.
- Research and thesis – six credits.
- Participation in departmental seminars.

**Computer Science**

**Master of Science – Computer Science**

**Admission Requirements**

All applicants for admission to the graduate program in computer science must meet the university requirements for graduate admission as published in Section 3 of the Graduate Bulletin. In addition to these requirements, the applicant must also:

- submit 3 letters of recommendation from individuals capable of evaluating the applicant’s potential for success in the program;
- 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 proficiency in the areas of differential and integral calculus, probability and statistics, discrete mathematics, and knowledge of at least one high-level, general purpose programming language; and,
- demonstrate proficiency in the areas of data structures, assembly language, computer organization, operating systems, and the theory of programming languages. A student deficient in one or more of these areas may be granted provisional admission.

The Aptitude Test of the Graduate Record Examination is required, and the GRE Advanced Computer Science Test is recommended.

**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 non-thesis 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.

- Core Courses (required of all students):
  - 3460:598 Research Methodology
  - 3460:535 Analysis of Algorithms
  - 3460:635 Advanced Algorithms and Complexity Theory

In addition, each student must complete at least one course from each of the following three areas:

C. Applications: 3460:698, 660, 676.

**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**

**Admission**

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.

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

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.

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

Thesis Option
A minimum of 33 credits is required (27 credits of coursework and 6 credits of thesis). Of the 27 credits of coursework, 18 must be at the 600 level and 12 must be in literature or literary theory.

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

Nonthesis Option
A minimum of 30 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>3200:506</td>
<td>Chaucer†</td>
<td>3</td>
</tr>
<tr>
<td>3200:615</td>
<td>Shakespearean Drama†</td>
<td></td>
</tr>
<tr>
<td>3200:665</td>
<td>Literary Criticism†</td>
<td></td>
</tr>
<tr>
<td>3200:570</td>
<td>History of the English Language†</td>
<td></td>
</tr>
<tr>
<td>3200:670</td>
<td>Modern Linguistics†</td>
<td></td>
</tr>
</tbody>
</table>

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

British American

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to 1660</td>
<td>Up to 1865</td>
<td></td>
</tr>
<tr>
<td>1660-1900</td>
<td>1865-present</td>
<td></td>
</tr>
<tr>
<td>1900-present</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Graduation Requirement: Candidates for graduate must see the Department of English Graduate Coordinator to complete the departmental Graduate Student Sur-

Master of Arts – Composition Track

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 Curricular and Instructional Studies for requirements for state certification to teach in the public schools.

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, 15 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 Sur-

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>3300:699</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 Sur-

†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

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.

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 - 6 credits
• Literature Courses - 9 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 Arts in Geography

Thesis 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 credit hours)
  - 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

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

Master of Science in Geography/Geographic Information Sciences

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)
  - 3350:631 Facilities Planning
  - 3350:630 Planning Theory
  - 3350:631 Facilities Planning
- No more than three credits of 3350:698 Independent Reading and Research

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
- At least 9 credits and no more than 15 credits of 3350:699
- 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

Geology

Master of Science

- Complete a minimum of 30 credits of which at least 10 credits shall be at the 600 level and no more than two in research problems and six in thesis research.
- In all geology M.S. degree programs except Engineering Geology, at least 22 graduate credits shall be geology courses.
- A proficiency exam is taken during the student’s first semester in the M.S. program. Students who demonstrate a lack of knowledge in areas related to their thesis topics may be required to take additional or remedial courses as suggested by the examining committee. Students may not begin formal thesis work until the proficiency exam has been completed. (Formal thesis work includes the thesis proposal and/or thesis research credits) Field camp can be taken for graduate credit; however, it will not count toward the 30 credits for the M.S. in the geology and geophysics specializations.
- Core Requirements:
  - 3370:680 Seminar in Geology
  - 3370:699 Master’s Thesis
- Oral presentation and defense of thesis.
Degree Specialization

Geology

The minimal background for admission without deficiency should include a six-credit geology field camp course and equivalents to courses in mineralogy, petrology, structural geology, sedimentology/stratigraphy, and any two upper level geology courses.

Students should have completed the equivalent of a minimum of six semester 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 his/her planned program of study.

Earth Science

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 5600:780 Seminar in Curricular and Instructional Studies: Earth Science, or equivalent.

Geophysics

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

Engineering Geology

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.

- 3370:101 Introductory Physical Geology 4
- 3370:210 Geomorphology 3
- 3370:350 Structural Geology 4
- 3450:221/23 Analytical Geometry Calculus I, II, III 12
- 4300:201 Statics 3
- 4300:202 Introduction to Mechanics of Solids 3
- 4300:313 Soil Mechanics 3
- 4300:314 Geotechnical Engineering 3

• Required courses:
  - Graduate Geology Courses 18
  - Graduate Engineering Courses 8

Environmental Geology

Equivalents of the University’s B.S. degree in natural science (biology, chemistry, geology, mathematics, or physics) or engineering, plus the equivalent of the University’s minor in geology and Geology Field Camp I and II are required. As many as eight credits may be selected from engineering, biology and/or geography with the approval of a geology advisor.

History

Master of Arts

- 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 intents 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 Written Language (TOEFL), at least 240 on the Test of English as a Spoken Language (TSE), and take the Test of Written English (TWE).

• Degree requirements include:
  - 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
    - Early Europe to 1750
    - America to 1877
    - United States Since 1877
    - Latin America

Graduate Studies

Europe, 1750 to the Present
South Asia
Middle East
Africa

History of Science

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

- The student must pass written examinations in two of the three fields. The third field requirement will be met by at least seven credits of coursework at the graduate level, completed with a GPA of 3.0.
- 3400:689 Historiography
- Twenty-three hours of 600-level coursework, at least 16 credits of which must be in seminars. Seminars must be chosen to satisfy one of the following options.

Option I

Three reading seminars and one writing seminar, with the writing seminar paper read and approved by two faculty members.

Option II

Two reading and two 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 read and approved by two faculty members.

Physics

Master of Science

• 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 credits applicable toward the degree.

- Complete an approved program of courses which includes the following required courses:
  - 3650:551 Advanced Laboratory I 3
  - 3650:615 Electromagnetic Theory I 3
  - 3650:625 Quantum Mechanics I 3
  - 3650:641 Lagrangian Mechanics 3
  - 3650:661 Statistical Mechanics 3
  - 3650:685 Solid-State Physics I 3

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

- 3650:581,2 Methods of Mathematical Physics I, II 6
- 3650:616 Electromagnetic Theory II 3
- 3650:626 Quantum Mechanics II 3
- 3650:552 Advanced Laboratory II 3

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 3650:699 Master’s Thesis for the completion of a master’s thesis 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 admission and degree requirements for the Ph.D. in chemistry, as outlined in page 25 of this Graduate Bulletin. The Chemical Physics option is described in detail on page 28.

Students entering the Chemistry Ph.D. program under the auspices of the Physics Department will be expected to have taken some advanced undergraduate chemistry course work at a high level, and, must be recommended by the chair of the Physics Department. These students must submit 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.
Master of Arts

Admission
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. The Graduate Record Examination (GRE) is recommended, but not required.

The Master of Arts in Political Science allows students to focus their study in one of five concentrations: American Government Institutions, American Linkage Institutions, The Politics of Criminal Justice, International Politics, or Comparative Politics.

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 18 credits at the 600 level, as follows:
  - Two required core courses:
    - 3700:600 Scope and Theory of Political Science 3
    - 3700:601 Research Methods in Political Science 3
  - Three additional departmental seminars, 9 credits (neither independent research, thesis, nor internship is considered a graduate seminar).
  - Six credits of Topics in Master’s Research (3700:696).
  - Nine additional credits at the graduate level.

- Pass a comprehensive written examination covering one concentration: American Government Institutions, American Linkage Institutions, The Politics of Criminal Justice, International Politics, or Comparative Politics.

- Complete the following writing requirement:
  - An Essay of Distinction is a single, article-length, scholarly essay. 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 study, a conference presentation, a published article, or a deliverable policy analysis.

To complete an Essay of Distinction, students shall take six credit hours of Topics in Master’s Research. Those credits must be completed in the form of two consecutive three-credit courses (3700:696) taken in the student’s third and fourth semesters. The student’s Faculty Advisory Committee must approve the topic and completed essay.

Master of Applied Politics

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 contests, influencing legislation, and political organization.

Admission
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) is not required. The program is designed to accommodate students taking course work on a part-time 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
  - * Three credits required: additional credits will be counted toward elective credit.
  - Elective courses - 21 credits (6 credits must be at the 600-level)

  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
  - Six credits from the following:
    - 3700:579 American Government Institutions 3
    - 3700:587 International Politics 3
    - 3700:594 Comparative Politics 3
    - 3700:595 APS 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
      - 3700:696 Internship in Government and Politics 3

- An applied politics capstone project assigned by the student’s advisor.
- At least two major papers prepared for required courses.
- An applied politics capstone project assigned by the student’s advisor.

J.D./Master of Applied Politics

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

- Choose one from the following courses:
  - 3700:655/9200:655        Campaign Management I 3
  - 3700:662 Media Law 3
  - 9200:664 Selected Legal Problems 3 or 4
  - 9200:696 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
  - 3700:696 Internship in Government and Politics 3

- An applied politics capstone project assigned by the student’s advisor.

- 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.

Psychology

Master of Arts

- 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;
  - GPA of 3.00 in psychology courses;
  - Graduate Record Examination Aptitude and Advanced Psychology Test;
  - three letters of recommendation.

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**
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**
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.

**Degree Requirements**
Satisfactory completion of a minimum of 33 credit hours of graduate study, including 18 credit hours of core classes and 15 credit hours in an approved specialization.

**Required Core (18 credits)**
- 3980:600 Basic Quantitative Research 3
- 3980:601 Advanced Research and Statistical Methods 3
- 3980:616 Public Organization Theory 3
- 3980:643 Introduction to Public Policy 3
- 3980:671 Program Evaluation in Urban Studies 3
- 3980:675 Advanced Techniques in Policy Analysis 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.

**Admission**
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:

- A personal essay explaining why the study and completion of a MA degree will help them with their personal or professional goals.

**Mission Statement**
The mission of the Consortium of Eastern Ohio Master of Public Health (CEOMPH) program is to provide accelerated public health education for the working professional. It does this through a collaborative learning community, drawing on the collective resources of its six member institutions and partnering community agencies. The program strives to provide 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 letters of recommendation 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 an MPH degree; and professional or academic career 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). For administrative purposes, students will be enrolled at one of the five universities: UA, CSU, KSU, OU, or YSU. If accepted, the Consortium of Eastern Ohio Master of Public Health (CEOMPH) Admissions Committee will assign students an “enrollment university,” based on his/her preference. Questions may be addressed in writing to the above address or applicants may contact the MPH Program office by telephone at (330) 325-6179, fax (330) 325-5907, or e-mail at pubhinf@uosouc.org.

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:**

- 8300:601 Public Health Concepts 3
- 8300:602 Social and Behavioral Sciences in Public Health 3
- 8300:603 Epidemiology in Public Health 3
- 8300:604 Biostatistics in Public Health 3
- 8300:605 Health Services Administration in Public Health 3
- 8300:606 Environmental Health Sciences in Public Health 3

**Subtotal** 18

**Additional program requirements:**

- 8300:608 Public Health Practice and Issues (required) 3
- 8300:697 Capstone Project (required) 3-6

**Electives (15-18 credits):**

- 8300:610 Grant Writing for Public Health Practice (directed elective) 3
- 8300:696 Practicum 1-3
- 8300:696 Independent Study 1-3
- 8300:686 Special Topics 1-5

**Total** 42

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

**Sociology**

**Master of Arts**

**Thesis Option**

Satisfactory completion of 31 semester credits of which at least 21 must be at the 600 level or higher in sociology (excluding 3850:697, 3850:698, and 3850:699). In meeting these requirements the student must:

- Complete four required core courses with at least a 3.00 grade-point average:
  - 3850:601 Proseminar in Sociology 1
  - 3850:604 Research Design and Methods 3
  - 3850:706 Multivariate Techniques in Sociology 3
  - 3850:722 Early Sociological Thought 3

- Complete at least six hours of thesis work (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**

This degree is intended for the student who wants intensive substantive training in a specialized area. Completion of 31 credits of graduate work with no more than six credits taken at the 500 level. In meeting these requirements the student must:

- Complete three required core courses with at least a 3.00 grade-point average:
  - 3850:601 Proseminar in Sociology 1
  - 3850:604 Research Design and Methods 3
  - 3850:722 Early Sociological Thought 3

- Completion of at least 15 credits in a contracted specialty area. This area must be defined in consultation with the student’s advisor and approved by the Graduate Studies Committee. Courses from other departments may be taken to meet the specialty requirement.

- Pass an oral examination on the specialty area.

**Research Paper Option**

Satisfactory completion of 31 semester credits of which at least 21 must be at the 600 level or higher in sociology (excluding 3850:697, 3850:698, and 3850:699). In meeting these requirements the student must:

- Complete four required core courses with at least a 3.00 grade-point average:
  - 3850:601 Proseminar in Sociology 1
  - 3850:604 Research Design and Methods 3
  - 3850:706 Multivariate Techniques in Sociology 3
  - 3850:722 Early Sociological Thought 3

- Complete at least six hours of Master’s Research Paper work (3850:699). No more than six credits will count toward the degree, but a student may register for more than six (8) hours.

- Completion of Master’s Research Paper and successful oral defense of paper.
Spanish

Master of Arts

- 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

- 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.

- Core curriculum:
  - 3470:590 Statistical Data Management 3
  - 3470:621 Probability and Statistics 4
  - 3470:622 Advanced Mathematical Statistics 3
  - 3470:663 Experimental Design 3
  - 3470:665 Regression 3
  - Total 16

- Electives: 8-9 credits

Nonthesis Option (minimum of 30 credits)

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

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 and three credits in 3450:699 Master’s Thesis must be completed.

Graduate Studies

Coordinated Program

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 38, College of Engineering), shall apply to all applicants for the Engineering Applied Mathematics Program.

BS/MS Program in Mathematics

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 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
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

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 work will include the following courses:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>3450:621</td>
<td>Real Analysis</td>
<td>3</td>
</tr>
<tr>
<td>3450:627</td>
<td>Advanced Numerical Analysis I</td>
<td>3</td>
</tr>
<tr>
<td>3450:633</td>
<td>Methods of Applied Mathematics I</td>
<td>3</td>
</tr>
<tr>
<td>3450:692</td>
<td>Seminar in Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>3450:699</td>
<td>Master’s Thesis (for thesis option)</td>
<td>3</td>
</tr>
</tbody>
</table>

- **At least one course from the following:**
  - 3450:625 Analytic Function Theory
  - 3450:628 Advanced Numerical Analysis II
  - 3450:632 Advanced Partial Differential Equations

- **At least two courses from the following:**
  - 3450:634 Methods of Applied Mathematics II
  - 3450:635 Optimization
  - 3450:730 Advanced Numerical Solution of Partial Differential Equations

- **Graduate Electives**
  - 6 credits

A minimum of 30 graduate credits plus a project paper for non-thesis option

### 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 1989-90, 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

The Doctor of Philosophy in Engineering is an interdisciplinary doctoral program offered on a collegiate basis.

### 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, at least two letters of recommendation, and official results of the verbal, quantitative, and analytical portions of the GRE. 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 1500. 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 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 Bio-

### Electives: 8-9 credits

- 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.
medical 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 admisibility 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 infra-structure 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, mechanics of solids, fluids, solid, and composite materials.

Systems Engineering include 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 standpoint. 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 biomaterials.

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.

The interdisciplinary doctoral program has succeeded in providing doctoral students access to the resources of the entire college while providing an economically sound administration for a program that deals with a doctoral population that is much smaller than those for undergraduate or master’s degrees.

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

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.

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.
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 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.

Joint program for the M.D. and Ph.D. in Engineering degree between the College of Engineering at The University of Akron and the Northeastern Ohio Universities College of Medicine.

The College of Engineering and NEUCOM 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 NEUCOM.

Degree Requirements

To obtain an M.D. degree from NEUCOM and a Doctor of Philosophy Degree in Engineering, the student must satisfy NEUCOM’s 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

Applications 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, at least two letters of recommendation, and official results of the verbal, quantitative, and analytical portions of the GRE.

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 550 (paper-based) or 213 on the computer-based TOEFL, and also must submit a score on the Test of Written English (TWE). Applicants to the Department of Biomedical 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 not more than 6 credits are special topics courses. The formal Plan of Study may be revised upon approval of the Advisory Committee.

• Successfully complete the appropriate department’s nonthesis option requirements.

Master of Science in Chemical Engineering

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:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>4200:200</td>
<td>Material and Energy Balance</td>
<td>4</td>
</tr>
<tr>
<td>4200:225</td>
<td>Equilibrium Thermodynamics</td>
<td>4</td>
</tr>
<tr>
<td>4200:321</td>
<td>Transport Phenomena</td>
<td>3</td>
</tr>
<tr>
<td>4200:330</td>
<td>Reaction Engineering</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>14</td>
</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
<th>Degree</th>
<th>Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>M.D.</td>
<td>Principles of Chemistry I and II</td>
</tr>
<tr>
<td>M.D.</td>
<td>Organic Chemistry I and II</td>
</tr>
<tr>
<td>M.D.</td>
<td>Principles of Biology I and II</td>
</tr>
<tr>
<td>M.D., Ph.D.</td>
<td>Classical Physics I and II</td>
</tr>
<tr>
<td>Ph.D.</td>
<td>Statics</td>
</tr>
<tr>
<td>Ph.D.</td>
<td>Dynamics</td>
</tr>
<tr>
<td>Ph.D.</td>
<td>Strength of Materials (or Material Science)</td>
</tr>
<tr>
<td>Ph.D.</td>
<td>Basic Electrical Engineering (or Circuits I &amp; II)</td>
</tr>
<tr>
<td>Ph.D.</td>
<td>Calculus I, II, III, and Differential Equations</td>
</tr>
</tbody>
</table>
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**

- 4200:600 Transport Phenomena 3
- 4200:605 Chemical Reaction Engineering 3
- 4200:610 Classical Thermodynamics 3
- 4200:617 Chemical Engineering Electives* 6
- Approved Electives** 6
- Approved Mathematics 3
- Master’s Thesis 6
- Total 36

**Nonthesis Option**

- 4200:600 Transport Phenomena 3
- 4200:605 Chemical Reaction Engineering 3
- 4200:610 Classical Thermodynamics 3
- 4200:697 Chemical Engineering Report 3
- Chemical Engineering Electives* 6
- Approved Electives** 15
- Approved Mathematics 3
- Total 37

*NChemical 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

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

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.

- 4300:306 Theory of Structures 3
- 4300:310 Soil Mechanics 3
- 4300:315 Fluid Mechanics 3
- 4300:323 Water Supply and Wastewater Disposal 4
- 4300:341 Hydraulics 3
- 4300:361 Transportation Engineering 3
- 4300:401 Steel Design 3
- 4300:403 Reinforced Concrete Design 3
- Total 25

Areas of study in the department include structural mechanics, geotechnical, hydraulic, transportation, and environmental engineering.

**Thesis Option**

- Civil Engineering Courses 15
- Approved Mathematics or Science 3
- Approved Electives 6
- Master’s Thesis 6
- Total 30

**Nonthesis Option**

- Civil Engineering Courses 15
- Approved Mathematics or Science 3
- Approved Electives 12
- Engineering Report 2
- Total 32

**Master of Science in Electrical Engineering**

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 3
- 4400:384 Energy Conversion I 3
- 4400:386 Energy Conversion Lab 2
- 4400:446 Analog Communications 3
- Approved Mathematics or Science 3
- Approved Electives 9
- Master’s Thesis 6
- Total 30

Areas of study in the department include computer engineering, control system engineering, power system engineering, electromagnetics, and related areas.

**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 9
- 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.

*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.

Master of Science in Mechanical Engineering

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.

- 4600:300 Thermodynamics I 4
- 4600:301 Thermodynamics II 3
- 4600:310 Fluid Mechanics 3
- 4600:315 Heat Transfer 3
- 4600:336 Analysis of Mechanical Components 3
- 4600:340 Systems Dynamics and Response 3
- 4600:380 Mechanical Metallurgy 2
- 4600:444 Fundamentals of Mechanical Vibrations 3
- 4600:441 Control System Design 3
- Total 27

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 12
- Engineering Report 2
- Total 32

**Master of Science in Engineering**

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.

**Admissions**

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 3
- Master’s Thesis 6
- Total 30
The thesis must be successfully (no “fail” votes) defended before the Advisory Committee.

**Nonthesis Option**

<table>
<thead>
<tr>
<th>Engineering Courses</th>
<th>18</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approved Mathematics or Science</td>
<td>3</td>
</tr>
<tr>
<td>Approved Electives</td>
<td>9</td>
</tr>
<tr>
<td>Engineering Report</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>32</td>
</tr>
</tbody>
</table>

The engineering report must receive the approval of the Advisory Committee.

**Biomedical Engineering Specialization**

| 4800:600 | Biomedical Instrumentation | 4 |
| 4800:611 | Biometry | 3 |
| 300:695 | Physiology for Engineers and Lab | 5 |
| Approved Electives | 15 |
| Master’s Thesis | 6 |
| Total | 33 |

The thesis must be successfully (no “fail” votes) defended before the Advisory Committee.

**Polymer Engineering Specialization**

| Polymer Engineering Core | 12 |
| Polymer Engineering Electives | 11 |
| Approved Engineering and Science Elective | 3 |
| Thesis | 6 |
| Total | 32 |

The thesis must be successfully (no “fail” votes) defended before the Advisory Committee.

*The program is limited to not more than three 500-level courses in engineering. Not more than two of the 500-level courses can be applied to the 15 credits of mechanical engineering coursework.

**The specific courses for the Polymer Engineering Core Courses, Polymer Engineering electives, and Approved Engineering and Science Courses are listed under the College of Polymer Science and Polymer Engineering.

**Engineering Management Specialization**

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.

| Engineering Courses | 21 |
| Management Courses | 15 |
| Engineering Management Report | 2 |
| Total | 38 |

**Required Courses (3 credit hours each)**

| 4100:697 | Engineering Management Report¹ | 3 |
| 6200:601 | Financial Accounting² | 3 |
| 6400:602 | Managerial Finance³ | 4 |
| 6500:600 | Management and Organizational Behavior³ | 3 |
| 6600:600 | Marketing Concepts² | 3 |
| Elective | | |

Choose three credits of 600 level College of Business Administration courses.

¹Engineering courses can be taken from any engineering department with approval of engineering advisor.

²The Engineering Management Report must be approved by the advisor and Advisory Committee. One member of the committee shall be from the College of Business Administration.

³More advanced graduate business courses shall be required of students who have completed similar undergraduate courses. This determination shall be made by the Assistant Dean and Director of Graduate Programs, College of Business Administration.

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 session may count as one semester, provided that the candidate is enrolled for a maximum of 10 consecutive weeks of full-time study and for a minimum of six semester hours per five-week session.

Selecting a Dissertation Chair

The candidate’s dissertation chair must be from the Department of Curricular and Instructional Studies.
Instructional Studies and have Category II graduate faculty status. If the candidate desires a co-chair for the dissertation, the co-chair may be from a University of Akron department or college other than Curricular and Instructional Studies and must also have Category II graduate faculty status.

**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.

**Doctor of Philosophy Degree in the Department of Curricular and Instructional Studies**

The Doctor of Philosophy 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. Common core foundational studies
2. A specialization
3. Professional education in Curricular and Instructional Studies
4. Other contributing disciplines (cognate)

With this philosophy in mind, the program provides study in a common core of study, a selected discipline, professional education, and cognate fields. Listed below and of particular significance are the two sequential steps necessary in the program:

1. **Written and Oral Comprehensive**
   
   These Comprehensive Examinations should be taken after the completion of the first two-thirds of work and prior to the completion of three-fourths of the program with the approval of the student's advisor. Written comprehensive examinations are offered each semester.

2. **Dissertation**

   The dissertation proposal must receive approval of the Dissertation Committee prior to advancement to candidacy.

**Admission Requirements**

Admission to the Curricular and Instructional Studies Ph.D. program is limited to a select number of students each year. 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 3.50 GPA on a scale of 4.0).
3. Demonstration of doctoral level writing ability as evidenced by a Miller Analogies Test score of 399 or higher, (or a 550 on the verbal portion of the GRE), and a prescribed and evaluated writing sample.
4. 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 test date.
5. Completion of application to Graduate School that includes:
   a. Current vita
   b. Three letters of academic reference
   c. Official transcripts
   d. Agreement to Advise form
   e. Letter of Intent/Statement of Purpose

   **Conditions for Admission:**
   1. All doctoral applicants must take the Miller Analogies Test or Graduate Record Exam. Scores more than five years old will not be accepted for evaluation of the doctoral application.
   2. 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.
   3. The Letter of Intent/Statement of Purpose should indicate career goals and research interest and must be compatible with departmental resources and goals.
   4. Candidates are responsible for obtaining faculty sponsors to complete the Agreement to Advise form.
   5. Applicants who score less than 399 on the MAT or 550 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.
   6. In certain cases an applicant may be required to take course work on the graduate level at The University of Akron before a final decision on his/her application for admission is made.
   7. Candidates must have at least three years of teaching experience. (This does not apply to postsecondary/technical adult education area candidates.)

**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 advanced statistical/research methods courses approved by student’s advisor.

c. **Professional Publication**

   The preparation 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 writing. 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**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>5000:600</td>
<td>Philosophy of Education (or 602 or 604)</td>
<td>3</td>
</tr>
<tr>
<td>5000:620</td>
<td>Psychology of Instruction and Teaching (or 624 or 5400:500)</td>
<td>3</td>
</tr>
<tr>
<td>5000:701</td>
<td>History of Education in American Society (or 703)</td>
<td>3</td>
</tr>
<tr>
<td>5000:705</td>
<td>Seminar in Social/Philosophical Foundations of Education</td>
<td>3</td>
</tr>
<tr>
<td>5000:723</td>
<td>Teaching Behavior and Instruction (or 721 or 715)</td>
<td>3</td>
</tr>
<tr>
<td>5000:640</td>
<td>Techniques of Research</td>
<td>3</td>
</tr>
<tr>
<td>5000:360</td>
<td>Research Design</td>
<td>3</td>
</tr>
<tr>
<td>5000:341</td>
<td>Data Collection Methods</td>
<td>3</td>
</tr>
<tr>
<td>5000:342</td>
<td>Statistics in Education</td>
<td>3</td>
</tr>
<tr>
<td>5000:744</td>
<td>Qualitative Methods I</td>
<td>3</td>
</tr>
<tr>
<td>5000:745</td>
<td>Qualitative Methods II</td>
<td>3</td>
</tr>
<tr>
<td>5000:801</td>
<td>Seminar: Exploratory/Qualitative</td>
<td>3</td>
</tr>
<tr>
<td>5000:801</td>
<td>Seminar: Empirical or Seminar II: Ethnographic/Historical or Case Study Research or Legal Research and Writing or another advisor-approved course</td>
<td>3</td>
</tr>
</tbody>
</table>

**Curricular and Instructional Studies Core (15)**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>5500:800</td>
<td>Professional Doctoral Seminar in Curricular and Instructional Studies</td>
<td>3</td>
</tr>
<tr>
<td>5500:880</td>
<td>Seminar in Curricular and Instructional Studies</td>
<td>3</td>
</tr>
<tr>
<td>5500:600</td>
<td>Concepts of Curriculum &amp; Instruction (or 5400:xxx)</td>
<td>3</td>
</tr>
<tr>
<td>5500:605</td>
<td>Seminar in Trends and Issues in Curriculum &amp; Instruction (or 5400:xxx)</td>
<td>3</td>
</tr>
</tbody>
</table>

Three additional hours will be selected in the area of Curricular and Instructional Studies with advisor approval.

**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

The Collaborative Program in Counseling Psychology allows the student 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 in seminars and colloquia. 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 assessment, diversity issues in counseling psychology, supervision, vocational psychology, professional issues and ethics, statistics, and research design. Research and publishing are strongly encouraged. Graduate students typically seek teaching, 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 1100 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 by telephone.

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

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>5100:648</td>
<td>Individual and Family Life-span Development</td>
<td>3</td>
</tr>
<tr>
<td>5100:742</td>
<td>Statistics in Education</td>
<td>3</td>
</tr>
<tr>
<td>5100:743</td>
<td>Advanced Educational Statistics</td>
<td>3</td>
</tr>
<tr>
<td>5500:651</td>
<td>Techniques of Counseling</td>
<td>3</td>
</tr>
<tr>
<td>5500:675-676</td>
<td>Practicum in Counseling III</td>
<td>18</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>3750:787</td>
<td>Advanced Psychological Test and Measures</td>
<td>2</td>
</tr>
<tr>
<td>5600:702</td>
<td>Advanced Counseling Practicum I</td>
<td>4</td>
</tr>
<tr>
<td>5600:702</td>
<td>Advanced Counseling Practicum II</td>
<td>4</td>
</tr>
<tr>
<td>5600:703</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>
</tbody>
</table>

Minimum Total Credit Hours Required: 114

Students register for dual listed courses (3750/5600) 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

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, and (b) Marriage and Family Counseling/Therapy. Students in each track are expected to attain advanced level competencies in the core areas of their track, research, and supervision. Practicum and internship experiences are required. The cognate/elective option allows students some flexibility in designing a program that is consistent with 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 MFT track can meet the requirements for licensure in Ohio as a Professional Clinical Counselor, Marriage and Family Therapist, Clinical member of AAAMFT, 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 (COAEP). In addition, the Marriage and Family Counseling/Therapy program is accredited by the Commission on Accreditation of Marriage and Family Therapy Education (COAMFTE).

Ph.D. in Counselor Education and Supervision Requirements:

Course Requirements:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>5100:705</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>5100:362</td>
<td>Statistics in Education</td>
<td>3</td>
</tr>
<tr>
<td>5100:743</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>
</tbody>
</table>

(The following may not be taken until all entry-level requirements are completed)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>5600:702</td>
<td>Advanced Counseling Practicum</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>(3 semesters, 4 credits each semester)</td>
<td></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</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></td>
<td>(minimum of 3 credits taken outside of the College and dependent upon specific track)</td>
<td></td>
</tr>
<tr>
<td>5600:785</td>
<td>Doctoral Internship</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>(minimum of 2 semesters/800 clock hours)</td>
<td></td>
</tr>
<tr>
<td>5600:785</td>
<td>Internship in Marriage and Family</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>(must graduate with 1000 program clinical hours, see program guidelines for details)</td>
<td></td>
</tr>
<tr>
<td>5600:899</td>
<td>Doctoral Dissertation (minimum)</td>
<td>15</td>
</tr>
</tbody>
</table>

In addition students enrolled in the Marriage and Family Doctoral Track must complete the following requirements:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>5600:720</td>
<td>Topical Seminar: Topical Issues in Marriage and Family Therapy</td>
<td>3</td>
</tr>
<tr>
<td>5600:667</td>
<td>Marital Therapy</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Minimum Total Credit Hours Required</td>
<td>120</td>
</tr>
</tbody>
</table>

Minimum Total Credit Hours Required: 120
**DOCTORATE IN EDUCATIONAL LEADERSHIP**

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

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
- 5100:703 History and Philosophy of Higher Education 3
- 5100:706 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 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.

- 5100:341 Research Design 3
- 5100:342 Data Collection Methods 3
- 5100:344 Statistics in Education 3
- 5100:345 Advanced Educational Statistics 3
- 5100:801 Research Seminar: Exploratory/Qualitative 3
- 5100:801 Research Seminar: Ethnographic/Historical 3
- 5100:801 Research Seminar: Case Study Research 3
- 5100:801 Research Seminar: Legal Research and Writing 3
- 5100:801 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
- 5170:765 Seminar: Urban Educational Issues 3
- 5170:266 Politics of Education 3
- 5170:710 Advanced Educational Law 3
- 5170:722 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 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

*Students in some counseling programs may choose other options – see advisor.

**Counseling Admissions**

Admissions to the master’s programs will be twice a year (application deadline of March 15 for summer and fall semesters and October 1 for spring semester)

The Council for Accreditation of Counseling and Related Educational Programs (CACREP), a specialized accrediting body recognized by the Commission on Recognition of Postsecondary Accreditation (CORPA), has conferred accreditation on the Community, Marriage and Family, and School Counseling programs.

In addition, the Marriage and Family Counseling-Therapy program is accredited by the Commission on Accreditation for Marriage and Family Therapy Education of the American Associate of Marriage and Family Therapy.

**Classroom Guidance for Teachers**

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 (Select one course from each area)
  - Behavioral Foundations
    - 5100:620 Psychology of Instruction for Teaching and Learning 3
    - 5100:624 Seminar: Educational Psychology 3
  - Humanistic Foundations
    - 5100:600 Philosophies of Education 3
    - 5100:604 Topical Seminar in the Cultural Foundations of Education 3
  - Multicultural Counseling
    - 5600/5100:648 Individual and Family Development Across the Lifespan 3
    - 5100:600 Philosophies of Education 3
  - Research
    - 5100:840 Techniques of Research 3

**Minimum Foundation Hours Required**

3
Community Counseling

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 licensing elsewhere in this handbook.) Any changes in the agreed upon program must be approved by the student’s advisor.

- **Foundations Courses**
  - 5600:648 Individual and Family Development
  - 5600:648 Multicultural Counseling
  - 5100:640 Techniques of Research
  - Subtotal: 9

- **Required Counseling Core Courses**
  - 5600:660 Seminar in Counseling
  - 5600:653 Community Counseling
  - 5600:643 Counseling Skills & Philosophy
  - 5600:647 Career Development and Counseling Across the Lifespan
  - 5600:645 Tests and Appraisal in Counseling (prerequisite: 5100:640)
  - 5600:651 Techniques of Counseling
  - 5600:653 Group Counseling (prerequisites 5600:651 and 5600:643)
  - 5600:675 Practicum in Counseling**† (prerequisite 5600:653)
  - 5600:685 Internship in Counseling† (prerequisite 5600:675)
  - Subtotal: 32

- **Specialized Studies**
  - 5600:620 Issues in Sexuality for Counselors
  - 5610:632 Addiction Counseling I: Theory and Assessment
  - Subtotal: 3

- **Clinical Counseling Component**
  - 5600:662 Personality and Abnormal Behavior
  - 5600:714 Objective Personality Evaluation
  - 5600:664 DSM-V
  - 5600:666 Treatment in Counseling
  - Also, choose one of the following three courses:
    - 5600:621 Counseling Youth at Risk
    - 5600:622 Play Therapy
    - 5600:655 Marriage and Family Therapy: Theory and Techniques
    - 5600:660 Counseling Children
    - 5600:734 Addiction Counseling II: Treatment Planning and Intervention Strategies
  - Minimum Total Hours Required for Program: 60

Minimum Foundation Hours Required: 9

- **Required Departmental Courses**
  - 5600:631 Elementary/Secondary School Counseling
  - 5600:647 Career Development and Counseling Across the Lifespan
  - 5600:645 Tests and Appraisal in Counseling
  - 5600:662 Counseling Skills for Teachers
  - 5600:663 Developmental Guidance and Emotional Education
  - 5600:696 Field Experience (MUST be taken before concurrently with 663)
  - 5610:540 Developmental Characteristics of Exceptional Individuals
  - 5610:604 Collaboration and Consultation Skills for Special Educators
  - Minimum Department Hours Required: 20

Community Counseling

- **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):
    - Middle School Education
    - Early Childhood Education
    - School and Community Relations
    - Curriculum and Instruction
    - Physical Fitness and Well-Being
    - Special Education
    - Computers in Education
    - Family Ecology
    - Communicative Disorders
    - Outdoor Education
  - Total Area of Concentration Hours Required: 6
  - Minimum Semester Hours Required for Graduation: 35

- **Area I: Theoretical Foundations**
  - 5600:663 Developmental Guidance and Emotional Education
  - 5600:695 Field Experience: Master’s
  - One of the following: 5600:660, 5600:640, or 5600:622 (3 credit hours)
  - One of the following: 5610:567 or 5610:559 (3 credit hours)

- **Area II: Clinical Practice**
  - 5600:643 Multicultural Counseling (Educ Foundations)
  - 5600:646 Multicultural Counseling
  - 5600:648 Individual and Family Development Across the Life Span
  - 5600:650 Organization & Administration of Guidance Services
  - 5600:651 Techniques of Counseling
  - 5600:653 Group Counseling (prerequisite: 5600:651)
  - 5600:655 Marriage and Family Therapy: Theories and Techniques
  - 5600:659 Organization & Administration of Guidance Services
  - 5600:660 Seminar in Counseling
  - 5600:664 DSM-IV
  - 5600:695 Field Experience: Master’s
  - One of the following: 5600:660, 5600:640, or 5600:622 (3 credit hours)
  - One of the following: 5610:567 or 5610:559 (3 credit hours)

- **Foundation Courses (select one course from each area)**
  - Behavioral Foundations
    - 5600:648 Individual and Family Development Across the Life Span
  - Humanistic Foundations
    - 5600:646 Multicultural Counseling
  - Research
    - 5100:640 Techniques of Research
  - Minimum Foundation Hours Required: 9

- **Required Counseling Department Courses**
  - 5600:600 Seminar in Counseling*
  - 5600:631 Elementary/Secondary School Counseling
  - 5600:659 Organization & Administration of Guidance Services
  - 5600:664 DSM-IV
  - 5600:643 Multicultural Counseling (Educ Foundations)
  - 5600:646 Multicultural Counseling
  - 5600:648 Individual and Family Development Across the Life Span
  - 5600:651 Techniques of Counseling
  - 5600:653 Group Counseling (prerequisites 5600:651 and 5600:643)
  - 5600:675 Practicum in Counseling**† (prerequisites 5600:651, 645, 646, 647, 653, 659)
  - 5600:685 Internship in Counseling† (prerequisite 5600:675)
  - Subtotal: 32
  - Minimum Department Hours Required: 35

- **Specialized Studies (both required)**
  - 5610:540 Developmental Characteristics of Exceptional Individuals
  - 5600:621 Counseling Youth At Risk
  - Subtotal: 6
  - Total Semester 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.
‡Practicum and Internship require closed class permission. You must request one from the Department office prior to registering.

Marriage and Family Counseling/Therapy

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.

- **Area I:**
  - Theoretical Foundations
    - 5600:655 Marriage and Family Therapy: Theories and Techniques
  - Systems Theory in Family Therapy

- **Area II:**
  - Clinical Practice
    - 5600:667 Marital Therapy (prerequisites: 5600:655 and 5600:669)
    - 5600:646 Multicultural Counseling (Educ Foundations)
    - 5600:651 Techniques of Counseling (register for MFC/T section)
      (prerequisite: 5600:655, corequisite: 5600:669; prerequisite or corequisite: 5600:643)
    - 5600:653 Group Counseling (prerequisite: 5600:651)
    - 5600:664 DSM-V
A minimum of 500 client contact hours must be completed to graduate from the program. Students must receive a pass grade on the Master's Comprehensive Examination. A maximum of six credits of workshop can be used to satisfy degree requirements.

**School Psychologist**

(admissions temporarily suspended)

- **College requirements:**
  - 5100:640 Techniques of Research 3
  - 5620:698 Research Project 2
    or
  - 5620:699 Master's Thesis 4-6

- **Departmental requirements:**
  - 5600:643 Counseling: Theory and Philosophy 3

- **Program requirements:**
  - 3750:530 Psychological Disorders of Childhood 4
  - 3750:700 Survey of Projective Techniques 4
  - 3750:712 Principles and Practice of Individual Intelligence Testing 4
  - 5100:604 Topical Seminar in the Cultural Foundations of Education 3
  - 5100:624 Seminar in Human Learning 3
  - 5100:741 Statistics in Education 3
  - 5620:600 Seminar: Role and Function of School Psychology 3
  - 5620:602 Behavioral Assessment 3
  - 5620:610 Educational Diagnosis for the School Psychologist 4

**Sixth-Year School Psychology Master's Degree and Certification Program**

- **Foundations requirements:**
  - 5100:604 Topical Seminar in the Cultural Foundations of Education 3
  - 5100:624 Seminar: Educational Psychology 3
  - 5100:640 Techniques of Research 3
  - 5100:741 Statistics in Education 3

- **Professional requirements:**
  - 3750:700 Survey of Projective Techniques 4
  - 3750:530 Psychological Disorders of Childhood 4
  - 3750:712 Principles and Practice of Individual Intelligence Testing 4
  - 5600:643 Counseling: Theory and Philosophy 3
  - 5620:600 Seminar: Role and Function of School Psychology 3
  - 5620:602 Behavioral Assessment 3
  - 5620:610 Educational Diagnosis for the School Psychologist 4
  - 5620:698 Master's Problem 2-4
    or
  - 5620:699 Master's Thesis 4-6

The student completing the master's program who desires Ohio certification must additionally complete the following listed certification/professional course requirements including the full academic year internship experiences:

- 3750:500 Personality 4**
- 5610:543 Developmental Characteristics of Learning Disabled Individuals 3
  or
- 6500:626 Reading Diagnosis for School Psychologists and Support Personnel 3
- 5610:540 Developmental Characteristics of Exceptional Individuals 3**
  or
- 3750:520 Abnormal Psychology 3**

**Curricular and Instructional Studies**

**Elementary Education (M.A.)**

This program leading to a Master of Arts in Elementary Education is for elementary school teachers. Students complete foundation courses in education and in curriculum and instruction, and an area of concentration such as reading, multicultural, middle, or elementary education.

- **Educational Foundations – 9 credits**
  - 5100:600 Philosophies of Education 3
  - 5100:624 Seminar in Educational Psychology 3
  - 5100:640 Techniques of Research 3

- **Curricular and Instructional – 6 credits**
  - 5500:600 Concepts of Curriculum and Instruction 3
  - 5500:605 Seminar in Trends and Issues in Curriculum and Instruction 3
  or
  - 5500:6xx a course that cuts across curriculum and instruction (as approved by advisor)

- **Area of Concentration – 15 credits (within curriculum and instruction as approved by the advisor)**
- **Master’s Project/Thesis Options - 6 credits**
  - Option 1: 5500:690 Master’s Research 3
    or
  - 5500:760 Action Research 3
  - Option 2: 5500:696 Master’s Project (with advisor’s permission) 6
  - Option 3: 5500:699 Master’s Thesis (with advisor’s permission) 6

- A comprehensive exam is required
- Minimum credit hours required: 36

**Elementary Education with Literacy Option (M.A.)**

This program leading to a Master of Arts in Elementary Education is for elementary school teachers. Students complete foundation courses in education and in curriculum and instruction, and an area of concentration in literacy education.

- **Educational Foundations – 9 credits**
  - 5100:600 Philosophies of Education 3
  - 5100:624 Seminar in Educational Psychology 3
  - 5100:640 Techniques of Research 3

- **Curricular and Instructional – 6 credits**
  - 5500:600 Concepts of Curriculum and Instruction 3
  - 5500:625 Contemporary Issues in Literacy Instruction and Phonics 3

- **Special cohort master’s programs may be created to reflect the immediate needs of a cohort group. Such programs will encompass a 30-36 hour requirement.**

**Certification.”

**Required as part of Special Education master’s.**

*Program admission is competitive, based upon state internship allocations. Selection procedures and criteria are available upon request by calling the school psychology program director in the Department of Counseling and Special Education. For recommendation for certification as a school psychologist in Ohio, the master’s student must complete the program prescribed under “Certification.”

**
Area of Concentration/Reading – 15 credits*:

5500:622 Children's Literature in the Curriculum 3
or 5500:627 Special Topics in Curr & Instr Studies: Teaching Young Adult Literature 3
5500:522 Content Area Literacy 3
5500:630 Assessment of Reading Difficulties 3
5500:524 Teaching Reading to Culturally Diverse Learners 3
5500:627 Special Topics in Curriculum and Instructional Studies 3

• Master's Project/Thesis Options - 6 credits

Option 1:
5500:690 Master's Research 3
5500:760 Action Research 3

Option 2:
5500:696 Master's Project (with advisor’s permission) 6

Option 3:
5500:699 Master's Thesis (with advisor’s permission) 6
Minimum credit hours required: 36-42

• Students completing the Master of Arts degree are required to complete the Master’s Comprehensive Examination.

*Reading Endorsement requires 18 credit hours in reading and passage of Praxis II: Introduction to the Teaching of Reading (10200).

Elementary Education with Licensure (M.S.)
(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
or 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
5100:695 Field Experience: Master's (Section 001) 1

• Curricular and Instructional Studies – 11 credits:
5500:617 Licensure Seminar in Curriculum and Instructional Studies 3
5500:630 Field Experience (Section 011) 1
5500:657 Instructional Technology Applications 3
5500:618 Advanced Instructional Techniques 3
5500:695 Field Experience (Section 021) 1

• Field Experience (Student Teaching) – 11 credits:
5500:696 Field Experience: Master’s (Section 005) 5
5500:696 Field Experience: Master’s (Section 031) 1
5500:695 Field Experience: Master’s (Section 001) 5

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.)
This program leading to a Master of Arts in Secondary Education is for secondary school teachers. Students complete foundation courses in education and in curriculum and instruction, and an area of concentration such as English, mathematics, or secondary education.

• 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 – 6 credits
5500:600 Concepts of Curriculum and Instruction 3
5500:605 Seminar in Trends and Issues in Curriculum and Instruction 3
or 5500:6xx course that cuts across curriculum and instruction (as approved by advisor)

• Area of Concentration – 15 credits (within curriculum and instruction as approved by the advisor)

• Master's Project/Thesis Options - 6 credits

Option 1:
5500:690 Master's Research 3
5500:760 Action Research 3

Option 2:
5500:696 Master’s Project (with advisor’s permission) 6

Option 3:
5500:699 Master’s Thesis (with advisor’s permission) 6

Minimum credit hours required: 36

• A comprehensive exam is required.

Secondary Education with Literacy Option (M.A.)
This program leading to a Master of Arts in Secondary Education is for secondary school teachers. Students complete foundation courses in education and in curriculum and instruction, and an area of concentration in literacy education.

• 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*:
5500:622 Children's Literature in the Curriculum 3
or 5500:627 Special Topics in Curr & Instr Studies: Teaching Young Adult Literature 3
5500:522 Content Area Literacy 3
5500:630 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
5500:620 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
or 5500:690 Master’s Project 3
or 5500:699 Master’s Thesis 6
Minimum credit hours required: 36

• Students completing the Master of Arts degree are required to complete the Master’s Comprehensive Examination.

*Reading Endorsement requires 18 credit hours in reading and passage of Praxis II: Introduction to the Teaching of Reading (10200).

Special Education (M.A.)
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.

• 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
5610:698 Master’s Problem 3

A comprehensive examination is required.

• Option I: Master’s in Special Education (6 credits)
5610:601 Seminar: 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
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
- Life Science and Physics
- 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

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.

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 2.75 grade point average

College of Education (which must be met by all students):
- Completed teacher education program application
- Evidence of competency in reading comprehension, writing, and mathematics
- 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) 972-6970 or visit the following for more information: http://www.uakron.edu/colleges/educ/COE/admission.php

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 OhIOfNTASC (Interstate New Teacher Assessment and Support Consortium) Standards, the Ohio Standards for the Teaching Profession, Specialized Professional Association Standards, and the Praxis Pathwise Domains. Advanced Programs for practicing teachers are aligned with the Ohio Standards for the Teaching Profession. 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 3
  5100.620 Psychology of Instruction for Teaching and Learning 3
  5100.642 Topical Seminar in Measurement and Evaluation 3
  5100.695 Field Experience: Master’s (taken in conjunction with 5100.620) 1

Option in Adolescent to Young Adult (AYA) Education (grades 7-12): Integrated Social Studies Licensure

- Educational Foundations Courses (10 credits)
- Curricular and Instructional Studies (19 credits):
  5500.575 Instructional Technology Applications 3
  5500.617 Licensure Seminar in Curricular and Instructional Studies (a) 3
  5500.520 Advanced Instructional Techniques (taken in conjunction with 5500.693-021) (b) 3
  5500.693 Field Experience: Master’s with Licensure (section 021) 1
  5500.619 Instructional and Management Practices (taken in conjunction with 5500.693.011) 3
  5500.693 Field Experience: Master’s with Licensure (section 011) 1
  5500.629 Reading Programs in Secondary Schools 3
  5500.xxx Elective in curriculum or teaching practices approved by advisor 2

- Area of Concentration (9):
  Select 9 credits at 500-level or above.
  5500.694 Field Experience: Classroom Instruction (section 006) (c) 8
  5500.692 Field Experience: Colloquium 1

- A comprehensive examination is required.

Minimum credits required for degree: 47

Option in Adolescent to Young Adult (AYA) Education (grades 7-12): Integrated Language Arts Licensure

- Educational Foundations Courses (10 credits)
- Curricular and Instructional Studies (19 credits):
  5500.575 Instructional Technology Applications 3
  5500.617 Licensure Seminar in Curricular and Instructional Studies (a) 3
  5500.520 Advanced Instructional Techniques (taken in conjunction with 5500.693-021) (b) 3
  5500.693 Field Experience: Master’s with Licensure (section 021) 1
  5500.619 Instructional and Management Practices (taken in conjunction with 5500.693.011) 3
  5500.693 Field Experience: Master’s with Licensure (section 011) 1
  5500.629 Reading Programs in Secondary Schools 3
  5500.xxx Elective in curriculum or teaching practices approved by advisor 2

- Area of Concentration (9):
  Select 9 credits at 500-level or above.
  5500.694 Field Experience: Classroom Instruction (section 006) (c) 8
  5500.692 Field Experience: Colloquium (section 031) 1

- A comprehensive examination is required.

Minimum credits required for degree: 47

Option in Adolescent to Young Adult (AYA) Education (grades 7-12): Integrated Mathematics Licensure

- Educational Foundations Courses (10 credits)
- Curricular and Instructional Studies (19 credits):
  5500.575 Instructional Technology Applications 3
  5500.617 Licensure Seminar in Curricular and Instructional Studies (a) 3
  5500.520 Advanced Instructional Techniques (taken in conjunction with 5500.693-021) (b) 3
  5500.693 Field Experience: Master’s with Licensure (section 021) 1
  5500.619 Instructional and Management Practices (taken in conjunction with 5500.693.011) 3
  5500.693 Field Experience: Master’s with Licensure (section 011) 1
  5500.629 Reading Programs in Secondary Schools 3
  5500.xxx Elective in curriculum or teaching practices approved by advisor 2
A comprehensive examination is required.
Minimum credits required for degree: 47

Option in Adolescent to Young Adult (AYA) Education (grades 7-12): Life Sciences Licensure

- Educational Foundations Courses (10 credits)
  5500:575 Instructional Technology Applications 3
  5500:617 Licensure Seminar in Curricular and Instructional Studies (a) 3
  5500:520 Advanced Instructional Techniques (taken in conjunction with 5500:693-021) b) 3
  5500:693 Field Experience: Master’s with Licensure (section 021) 1
  5500:619 Instructional and Management Practices (taken in conjunction with 5500:693-011) 3
  5500:692 Field Experience: Colloquium (section 031) 1
- A comprehensive examination is required.
Minimum credits required for degree: 47

Option in Adolescent to Young Adult (AYA) Education (grades 7-12): Life and Earth Sciences Licensure

- Educational Foundations Courses (10 credits)
  5500:575 Instructional Technology Applications 3
  5500:617 Licensure Seminar in Curricular and Instructional Studies (a) 3
  5500:520 Advanced Instructional Techniques (taken in conjunction with 5500:693-021) b) 3
  5500:693 Field Experience: Master’s with Licensure (section 021) 1
  5500:619 Instructional and Management Practices (taken in conjunction with 5500:693-011) 3
  5500:692 Field Experience: Colloquium (section 031) 1
- A comprehensive examination is required.
Minimum credits required for degree: 47

Option in Adolescent to Young Adult (AYA) Education (grades 7-12): Life Sciences and Chemistry Licensure

- Educational Foundations Courses (10 credits)
  5500:575 Instructional Technology Applications 3
  5500:617 Licensure Seminar in Curricular and Instructional Studies (a) 3
  5500:520 Advanced Instructional Techniques (taken in conjunction with 5500:693-021) b) 3
  5500:693 Field Experience: Master’s with Licensure (section 021) 1
  5500:619 Instructional and Management Practices (taken in conjunction with 5500:693-011) 3
  5500:692 Field Experience: Colloquium (section 031) 1
- A comprehensive examination is required.
Minimum credits required for degree: 47

Option in Adolescent to Young Adult (AYA) Education (grades 7-12): Life Sciences and Physics Licensure

- Educational Foundations Courses (10 credits)
  5500:575 Instructional Technology Applications 3
  5500:617 Licensure Seminar in Curricular and Instructional Studies (a) 3
  5500:520 Advanced Instructional Techniques (taken in conjunction with 5500:693-021) b) 3
  5500:693 Field Experience: Master’s with Licensure (section 021) 1
  5500:619 Instructional and Management Practices (taken in conjunction with 5500:693-011) 3
  5500:693 Field Experience: Master’s with Licensure (section 011) 1
  5500:629 Reading Programs in Secondary Schools 3
  5500:694 Field Experience: Classroom Instruction (section 006) (c) 8
  5500:692 Field Experience: Colloquium (section 031) 1
- A comprehensive examination is required.
Minimum credits required for degree: 47

Option in Adolescent to Young Adult (AYA) Education (grades 7-12): Physics Licensure

- Educational Foundations Courses (10 credits)
  5500:575 Instructional Technology Applications 3
  5500:617 Licensure Seminar in Curricular and Instructional Studies (a) 3
  5500:520 Advanced Instructional Techniques (taken in conjunction with 5500:693-021) b) 3
  5500:693 Field Experience: Master’s with Licensure (section 021) 1
  5500:693 Field Experience: Master’s with Licensure (section 011) 1
  5500:629 Reading Programs in Secondary Schools 3
  5500:694 Field Experience: Classroom Instruction (section 006) (c) 8
  5500:692 Field Experience: Colloquium (section 031) 1
- A comprehensive examination is required.
Minimum credits required for degree: 47

Option in Adolescent to Young Adult (AYA) Education (grades 7-12): Chemistry Licensure

- Educational Foundations Courses (10 credits)
  5500:575 Instructional Technology Applications 3
  5500:617 Licensure Seminar in Curricular and Instructional Studies (a) 3
  5500:520 Advanced Instructional Techniques (taken in conjunction with 5500:693-021) b) 3
  5500:693 Field Experience: Master’s with Licensure (section 021) 1
  5500:693 Field Experience: Master’s with Licensure (section 011) 1
  5500:629 Reading Programs in Secondary Schools 3
  5500:694 Field Experience: Classroom Instruction (section 006) (c) 8
  5500:692 Field Experience: Colloquium (section 031) 1
- A comprehensive examination is required.
Minimum credits required for degree: 47

Option in Adolescent to Young Adult (AYA) Education (grades 7-12): Physical Science (Chemistry and Physics) Licensure

- Educational Foundations Courses (10 credits)
  5500:575 Instructional Technology Applications 3
  5500:617 Licensure Seminar in Curricular and Instructional Studies (a) 3
- A comprehensive examination is required.
Minimum credits required for degree: 47
Area of Concentration (9): Select 9 credits at 500-level or above.
• Field Experience (Student Teaching) (9 credits):
  5500:694 Field Experience: Classroom Instruction (section 006) (c) 8
  5500:692 Field Experience: Colloquium (section 031) 1
  A comprehensive examination is required.
Minimum credits required for degree: 47

Option in Multi-Age (grades P-12) Education: Foreign Language Spanish Licensure
• Educational Foundations Courses (10 credits)
  5500:575 Instructional Technology Applications 3
  5500:617 Licensure Seminar in Curricular and Instructional Studies (a) 3
  5500:520 Advanced Instructional Techniques - Modern Language (a) 3
  5500:619 Instructional and Management Practices (taken in conjunction with 5500:693-011) 3
  5500:693 Field Experience: Master's with Licensure (section 011) 1
  5500:694 Field Experience: Classroom Instruction (section 011) 1
  5500:692 Field Experience: Colloquium (section 031) 1
  A comprehensive examination is required.
Minimum credits required for degree: 50

Option in Multi-Age (grades P-12) Education: Visual Arts Licensure
• Educational Foundations Courses (10 credits)
  5500:575 Instructional Technology Applications 3
  5500:617 Licensure Seminar in Curricular and Instructional Studies (a) 3
  5500:520 Advanced Instructional Techniques - Modern Language (a) 3
  5500:619 Instructional and Management Practices (taken in conjunction with 5500:693-011) 3
  5500:693 Field Experience: Master's with Licensure (section 011) 1
  5500:694 Field Experience: Classroom Instruction (section 011) 1
  5500:692 Field Experience: Colloquium (section 031) 1
  A comprehensive examination is required.
Minimum credits required for degree: 50

Option in Multi-Age (grades P-12) Education: Foreign Language French Licensure
• Educational Foundations Courses (10 credits)
  5500:617 Instructional Technology Applications 3
  5500:619 Instructional and Management Practices (taken in conjunction with 5500:693-011) 3
  5500:693 Field Experience: Master's with Licensure (section 011) 1
  5500:694 Field Experience: Classroom Instruction (section 011) 1
  5500:692 Field Experience: Colloquium (section 031) 1
  A comprehensive examination is required.
Minimum credits required for degree: 47

Option in Multi-Age (grades P-12) Education: Earth Science Licensure
• Educational Foundations Courses (10 credits)
  5500:575 Instructional Technology Applications 3
  5500:617 Licensure Seminar in Curricular and Instructional Studies (a) 3
  5500:520 Advanced Instructional Techniques - Modern Language (a) 3
  5500:619 Instructional and Management Practices (taken in conjunction with 5500:693-011) 3
  5500:693 Field Experience: Master's with Licensure (section 011) 1
  5500:694 Field Experience: Classroom Instruction (section 011) 1
  5500:692 Field Experience: Colloquium (section 031) 1
  A comprehensive examination is required.
Minimum credits required for degree: 47

Option in Adolescent to Young Adult (AYA) Education (grades 7-12): Earth Science Licensure
• Area of Concentration (9): Select 9 credits at 500-level or above.
• Field Experience (Student Teaching) (9 credits):
  5500:694 Field Experience: Classroom Instruction (section 006) (c) 8
  5500:692 Field Experience: Colloquium (section 031) 1
  A comprehensive examination is required.
Minimum credits required for degree: 47
Option in Career-Technical Education: Family and Consumer Sciences Licensure (Grades 4-12)

Contact Program Coordinator in Family and Consumer Sciences, Shrank Hall South 215

- Educational Foundations Courses (10 credits)
- Curricular and Instructional Studies (19 credits):
  - Instructional Technology Applications 3
  - Licensure Seminar in Curricular and Instructional Studies (a) 3
  - Instructional and Management Practices (taken in conjunction with 5500:693-011) 3
  - Field Experience: Master’s with Licensure (section 011) 1
  - Literacy for Multilenguage Licensure 3
  - Career-Tech FCS Instructional Strategies (taken in conjunction with 5500:693-021) 3
  - Field Experience: Master’s with Licensure (section 021) 1
  - Elective in curriculum or teaching practices approved by advisor 2

- Area of Concentration (9):
  - Select 9 credits with advisor approval
- Field Experience (Student Teaching) (9 credits):
  - Field Experience: Classroom Instruction (section 008) (c) 8
  - Student Teaching Seminar 1
- A comprehensive examination is required. Minimum credits required for degree: 47

Option in Multi-Age (P-12) Education: Drama Licensure

Contact Program Coordinator in Theatre Arts, Guzzetta South 247

- Educational Foundations Courses (10 credits)
- Curricular and Instructional Studies (21 credits):
  - Instructional Technology Applications 3
  - Licensure Seminar in Curricular and Instructional Studies (a) 3
  - Methods of Teaching Elementary Theatre Arts 3
  - Methods of Teaching Secondary Theatre Arts 3
  - Instructional and Management Practices (taken in conjunction with 5500:693-011) 3
  - Field Experience: Master’s with Licensure (section 011) 1
  - Literacy for Multilenguage Licensure 3
  - Elective in curriculum or teaching practices approved by advisor 2

- Area of Concentration (9):
  - Select 9 credits with advisor approval
- Field Experience (Student Teaching) (9 credits):
  - Field Experience: Classroom Instruction (section 006) (c) 8
  - Student Teaching CoLoquium 1
- A comprehensive examination is required. Minimum credits required for degree: 49

Option in Special Education: Mild/Moderate Intervention Specialist Licensure

- Educational Foundations Courses (10 credits)
- Curricular and Instructional Studies (3 credits):
  - Instructional Technology Applications 3

- Area of Concentration (26 credits):
  - Individuals with Exceptionalities: Educational and Societal Issues 3
  - Developmental Characteristics of Mild/Moderate Educational Needs 4
  - Management Strategies 3
  - Collaboration and Consultation 3
  - Assessment in Special Education 3
  - Special Education Programming: Secondary/Transition 3
  - Special Education Programming: Mild/Moderate I 3
  - Special Education Programming: Mild/Moderate II 4

- Field Experience: Student Teaching and Practicum (14 credits) or Master’s Project and Practicum (6 credits):
  - Student Teaching: Special Education 11
  - Practicum or
  - Master’s Project 3

- A comprehensive examination is required. Minimum credits required for degree (d): 42-45

Option in Special Education: Moderate/Intensive Intervention Specialist Licensure

- Educational Foundations Courses (10 credits)
- Curricular and Instructional Studies (3 credits):
  - Instructional Technology Applications 3

- Area of Concentration (27 credits):
  - Individuals with Exceptionalities: Educational and Societal Issues 3
  - Developmental Characteristics of Moderate/Intensive Educational Needs 4
  - Management Strategies 3
  - Collaboration and Consultation Skills for Special Educators 3
  - Assessment in Special Education 3
  - Special Education Programming: Secondary/Transition 3
  - Special Education Programming: Moderate/Intensive I 4
  - Special Education Programming: Moderate/Intensive II 4

- Field Experience: Student Teaching and Practicum (14 credits) or Master’s Project and Practicum (6 credits):
  - Student Teaching: Special Education 11
  - Practicum or
  - Master’s Project 3

- A comprehensive examination is required. Minimum credits required for degree (d): 42-45

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 learned societies and the Ohio Department of Education. For additional information about specific program requirements please consult the Office of Student Affairs at (330) 972-6970.

Student Portfolio

Students admitted to their College of Education program and beginning their professional education coursework Fall 2005 and thereafter will complete a student portfolio. Specific portfolio requirements 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 experience that provides candidates with an intensive and extensive culminating activity in an approved public or private school for either eleven 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. 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 PRAXIS 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)

(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 credits:**
  - 5170:601 Organizational Leadership 3
  - 5170:604 School-Community Relations 3
  - 5170:606 Evaluation in Educational Organizations 3
  - 5170:607 School Law 3
  - 5170:613 Student Services and Interagency Collaboration 3

- **Curriculum and Supervision – 6 credits:**
  - 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

The Department of Educational Foundations and Leadership offers a 20 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:

Master’s Degree in Educational Administration

- **Foundation – 12 credits:**
  - 5100:600 Philosophies of Education 3
  - 5100:604 Topical Seminar in the Cultural Foundations of Education 3
  - 5100:620 Psychology of Instruction and Teaching 3
  - 5100:624 Seminar: Educational Psychology 3
  - 5100:640 Techniques of Research 3
  - 5100:642 Topical Seminar in Measurement and Evaluation 3

- **Post-Master’s Requirements – 12 credits:**
  - 5170:601 Organizational Leadership 3
  - 5170:604 School-Community Relations 3
  - 5170:606 Seminar: Educational Psychology 3
  - 5170:636 Topical Seminar in Educational Technology 3
  - 5170:640 Techniques of Research 3

- **Curriculum and Supervision – 6 credits:**
  - 5170:609 Principles of Curriculum Development 3
  - 5170:610 Supervision of Instruction 3

Total: 30 credits

The candidate will be required to pass a portfolio assessment by a three-member full-time faculty panel in order to qualify for graduation.

Administrative Specialists

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

- **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 Superintendency 3
  - 5170:763 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 5170:795/796.

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
  - 5170:604 Organizational Leadership 3
  - 5170:606 School-Community Relations 3
  - 5170:607 School Law 3
  - 5170:705 Decision Making in Educational Administration 3
  - 5170:795/6 Internship* 4
  - 6500:654 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: 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
  - 5170:601 Organizational Leadership 3
  - 5170:603 Management of Human Resources 3
  - 5170:604 School-Community Relations 3
  - 6500:654 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.
Admissions to the Superintendent Program currently suspended

The Department of Educational Foundations and Leadership offers a Superintendent Licensure-only program. The license builds from the Principalship Master's Degree and the Principalship Licensure programs. Requirements for the Superintendent License are listed below:

5170:608 School Finance and Economics 3
5170:704 Advanced Organizational Leadership 3
5170:707 The Superintendency 3
5170:732 Public and Media Relations in Educational Organizations 3
5170:795/796 Superintendent Internship 3 credits each

To obtain a license to practice the work of a school superintendent in the State of Ohio, through the College of Education, the candidate will have a total of 60 post-baccalaureate hours, a master's degree, three years of experience practicing under a valid principal license, completion of a supervised two-semester internship, successful passage of the state licensing examination, and good moral character.

Higher Education Administration

Specialized Option

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. 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.

5100:620 Psychology of Instruction for Teaching and Learning 3
5100:646 Multicultural Counseling 3
5100:640 Techniques of Research 3
5100:703 Seminar: History and Philosophy of Higher Education 3

Required courses (27 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 1
5190:620 Internship in Higher Education Seminar 3
5190:626 Policy, Assessment, and Accountability in Higher Education 3

Total Hours Required: 36

Electives (9 to 12 credits):
5190:525 Topical Seminar 3
5190:590 Workshop 3-6
5190:635 Instructional Strategies and Techniques for the College Instructor 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
Research Methodology and Evaluation (admissions suspended)

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)

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.
Instructional Technology Option (30 credits)

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 provides its students with exposure to a wide range of emerging technologies, while still ensuring the basic competencies required of all practitioners. In this way, the program directly addresses the rapidly accelerating changes in the field of interactive and distance learning technologies while still recognizing its roots in instructional design, media, and computer-mediated education.

Master’s degree graduates of the Instructional Technology program have found employment as technology coordinators 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.

- Foundation Studies (9 credits)
  5100:600 Philosophies of Education 3
  or
  5100:604 Topical Seminar in the Cultural Foundations of Education 3
  or
  5100:637 Philosophies of Educational Technology 3
  5100:620 Psychology of Instruction for Teaching and Learning 3
  5100:624 Seminar: Educational Psychology 3
  5100:640 Techniques of Research 3

- Required Courses (15 credits)
  5100:614 Planning for Technology 3
  5100:631 Instructional Design 3
  5100:633 Hypermedia 3
  5100:638 Integrating and Implementing Technology 3
  5100:695 Field Experience: Master’s 3

- Electives (choose 6 credits)
  5100:590, 591 Workshop: Instructional Technology 3
  5100:632 Web-Based Learning Systems 3
  5100:639 Strategies for Online Learning 3
  5100:606 Master’s Technology Project 3

Graduate K-12 Computer Technology Endorsement

This endorsement is only available to teachers or teacher candidates who have obtained or who are simultaneously getting an initial Ohio license/certificate (e.g. in early childhood, middle level, adolescent/young adult, special education, etc.) 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.

For further information on this endorsement contact the Department of Educational Foundations and Leadership.

Educational Psychology Option (30-36 credits)
(admissions suspended)

The cognitive theory and research underlie much of the reform movement in education and the allied professions. The graduate program in Educational Foundations emphasizing Educational Psychology emphasizes a strong understanding of cognition, motivation, teaching, learning, and individual differences and is designed to assist students to become more competent practitioners in a wide range of contexts in education and allied professions.

- Foundation Studies (9 credits)
  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
  5100:640 Techniques of Research 3

- Electives (15-21 hours)
  5100:624 Seminar: Educational Psychology 3
  (may be repeated for up to 6 credits)
  5100:604 Topical Seminar in the Cultural Foundations of Education 3
  5100:636 Topical Seminar in Educational Technology 3
  5100:642 Topical Seminar in Measurement and Evaluation 3
  5100:695 Field Experience: Master’s 3
  5100:621 Learning Processes 3
  5100:623 Teacher Behavior and Instruction 3
  5100:698 Master’s Problem 3
  5100:699 Master’s Thesis 4-6

- Outside Department Requirements (6 hours)
  5610:540 Developmental Characteristics of Exceptional Individuals 3
  5900:780 Seminar in Curricular and Instructional Studies (Cooperative Learning) 3

Social/Philosophical Foundations of Education Option (30-36 credits)

This interdisciplinary graduate program is designed to facilitate professional educators’ developing critical, interpretative, and normative perspectives of the interactions 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, philosophy of education, and sociology of education. Students collaborate with their advisers in selecting one or more of the above disciplines to create a graduate program tailored to their 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
  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
  5100:640 Techniques of Research 3

- Electives (15-21 hours)
  5100:602 Comparative and International Education 3
  5100:604 Topical Seminar in the Cultural Foundations of Education 3
  (may be repeated for up to 9 credits)
  5100:637 Philosophies of Educational Technology 3
  5100:701 History of Education in American Society 3
  5100:703 Seminar: History and Philosophy of Higher Education 3
  5100:705 Seminar: Social/Philosophical Foundations of Education 3
  (may be repeated for up to 9 credits)
  5100:697 Independent Study: Master’s 3
  5100:698 Master’s Problem 3
  5100:699 Master’s Thesis 4-6

Research Methodology and Evaluation Option (30 credits)
(Admissions to Research Methodology and Evaluation currently suspended)

The graduate program in Educational Foundations emphasizing Research Methodology and Evaluation prepares students for careers in research methodology and evaluation. Employment is typically available in government, military, industry and education. These career positions may involve teaching, conducting evaluative research and consulting in a variety of fields.

- Foundation Studies (9 credits)
  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
  5100:640 Techniques of Research 3

- Electives (15 hours)
  5100:642 Topical Seminar in Measurement and Evaluation 3
  5100:699 Master’s Thesis 4-6
  5100:760 Research Design 3
  5100:761 Data Collection Methods 3
  5100:762 Statistics in Education 3
  5100:763 Advanced Educational Statistics 3
  5100:798 Research Projects in Special Areas: Advanced Psychometric Techniques and Measurement 3
  5100:801 Research Seminar: Multiple Regression, Model Building Data Analysis Procedures 3
  5100:801 Research Seminar: Path Analysis, Multivariate Statistical Techniques 3
  5100:801 Research Seminar: Qualitative 3
  5100:801 Research Seminar: SAS or SPSS 3
  5100:801 Research Seminar: Case Studies 3
  5100:697 Independent Study 1-4

* Note: Doctoral Research Seminar may be repeated for up to 9 semester hours.

- Outside Department Requirements (6 hours)
  5500:696 Master’s Project 6
  or
  5500:699 Master’s Thesis 6

- 36 total hours are required.

- A comprehensive exam 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

• Full Admission:
  2.75 grade point average on a completed Bachelor’s degree (or 3.0 for last 60 credit hours)

• Provisional Admission:
  2.5 (or higher) grade point average on a completed Bachelor’s degree

*Those receiving provisional admission must meet with the Technical Education advisor to plan the necessary 9 credits of coursework that need to be completed at the graduate level with a grade of “B” or better before the student can be upgraded to full admission.

Program for those with a B.S. in Technical Education

• Foundation Studies – 9 credits:
  5100:604 Topical Seminar in Cultural Foundations 3
  5100:640 Techniques of Research 3
  5400:580 Diverse Postsecondary Learners 3

• Professional Technical Education Courses – 21 credits:
  5100:639 Strategies for Online 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
  5400:699 Master’s Thesis 6

  Total: 30 credits

Program for those without a B.S. in Technical Education

• Foundation Studies – 9 credits:
  5100:640 Techniques of Research 3
  5400:580 Diverse Postsecondary Learners 3
  5100:710 Adult Learning, Development, and Motivation 3

• Professional Technical Education Courses – 27 credits:
  5100:639 Strategies for Online Learning 3
  5400:505 Workplace Education for Youth and Adults 3
  5400:515 Training in Business and Industry 3
  5400:600 The Two-Year College 3
  5400:620 Postsecondary Instructional Technology 3
  5400:635 Systematic Curriculum Design for Postsecondary Instruction 3
  5400:650 Advanced System Design: Needs Assessment and Evaluation 3
  5400:660 Postsecondary Teacher Leadership 3
  5400:675 Advanced Instructional Applications Seminar 3
  5400:690 Internship in Postsecondary Education 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.

Outdoor Education

(Admissions 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 5100:5xx 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
    5560:650 Outdoor Education: Rural Influences 3

    5560:695 Field Experience: Master’s 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

(Admissions to Physical Education currently suspended)

The graduate program in physical education, requiring 33 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
  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

  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
  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
  5550:521 Comprehensive School Health 4
  5550:695 Field Experience: Master’s 2 (minimum)
  5550:698 Master’s Problem 2 (minimum)
  5550:699 Master’s Thesis 2 (minimum)

  Total Program 33

With the approval of an advisor, the student may select additional courses and/or workshops related to the graduate program.

Option: Exercise Physiology/Adult Fitness

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.

• Required Foundation Courses (6 credits):
  5100:620 Psychology of Instruction for Teaching and Learning 3
  5100:624 Seminar: Educational Psychology 3
  5100:640 Techniques of Research 3

  Subtotal 6

• Required Department Courses (21-24 credits):
  5550:500 Musculoskeletal Anatomy I 3
  or
  5550:501 Musculoskeletal Anatomy II 3
  5550:600 Biomechanics Applied to Sports and Physical Activity 4
  5550:518 Cardiorespiratory Function 3
  5550:501 Musculoskeletal Anatomy II 3
  3100:565 Advanced Cardiovascular Physiology 3
  5550:606 Physiology of Muscular Activity and Exercise 3
  5550:606 Statistics: Qualitative and Quantitative Methods 3
  5550:620 Laboratory Instrumentation Techniques in Exercise Physiology 3
  5550:526 Nutrition in Sports 3

• Required Clinical Experience (2 credits minimum):
  5550:695 Field Experience: Master’s
  or
  5550:699 Master’s Thesis

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• Electives: Select at least one (1) course from among the following and have advisor approval.
  5100:520 Introduction to Instructional Computing 3
  5100:741 Statistics in Education 3
  5100:743 Advanced Education Statistics 3
  5550:601 Sports Administration and Supervision 3
  5550:609 Motivational Aspects of Physical Activity 3
  5550:710 Introduction to Sports Sociology 3
  5550:722 Sports Planning and Promotion 3
  5550:524 Sports Leadership 3
  5550:538 Cardiac Rehab Principles 3
  5550:540 Injury Management for Teachers and Coaches 2
  5550:562 Legal Aspects of Physical Activity 2
  5550:680 Special Topics in Physical Education 3

Option: Sport Science/Coaching
This sport science/coaching graduate program option has been designed to meet the needs of physical education teachers and practicing/prospective coaches. This program meets published NASPE National Standards.

• Required Foundation Courses:
  5100:620 Psychology of Instruction for Teaching and Learning 3 or 5550:604 Current Issues in Physical Education 3 and 5100:640 Techniques of Research 3 Subtotal 6

• Required Courses:

• At least two (2) credits from among the following:
  5550:685 Field Experience: Master’s or 5550:698 Master’s Problem or 5550:699 Master’s Thesis 2 (minimum)

• Electives: The following courses are relevant to this degree. The student may select additional courses and/or workshops related to the graduate program:
  5550:590 Workshop (e.g., Issues of Student Athletes) 1-5 5550:606 Statistics: Qualitative and Quantitative Methods 3 5550:680 Special Topics (e.g., Coaching Youth Sports) 1-5 5570:521 Comprehensive School Health 4 Total Program 35

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 (can be waived based upon experience and submission of a portfolio) 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:*
  8200:608 Pathophysiological Concepts 3 8200:606 Pharmacology for Child and Adolescent Health Nursing 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.

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
The College of Business Administration (CBA) offers graduate programs which lead to the degrees of Master of Business Administration, Master of Science in Management, Master of Taxation, and Master of Science in Accountancy. The University has offered programs of study in business since 1919, initially through the Department of Commerce and since 1952 through the College of Business Administration. In 1958, graduate studies in business were begun. Both the undergraduate and master's programs are accredited by the Association to Advance Collegiate Schools of Business (AACSB).

During its long tradition, the college has sought to fulfill the educational and professional needs of its 450 graduate students, the community and regional business organizations. To meet its urban objectives, the college offers most graduate courses only between 5:20 p.m. and 10:40 p.m. The master's programs are designed to serve those who work full-time and wish to pursue a master's program on a part-time basis. However, many students enroll full-time to complete the master's program in a shorter period.

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 points 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 points based on foundation course 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 650 or above) and a score of at least 500 on the GMAT.

Students who are 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 must be made as to the number of applicants who can be adequately served among those eligible. As a result, offers of admission may be limited to only the most qualified of the eligible applicants as determined by the CBA Graduate Admissions Committee.

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. Those admitted with the classification "provisional status" who have not attained an overall 3.00 GPA upon the completion of 12 graduate credits will be dismissed from the program. Students admitted as special non-degree are restricted to enrolling in a maximum of nine credits foundation 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 test is administered world-wide and the applicant should register for it sufficiently in advance to the filing of the graduate application. The Graduate Management Admissions Test is offered in rare instances, the applicant who has taken the GMAT but does not meet requirements or policies may be considered for admission. Admission decisions are made by the CBA Graduate Admissions Committee. The applicant must petition, in writing, the CBA Graduate Admissions Committee giving those reasons relevant to the situation which demonstrate the likelihood of success – 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. Those admitted with the classification "provisional status" who have not attained an overall 3.00 GPA upon the completion of 12 graduate credits will be dismissed from the program. Students admitted as special non-degree are restricted to enrolling in a maximum of nine credits foundation courses only.

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 descriptions.
- Complete all course requirements of applicable master's program.

Questions regarding these Policies, Procedures, and Requirements may be sent via e-mail to gradcba@uakron.edu. Further information may be found at the College of Business Administration website: http://www.uakron.edu/cba/grad.

Transfer Policy

The College of Business Administration will permit nine credits of comparable graduate courses to be transferred into any of the graduate business programs (10 law school credits into the J.D./M.Taxation program). These credits must be pre-
approved by the director of graduate programs in the C.B.A. 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 M.B.A. is to be obtained, (2) the degree sought is not in the same functional discipline; (3) the desired program (degree curriculum) is specifically approved in advance by the director of graduate programs in business; and (4) not fewer than 21 new credits are earned for the second degree.

Master of Business Administration
The Master of Business Administration program is designed to give the student a general knowledge of the functional areas of business and permit the concentration of study in one of the 13 following areas: accounting, electronic business, entrepreneurship, finance, global sales management, health care management, international business, international finance, management, management of technology and innovation, strategic marketing, or supply chain management. The program consists of 58 graduate credits. Foundation courses may be waived for those who have had recent study in the areas. Foundation and advanced courses can be taken concurrently provided that all prerequisites have been met. Beginning with the Fall 1999 semester, some foundation level courses are available over the World Wide Web. Students should contact the graduate programs office for more information about web-based courses.

• Foundation Courses:
  All are required unless waived at the time of admission. Foundation courses may not be used as concentration or elective courses.
  3250:600 Foundation of Economic Analysis 3
  6200:601 Financial Accounting 3
  6400:602 Managerial Finance 3
  6400:655 Government and Business 3
  6500:600 Management and Organizational Behavior 3
  6500:601 Quantitative Decision Making 3
  6500:610 Computer Techniques for Management 3
  6600:600 Marketing Concepts 3
• Functional Core (16 credits):
  6200:610 Process Analysis and Cost Management 3
  6400:676 Strategic Financial Decision Making 3
  6500:670 Management of Operations 3
  6600:620 Strategic Marketing Management 3
  6700:698 Special Topics in Professional Development: Leadership 3
  6800:635 International Business Environments 3
• Concentration (12 credits):
  The student must select 12 credits in a field of concentration (accounting, electronic business, entrepreneurship, finance, global sales management, health care management, international business, international finance, management, management of technology and innovation, strategic marketing, or supply chain management).
  3250:600 Foundation of Economic Analysis 3
  6200:601 Financial Accounting 3
  6400:602 Managerial Finance 3
  6400:655 Government and Business 3
  6600:600 Management and Organizational Behavior 3
  6600:610 Computer Techniques for Management 3
  6800:600 Marketing Concepts 3
• Free Electives (3 credits):
  The student must select 3 credits of free electives outside the area of concentration. 500-level courses may be used but the student may not count more than 6 credits of 500-level courses in total toward the fulfillment of degree requirements. Accounting students may take only 3 credits of 500-level coursework. Approval of Director is required.
• Integrative (3 credits):
  6500:696 Business Strategy and Policy: Domestic and International 3
• Program Summary
  Foundation Core 24
  Functional Core 16
  Concentration 12
  Free Electives 3
  Integrative 3
  Total Program 66
If the Foundation Core Courses are all waived, the program is 34 credits in length.

Concentration in Accounting
Beginning 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)
• Required:
  6500:608 Entrepreneurship 3
  6500:644 Knowledge Management and Business Intelligence 3
  6600:635 E-Business Marketing Strategies and Tactics 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
Students work with entrepreneurs and venture capitalists in the formulation of business plans based on new products that will be presented at international business plan competitions. 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:
  6300:640 Financing the Entrepreneurial Venture 3
  6300:670 Managing Entrepreneurial Growth 3
  6500:608 Entrepreneurship 3
  6500:663 Data Analysis for Managers 3

Concentration in Direct Integrated Marketing
• 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:
  6600:640 Business Research Methods 3
  6600:645 Innovative Marketing Strategies 3

Concentration in Finance
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
  6400:681 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

Concentration in Health Care Management
• 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
  6500:585 Special Topics in Health Services Administration 3
  6500:686 Health Services Research Project 3
  6500:688 Independent Study in Health Services Administration 3
  3250:680 Interdisciplinary Seminar in Life-Span Development and Gerontology 3
  3250:540 Special Topics: Economics (Medical) 3
  3850:615 Epidemiologic Methods in Health Research 3
  3850:656 Sociology of Health Care 3
  3860:622 Urban Planning and Health Care 3
  4800:630 Biomedical Computing 3
  8200:632 Fiscal Management in Nursing Administration 3
  or three graduate credits approved by the Director.
No more than six credits at the 500-level permitted.

Concentration in International Business
• 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 3
  6200:680 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:*  
   - 6200:664 Research and Quantitative Methods in Accounting  
   - 6400:650 Techniques of Financial Modeling  
   - 6500:662 Applied Operations Research  
   - 6500:663 Data Analysis for Managers  
   - 6600:640 Business Research Methods  

Plus any 9 credits in International Business:  
- 6800:630 International Marketing Policies  
- 6800:685 Multinational Corporations  
- 6800:690 Seminar in International Business  
- 6800:691 Independent Study in International Business  
- 6200:680 International Accounting  
- 6400:681 Multinational Corporate Finance  
- 6400:691 International Markets and Investments  
- 6500:656 Management of International Operations  
- 6500:659 International Human Resource Management  
- 6500:661 Comparative Systems of Employee and Labor Relations  

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:*  
   - 6200:664 Research and Quantitative Methods in Accounting  
   - 6400:650 Techniques of Financial Modeling  
   - 6500:662 Applied Operations Research  
   - 6500:663 Data Analysis for Managers  
   - 6600:640 Business Research Methods  

Choose three credits from the following:
- 6800:630 International Marketing Policies  
- 6800:685 Multinational Corporations  
- 6800:690 Seminar in International Business  
- 6800:691 Independent Study in International Business  
- 6200:680 International Accounting  
- 6400:681 Multinational Corporate Finance  
- 6400:691 International Markets and Investments  
- 6500:656 Management of International Operations  
- 6500:659 International Human Resource Management  
- 6500:661 Comparative Systems of Employee and Labor Relations  

Concentration in International Finance

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  
  - 6400:691 International Markets and Investments  
  - 6400:693 International Banking  

- Choose three credits from the following
  - 6400:631 Financial Markets and Institutions  
  - 6400:645 Investment Analysis  
  - 6400:650 Techniques of Financial Modeling  
  - 6500:678 Capital Budgeting  
  - 6600:680 Selected Topics in Finance  
  - 6600:697 Independent Study in Finance  
  - 6600:698 Independent Study: Business Law  

Concentration in Management

- Required:
  - 6500:663 Data Analysis for Managers  

- Choose 9 graduate credits from 6500. No more than 6 credits at the 500 level.

Concentration in Management of Technology and Innovation

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:
  - 6500:663 Data Analysis for Managers  

- Choose 3 cross-cultural courses may be used for free elective credits.

Concentration in International Business for International Executives

- Required (choose one of the following courses):
  - 6200:664 Research and Quantitative Methods in Accounting  
    - 6400:650 Techniques of Financial Modeling  
    - 6500:662 Applied Operations Research  
    - 6500:663 Data Analysis for Managers  
    - 6600:640 Business Research Methods  

- Plus any 9 credits in International Business:  
  - 6800:630 International Marketing Policies  
  - 6800:685 Multinational Corporations  
  - 6800:690 Seminar in International Business  
  - 6800:691 Independent Study in International Business  
  - 6200:680 International Accounting  
  - 6400:681 Multinational Corporate Finance  
  - 6400:691 International Markets and Investments  
  - 6500:656 Management of International Operations  
  - 6500:659 International Human Resource Management  
  - 6500:661 Comparative Systems of Employee and Labor Relations  

Concentration in International Finance

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  
  - 6400:691 International Markets and Investments  
  - 6500:656 Management of International Operations  
- Recommended free elective (3 credits):
  - Select one course from the following courses:
    - 6500:608 Entrepreneurship  
    - 6600:575 Business Negotiations  
    - 6600:640 Information Systems and IT Governance  
    - 6600:650 Human Resource Systems for Managers  
    - 6600:678 Project Management  

Concentration in Strategic Marketing

- Required (9 credits)
  - 6500:640 Business Research Methods  
  - 6500:645 Innovative Marketing Strategies  
  - 6600:670 Competitive Business Strategies  

- Choose three credits from the following:
  - 6600:540 Product and Brand Management  
  - 6600:630 Customer Relations Management  
  - 6600:635 E-Business: Electronic Marketing  
  - 6600:655 Integrated Marketing Communications  

Concentration in Supply Chain Management

- Required:
  - 6500:675 Supply Chain Management  

- Choose 9 credits from the following:
  - 6500:533 Supply Chain Logistics Planning  
  - 6500:656 Management of Global Supply Chains and Operations  
  - 6600:662 Supply Chain Analysis  
  - 6600:576 Supply Chain Sourcing  
  - 6600:678 Project Management  

Master of Science in Accountancy

The Master of Science in Accountancy 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 accountancy 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.

The Program

Individuals with a non-accounting undergraduate business degree from a regionally accredited institution or international equivalent or individuals with a non-busi-
ness 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):
  All foundation courses must be taken prior to courses in the MSA program. An exception to this policy may be made by the chair of the School of Accountancy for students who have received waivers from foundation courses.

  - 6200:603 Accounting Decision Support Systems 3
  - 6400:602 Managerial Finance 3
  - 6400:623 Legal Aspects of Business Transactions 3
  - 6500:601 Quantitative Decision Making 3

- Pre-MSA Financial Reporting Courses (12 credits):
  All Pre-MSA Financial Reporting Courses with the exception of 6200:540 Auditing must be completed prior to taking courses in the MSA program.

  - 6200:621 Corporate Accounting and Financial Reporting I 3
  - 6200:625 Corporate Accounting and Financial Reporting II 3
  - 6200:626 Intermediate Accounting II or equivalent 3
  - 6200:637 Contemporary Accounting Issues 3
  - 6200:658 Enterprise Risk Assessment and Assurance 3
  - 6200:660 Accounting and Assurance Project (capstone course) 3
  - 6200:620 Advanced Accounting* 3

  *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 an advanced accounting course at the undergraduate level must take a different course.

- Group A: Accounting and Assurance Core (12 - 15 credits):

  - 6200:615 ERP and Financial Data Communications 3
  - 6200:637 Contemporary Accounting Issues 3
  - 6200:658 Enterprise Risk Assessment and Assurance 3
  - 6200:660 Accounting and Assurance Project (capstone course) 3
  - 6200:520 Advanced Accounting* 3

- Group B: Taxation Core (3 - 6 credits):

  - 6200:627 Survey of Federal Taxation 3
  - 6200:531 Taxation II* 3
  - 6200:668 Enterprise Risk Assessment and Assurance 3
  - 6200:631 Corporate Taxation I 3

  *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.

- Group C: Accounting Electives (0 - 6 credits):

  - 6200:564 Information Systems Security 3
  - 6200:570 Government and Institutional Accounting 3
  - 6200:659 Assurance Services and Data Mining 3
  - 6200:631 Corporate Taxation I 3

  These electives are open only to students who have not previously completed similar courses.

- Group D: Information Systems Electives (0 - 12 credits):

  - 6500:643 Analysis and Design of Business Systems 3
  - 6500:641 Business Database Systems 3
  - 6500:648 Management of Telecommunications 3
  - 6500:678 Project Management 3

  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 CI).

- Group E: Finance Electives (0 - 15 credits):

  - 6400:631 Financial Markets and Institutions 3
  - 6400:645 Investment Analysis 3
  - 6400:632 Strategic Financial Decision Making 3
  - 6400:681 MultiNational Corporate Finance 3
  - 6400:691 International Markets and Investments 3

  The Chair of the School of Accountancy may approve or substitute other relevant finance courses not listed in Group E above.

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**Accelerated BS/MS Accounting**

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 bachelor's 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 a 3.0 or higher GPA 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

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 groups of courses listed below. No more than nine credits can be 500-level (6200-6xx) courses. At least 12 credits must be 600-level accounting (6200-6xx) courses.

- **Group A: Accounting and Assurance Core (12 - 15 credits):**
  - 6200:515 ERP and Financial Data Communications 3
  - 6200:537 Contemporary Accounting Issues 3
  - 6200:558 Enterprise Risk Assessment and Assurance 3
  - 6200:560 Accounting and Assurance Project (capstone course) 3
  - 6200:520 Advanced Accounting* 3

  *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 an advanced accounting course at the undergraduate level must take a different course.

- **Group B: Taxation Core (3 - 6 credits):**
  - 6200:627 Survey of Federal Taxation 3
  - 6200:531 Taxation II* 3
  - 6200:658 Enterprise Risk Assessment and Assurance 3
  - 6200:631 Corporate Taxation I 3

  *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.

- **Group C: Accounting Electives (0 - 6 credits):**
  - 6200:564 Information Systems Security 3
  - 6200:570 Government and Institutional Accounting 3
  - 6200:659 Assurance Services and Data Mining 3
  - 6200:631 Corporate Taxation I 3

  These electives are open only to students who have not previously completed similar courses.

- **Group D: Information Systems Electives (0 - 9 credits):**
  - 6500:643 Analysis and Design of Business Systems 3
  - 6500:641 Business Database Systems 3
  - 6500:648 Management of Telecommunications 3
  - 6500:678 Project Management 3

  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 CI).

- **Group E: Finance Electives (0 - 9 credits):**
  - 6400:631 Financial Markets and Institutions 3
  - 6400:645 Investment Analysis 3
  - 6400:632 Strategic Financial Decision Making 3
  - 6400:681 MultiNational Corporate Finance 3
  - 6400:691 International Markets and Investments 3

  The Chair of the School of Accountancy may approve or substitute other relevant finance courses not listed in Group E above.
Master of Taxation

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 or 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:

a. develop substantive and comprehensive knowledge of federal taxation;
b. understand the state and local taxation regimes of selected states, including the State of Ohio;
c. develop abilities to research taxation issues, identify and solve taxation problems, and plan taxation strategies;
d. develop the ability to contribute as a taxation specialist to strategic planning and decision-making in organizations;
e. demonstrate effective written and oral presentation skills; and
f. 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 individuals:

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. Individuals with an undergraduate degree in business from a regionally accredited institution or international equivalent.
6. Other individuals who demonstrate a high potential to succeed in the MTax program (based on GMAT scores, undergraduate GPA, letters of recommendation, and prior work experience) and who have earned at least a B average in 6200:601. Financial Accounting (or equivalent) and 6200:627. Survey of Federal Taxation (or equivalent).

Students who have at least two years of work experience and have an accounting certification (i.e. CPA, CMA, CIA, etc.) or have successfully passed the bar exam do not need to take the GMAT 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.

Individuals in categories 3 and 5 must complete an introduction to financial accounting course and a federal income taxation 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.

**Required Master of Taxation Courses:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<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>9020:721</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>
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<td>6200:651</td>
<td>International Taxation</td>
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**Total Credits of Required Courses**

<table>
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<th>Credits</th>
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**Approved Taxation Electives:**

<table>
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<tr>
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<tbody>
<tr>
<td>6200:633</td>
<td>Estate and Gift Taxiation</td>
<td>3</td>
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<tr>
<td>6200:642</td>
<td>Corporate Taxation II</td>
<td>3</td>
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<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>
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<tr>
<td>6200:646</td>
<td>Consolidated Tax Returns</td>
<td>3</td>
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<tr>
<td>6200:647</td>
<td>Qualified Pension and Profit-Sharing Plans</td>
<td>3</td>
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<tr>
<td>6200:650</td>
<td>Estate Planning</td>
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<td>6200:662</td>
<td>S Corp</td>
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<tr>
<td>6200:693</td>
<td>Selected Topics: Mergers and Acquisitions</td>
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**Total Credits Required for MTax**

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**Total Credits Required for HSM**

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**Total Credits of Required Courses**

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**Information Systems Management (ISM)**

**Management Core Courses (12 credits)**

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<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>6600:641</td>
<td>Database Business Systems</td>
<td>3</td>
</tr>
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<td>6600:643</td>
<td>Analysis and Design of Business Systems</td>
<td>3</td>
</tr>
<tr>
<td>6600:645</td>
<td>Software Development and Quality Assurance</td>
<td>3</td>
</tr>
<tr>
<td>6600:646</td>
<td>Enterprise Systems Implementation</td>
<td>3</td>
</tr>
<tr>
<td>6600:678</td>
<td>Project Management</td>
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</tr>
</tbody>
</table>

**Free Elective (3 credits):**

The student must select 3 credits of free electives from outside the area of concentration. A 500-level course may be used but the student may not count more than 6 credits of 500-level courses in total toward the fulfillment of degree requirements. Approval of Director is required.

**HRM Required Concentration Courses (15 credits)**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>6600:650</td>
<td>Human Resource Systems for Managers</td>
<td>3</td>
</tr>
<tr>
<td>6600:651</td>
<td>Management of Organizational Transformation</td>
<td>3</td>
</tr>
<tr>
<td>6600:654</td>
<td>Management of Organizational Conflict</td>
<td>3</td>
</tr>
<tr>
<td>6600:658</td>
<td>Strategic and Global Human Resource Management</td>
<td>3</td>
</tr>
<tr>
<td>6600:660</td>
<td>Staffing and Employment Regulation</td>
<td>3</td>
</tr>
</tbody>
</table>

**HRM Restricted Electives (select 3 credits)**

Any 6500:6xx course

**Total Concentration**

<table>
<thead>
<tr>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>31</td>
</tr>
</tbody>
</table>
Accelerated MSM - ISM Program Option

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:

- Undergraduate degree in Information Systems (from AACSB accredited institution) or related fields with a Pre-MBA minor
- 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)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>6500:640 Information Systems and IT Governance</td>
<td>3</td>
</tr>
<tr>
<td>6500:663 Data Analysis for Managers</td>
<td>3</td>
</tr>
<tr>
<td>6500:675 Supply Chain Management</td>
<td>3</td>
</tr>
</tbody>
</table>

Information Systems Core (12 credits)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>6500:643 Analysis and Design of Business Systems</td>
<td>3</td>
</tr>
<tr>
<td>6500:646 Software Development and Quality Assurance</td>
<td>3</td>
</tr>
<tr>
<td>6500:646 Enterprise Systems Implementation</td>
<td>3</td>
</tr>
<tr>
<td>6500:678 Project Management</td>
<td>3</td>
</tr>
</tbody>
</table>

Practicum (3 credits) Choose one from the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>6500:690 Selected Topics in Management (This course may be taken as an elective to add a Global or Study Abroad experience)</td>
<td>3</td>
</tr>
<tr>
<td>6700:695 Internship (see below for guidelines)</td>
<td>3</td>
</tr>
</tbody>
</table>

Electives (6 credits)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>6500:520 Management of Data Networks (May be applied toward the program if taken as an undergraduate senior and did not apply toward the baccalaureate degree)</td>
<td>3</td>
</tr>
<tr>
<td>6500:554 Information System Security (May be applied toward the program if taken as an undergraduate senior and did not apply toward the baccalaureate degree)</td>
<td>3</td>
</tr>
<tr>
<td>6500:644 Knowledge Management and Business Intelligence</td>
<td>3</td>
</tr>
<tr>
<td>6500:652 Organizational Behavior (Recommended for students with an undergraduate degree in a non-Business field)</td>
<td>3</td>
</tr>
<tr>
<td>6500:6xx Any Management course</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Concentration 18

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. The student should contact each school independently for information covering admission criteria and procedures (for further information on School of Law admissions, write: Director of Admissions, School of Law, The University of Akron, Akron, OH 44325-2901). A baccalaureate degree is required.

Degree Requirements

A student is required to fulfill the requirements of the School of Law, 87 credits, which includes 9 to 10 credits transferred from the CBA. The requirements of the CBA may be met by fulfilling the requirements previously listed which include the common body of knowledge (Foundation) courses (unless waived because of prior undergraduate credits earned), and 25 credits for M.B.A. (24 for the M.S.M.-HR) of advanced courses in the CBA plus nine credits transferred from the School of Law. The Master of Taxation program consists of 21 credits of advanced courses in the CBA plus 9 credits transferred from the School of Law. The reciprocal acceptance of course credits by each school is the essence of the joint programs. All law courses used to fulfill CBA requirements must be approved by the director of Graduate Programs in Business prior to completion. To earn both degrees, a total of 98 (J.D./M.Tax.), 102 (J.D./M.B.A.), or 101 (J.D./M.S.M.-HR) credits is required, depending on the master’s program pursued. More credits may be required for the master’s degree if Foundation courses are required.

Upon the approval of the director of Graduate Programs in Business, 9 credits of School of Law courses may be applied toward the Masters of Taxation degree. Law courses from the following list may be applied to the MTax program:

9200:641 Corporate Taxation I (3 credits)
9200:642 Taxation of Intellectual Property (3 credits)
9200:645 Non-profit Tax Entities (3 credits)
9200:675 Special Problems in Estate Planning (3 credits)
9200:680 Qualified Pension and Profit Sharing Plans (3 credits)
9200:684 Entities (3 credits)
9200:685 Wills, Trusts, and Estates I (3 credits)
9200:686 Wills, Trusts, and Estates II (3 credits)
9200:684 Mergers and Acquisitions (3 credits)

Other courses offered in the School of Law as approved by the Chair of the School of Accountancy and the MTax program coordinator

Courses that will transfer as MTax elective courses:

9200:639 Estate and Gift Taxation (3 credits)
9200:645 Non-profit Tax Entities (3 credits)
9200:675 Special Problems in Estate Planning (3 credits)
9200:680 Qualified Pension and Profit Sharing Plans (3 credits)
9200:684 Entities (3 credits)
9200:685 Wills, Trusts, and Estates I (3 credits)
9200:686 Wills, Trusts, and Estates II (3 credits)
9200:684 Mergers and Acquisitions (3 credits)

Other courses offered in the School of Law as approved by the Chair of the School of Accountancy and the MTax program coordinator

J.D.,M.B.A. students may transfer up to nine credits of School of Law courses into the M.B.A. program. Up to six credits may be in their area of concentration and must be selected from the courses listed below. Related courses not listed under concentrations may transfer with approval of the director of graduate programs in Business Administration. Three credits of free electives may be chosen from other business-related law courses and must be approved by the director of graduate programs in Business Administration.

J.D.,M.S.M.-HR students may transfer up to nine credits of School of Law courses into the M.S.M. program. Up to six credits may be in their area of concentration and must be selected from the courses listed below. Three credits of free electives may be chosen from other business-related law courses and must be approved by the director of graduate programs in Business Administration.

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
9200:680 Qualified Pension and Profit Sharing
9200:685/686 Wills, Trusts and Estates I, II
9200:691 International Investments and Commercial Transactions
9200:697 International Law
9200:698 International Trade
9200:699 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 Negotiation

Marketing (choose 3 credits)

9200:611 Entertainment Law
9200:637 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

Law Courses to be used as MSM-HR Concentration Courses

9200:637 Employment Discrimination
9200:642 Alternative Dispute Resolution
9200:651 Employment Law
9200:659 Negotiation
9200:684 Human Resources Lawyer
Doctor of Audiology Program (Au.D.)
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 with half of the classes offered at each university. Students must choose to be admitted to NOAC either through The University of Akron or Kent State University and they will 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

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
  7700:705 Auditory Disorders 2
  7700:706 Anatomy and Physiology Underlying Neuro-Otology 4
  7700:707 Psychoacoustics 3
  7700:708 Critical Analysis of Research in Audiology II 2
  7700:742 Directed Observation in Audiology II 1
  7700:710 Audiologic Assessment 3
  7700:711 Industrial and Community Noise 3
  7700:743 Clerkship I 1
  7700:712 Speech-Language Pathology for the Audiologist 3
  7700:713 Hearing Aid Technology 4
  7700:714 Gerontological Issues in Audiology 3
  7700:744 Clerkship II 1
  7700:715 Central Auditory Processing: Evaluation and Management 3
  7700:716 Adult Hearing Aid Fitting and Selection 3
  7700:717 Pediatric Audiology 3
  7700:718 Cochlear Implants 2
  7700:745 Internship I 2
  7700:719 Counseling in Audiology 3
  7700:720 Pediatric Amplification 3
  7700:746 Internship II 2
  7700:721 Evaluation and Management of Balance Disorders 3
  7700:722 Audiologic Management of the School-Aged Child 3
  7700:723 Audiologic Rehabilitation of Adults 3
  7700:724 History of Audiology 1
  7700:747 Graduate Audiologist I 3
  7700:725 Medical Management of Auditory Disorders 2
  7700:726 Electrophysiological Techniques in Audiology 3
  7700:727 Cultural Issues in Deafness 2
  7700:728 Seminar in Audiology 2

- Option Electives
- 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:
  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

Child and Family Development Option
- Core Courses:
  7400:602 Family in Lifespan Perspective 3
  7400:605 Developmental Parent-Child Interactions (online) 3
  7400:607 Family Dynamics 3
  7400:610 Child Development Theories 3
  7400:685 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):
  7400:501 American Families in Poverty (online) 3
  7400:502 Middle Childhood and Adolescence 3
  7400:506 Family Financial Management 3
  7400:540 Family Crisis 3
  7400:541 Family Relationships in the Middle and Later Years 3
  7400:542 Human Sexuality 3
Thesis or Project (select one):  
- 7400:694 Master's Project 5  
- 7400:699 Master's Thesis 5  
- Total: 40

Option Electives
Select 13 credits with approval of advisor:
- 7400:543 Practicum in Family and Consumer Sciences 3
- 7400:580 Organization and Supervision of Child-Care Centers 3
- 7400:596 Parent Education (online) 3
- 7400:688 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):
- 7400:694 Master's Project 5  
- 7400:699 Master's Thesis 5  
- Total: 40

Child Life Option
Core Courses:
- 7400:546 Culture, Ethnicity, and Family (online) 3
- 7400:500 Nutrition Communication and Education 4
- 7400:551 Child in the Hospital 4
- 7400:555 Practicum Experience in a Child Life Program 3
- 7400:584 Hospital Settings, Children, and Families 3
- 7400:552 Children, Illness, and Loss 3
- 7400:595 Child Life Internship 5

Cognate Electives:
- 7600:622 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):
- 7400:694 Master's Project 5  
- 7400:699 Master's Thesis 5  
- Total: 40

Nonthesis (Select nine credits from the following list; two courses must be 600-level):
- 7400:501 American Families in Poverty (online) 3
- 7400:504 Middle Childhood and Adolescence 3
- 7400:540 Family Crisis 3
- 7400:588 Seminar: FCS (Child Life Topic) 3
- 7400:596 Parent Education (online) 3
- 7400:605 Developmental Parent-Child Interactions (online) 3
- 7400:610 Child Development Theories 3
- 7400:665 Development in Infancy and Early Childhood 3
- 7400:696 Internship: Advanced Programming 5

Total for Master's Project or Master's Thesis: 42  
Total for Nonthesis Option: 46

Clothing, Textiles and Interiors Option
Core Courses:
- 3100:634 Material Culture Studies 3
- 3100:639 Theories of Fashion 3
- 3100:677 Social Psychology of Dress and the Near Environment 3

Options Electives (select 13 credits with approval of advisor):
- 3100:518 History of Interior Design I 4
- 3100:519 History of Interior Design II 4
- 3100:523 Professional Image Analysis 3
- 3100:525 Textiles for Apparel 3
- 3100:527 Global Issues in Textiles and Apparel 3
- 3100:536 Textile Conservation 3
- 3100:537 Historic Costume 3
- 3100:538 History of Fashion 3
- 3100:631 Problems in Design 1-6
- 7400:688 Practicum in Family and Consumer Sciences 3
- 7400:696 Individual Investigation in Family and Consumer Sciences 1-6

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):
- 7400:694 Master's Project 5  
- 7400:699 Master's Thesis 5  
- Total: 40

Food and Consumer Science Option (admissions temporarily suspended)
Core Courses:
- 7400:575 Analysis of Food 3
- 7400:576 Developments in Food Science 3

- 7400:520 Experimental Foods (if taken at the undergraduate level, choose 3 additional credits from option electives) 3

Option 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) 2-3
- 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

Cognate Electives:
Select 5-8 credits with approval of advisor from 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):
- 7400:694 Master's Project 5  
- 7400:699 Master's Thesis 5  
- Total: 40

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.

Nutrition and Dietetics
A program of study is offered leading to the Master of Science in Nutrition and Dietetics. Students must meet the following admission requirements for acceptance in the program:
- Meet the 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 4.5 on analytical writing; OR
  - 900 combined on verbal and quantitative with at least a 4.0 on analytical writing
- Submit a letter of personal career goals.
- Three letters of recommendation must be submitted.

Graduate faculty of the School of Family and Consumer Sciences may require an interview with any applicant.

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 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
The master's thesis is optional for students in speech-language pathology. All 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.

Undergraduate degree in social work or a related field.

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.

Social Work Requirements:

- 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.

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.

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

Admission Requirements - Speech-Language Pathology

- Hold an undergraduate major in speech-language pathology or complete undergraduate work 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
  * 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 15.

Degree Requirements

- The master’s thesis is optional for students in speech-language pathology. All students must 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; Nutrition 1-3
  7700:595 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
  7703:632 Dysphagia 3
  7703:633 Professional Issues 2
  7703:639 Audiology for the Speech-Language Pathologist 3
  7703:650 Advanced Clinical Practicum: Speech-Language Pathology (three registrations)
  7703:696 Externship: Speech Pathology and Audiology (two registrations) 6 each
  7703:696 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.
First Year Professional Foundation:

- Fall Semester
  - 7750:601 Foundation Field Practicum 3
  - 7750:605 Social Work Practice with Small Systems 3
  - 7750:602 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
  - 7750:664 Advanced Practice with Small Systems II 3

- Spring Semester
  - 7750:604 Advanced Field Practicum 3
  - 7750:608 Advanced Practice with Small Systems II 3
  - 7750:675 Program Evaluation 3

Second Year Concentrations (Macro Practice):

- Fall Semester
  - 7750:603 Advanced Field Practicum 3
  - 7750:611 Dynamics of Racism and Discrimination 3
  - 7750:634 Community, Economic Systems and Social Policy Analysis 3
  - 7750:672 Community Organization and Planning 3
  - 7750:675 Program Evaluation 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

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

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
  - 7750:675 Program Evaluation 3

Concentrations (Macro Practice):

- Fall Semester (Third Year)
  - 7750:611 Dynamics of Racism and Discrimination 3
  - 7750:634 Community, Economic Systems and Social Policy Analysis 3

- Spring Semester (Third Year)
  - 7750:671 Social Work Administration 3
  - 7750:603 Advanced Field Practicum 3

- Fall Semester (Fourth Year)
  - 7750:672 Community Organization and Planning 3
  - 7750:603 Advanced Field Practicum 3

- Spring Semester (Fourth Year)
  - 7750:673 Strategies of Community Organization 3
  - 7750:675 Program Evaluation 3
  - 7750:604 Advanced Field Practicum 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
  7750:608 Advanced Practice with Small Systems I 3
  7750:603 Advanced Field Practicum 3
  One elective 3

- Spring Semester
  7750:675 Program Evaluation 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
  7750:674 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 6

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.
Music Education Option: General Music Emphasis

Thesis Option – 32 credits
* Required Music Education Core Courses – 13-15 credits
7500:590 Music Workshops 6
7520:5-6— Applied Music 8
7510:6— Ensemble 2
7505:5-6— Other music courses 8
7105:6— Educational Foundations and Leadership 4
5105:5-6— General Administration 4
55—5—6— Curricular and Instructional Studies 4
or
5500:780 Seminar in Curricular and Instructional Studies 1-3
(Maximum of 4 credits of 5500:780)

* Additional music/education courses – select 25 credits with approval of music education and graduate advisors. 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
7510:5— Applied Music 8
7505:5-6— Ensemble 2
7505:5-6— Other music courses 8
5105:5-6— 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
(Maximum of 4 credits of 5500:780)

* Topics related to instrumental music.

Non-Thesis Option – 34 credits
* Required Music Education Core Courses – 9 credits
7500:511 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 23 credits with approval of music education and graduate advisors. 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
7510:5— Applied Music 8
7505:5-6— Ensemble 2
7505:5-6— Other music courses 8
5105:5-6— 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
(Maximum of 4 credits of 5500:780)

* Topics related to general music.
Music Education Option: Choral Conducting

- Required Music Education Core (13 credits)
- 7500:611 Foundations of Music Education 3
- 7500:612 Practices and Trends in Music Education 3
- 7500:614 Measurement and Evaluation in Music Education 3
- 7500:699 Master’s Thesis/Performance* 4

- Required Choral Options (17 credits)
- 7500:556 Advanced Choral Conducting 4
- 7500:573 Studies in Choral Literature (20th Century) 2
- 7500:574 Integrative Conducting Workshop 2
- 7500:621 Choral Ensemble 3
- 7500:624 Applied Voice 4

- Electives (6 credits)
- 7500:570 Studies in Choral Literature I (Med/Rem) 2
- 7500:571 Studies in Choral Literature II (Baroque) 2
- 7500:572 Studies in Choral Literature III (Class/Rom) 2
- 7500:615 Music Styles and Analysis I 2
- 7500:616 Music Styles and Analysis II 2
- 7500:617 Music Styles and Analysis III 3
- 7500:697 Advanced Problems 1-2

Total credits 36

*Performance option may be exercised (conducting a choral concert) along with a major research paper which focuses on the repertoire to be performed in lieu of a thesis.

Music History and Literature Option

- Music core courses – eight credits (to be selected):
  - 7500:555 Advanced Conducting: Instrumental 2
  - 7500:556 Advanced Conducting: Choral 2
  - 7500:618 Musical Styles and Analysis IV (20th Century) 2
  - 7500:621 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 Graduate Bibliography and Research in Music 2
  - 7500:697 Advanced Problems in Music 2
  - 7500:699 Master’s Thesis/Project 4-6

- Major required courses – 20-22 credits:
  - 7500:551 Introduction to Musicology 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 Graduate Bibliography and Research in Music 2
  - 7500:697 Advanced Problems in Music 2
  - 7500:699 Master’s Thesis/Project 4-6

- 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: 34-36 credits.

Music Technology Option

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 business. 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

- Major required courses – 25 credits:
  - 7500:553 Music Software Survey and Use 2
  - 7500:613 Instructional Programming in Music for the Microcomputer 2
  - 7500:618 Musical Styles and Analysis IV (20th Century) 2
  - 7500:627 Computer Studio Design 2
  - 7500:653 Electronic Music 3
  - 7500:699 Master’s Thesis/Project 4
  - 7501:607 Graduate Research in Communication 3

- Electives – 2 credits. To be selected by the student and advisor.

Degree Total: 33 credits.

Performance Option in Accompanying

- 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
  - 7500:618 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 Accompanying I 1
  - 7500:641 Advanced Accompanying II 1
  - 7500:642 Advanced Accompanying III 1
  - 7500:643 Advanced Accompanying IV 1
  - 7500:666 Advanced Song Literature 3
  - 7500:698 Graduate Recital (to be completed in a minimum of two performance media) 2
  - 7510:614 Keyboard Ensemble (participation in two ensembles required)** 2-4
  - 7510:618 Small Ensemble - Mixed 2
  - 7520:6— Applied Music (piano, organ and/or harpsichord) 8

- Additional music courses – two to three credits.

- Electives – two 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.

Note: A minimum pronunciation proficiency is required in Italian, German and French. If the student lacks background in any of these language requirements, completion of undergraduate courses may be required.

No more than a total of 16 credits of 7520 courses may be applied to the degree.

All candidates for this degree must accompany a minimum of three solo ensemble recitals (instrumental and vocal). These can be done as part of 7500:697

**Two semesters ensemble participation required for degrees completed in two semesters. Four semesters ensemble participation required for degrees completed in four semesters.

Performance Option in Winds, String Percussion

- 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
  - 7500:621 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) 8

- 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
  - 7500:632 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, in 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 10 credits of 7550 courses may be applied to the degree.
Performance Option in Voice

- 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
  7500:621 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 – 20-22 credits:
  7500:618 Musical Styles and Analysis IV (20th Century) 2
  7500:665 Vocal Pedagogy 3
  7500:666 Advanced Song Literature 3
  7500:698 Graduate Recital
  7510:6— Ensemble (participation in two ensembles required)** 2-4
  7520:624 Applied Voice 8

- Additional music courses – two credits (suggested minimum).
  Graduate-level (music) courses, workshops, advanced problems and/or applied lessons, to be selected by student and advisor.

- Electives – four credits.
  Areas may include graduate-level courses in other disciplines, such as theatre arts, in 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

- 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
  7500:621 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 – 18-21 credits:
  7500:618 Musical Styles and Analysis IV (20th Century) 2
  7500:562 Repertoire and Pedagogy: Organ 3
  7500:633 Teaching and Literature: Piano and Harpsichord 2
  7500:697 Advanced Problems in Music 2
  7500:698 Graduate Recital
  7510:614 Keyboard Ensemble (participation in two ensembles required)** 2-4
  7520:624 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

- Music Core Courses (8 credits)
  7500:616 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

- Major Required Courses (24 credits)
  7500:556 Advance Choral Conducting 2

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College of Nursing

N. Margaret Wineman, Ph.D., R.N., CNS, Dean
Diana L. Biordi, Ph.D., R.N.,F.A.A.N., Associate Dean, Research and Scholarship
Kathleen Ross-Alaolmolki, Ph.D., R.N., Assistant Dean, Academic Nursing Programs
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, racially, 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 interrelations 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
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 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 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 which will assess research interests and motivation for successful completion of doctoral study in the JPDN program.
- Register for courses within two (2) years of acceptance into the JPDN, or otherwise the acceptance is void.

Students wishing to transfer into the Ph.D. in Nursing Program must comply with the university standards for acceptance and are referred elsewhere in this catalog for that information.
International students will be considered for admission. In addition to the above admission criteria, international students must demonstrate a high level of competence in English, a minimum score of 550 on the Test of English as a Foreign Language (TOEFL). International students must comply with university procedures for accepting international students.
Students will be assigned an academic advisor based on mentoring and mutual research interests. Advisor and student will develop an academic program plan customized to student interest, subject to advisor approval. Target dates for successfully completing the qualifying examination and the completion of the dissertation will be developed early in the program plan. Students may change advisors for academic or dissertation purposes, subject to the approval of the JPDN directors.
For progression and graduation, students must meet the following degree requirements:
- maintain an overall grade point average of 3.0 on a four-point scale (or be liable to dismissal according to University policies);
- adhere to criteria concerning enrollment, residency, and leaves of absence;
- complete degree requirements within 9 years of enrollment;
- complete 42 semester hours of required course work;
- successfully complete the written preliminary examination after first year of full-time coursework and/or 24 credits, qualifying examination, and dissertation requirements;
- successfully complete and orally defend a dissertation based upon original investigation and critical scholarship.
Students who do not meet the criteria for successful progression and graduation will be notified in writing.

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 nursing 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
  8200.825 Quantitative Research Methods 3
  8200.830 Qualitative Research Methods 3
  8200.845 Advanced Methods for Research 3
- 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 (6 credits)
  Cognates 6
  (Two 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 1-13
  8200.898 Research in Nursing 1-15
- Health Care and nursing policy:
  One required course (3 credits)
  8200.835 Nursing and Health Care Policy 3
### 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, and have successfully completed the qualifying examination, and have been approved by the appropriate administrative bodies of the program.

- **Dissertation Proposal**. 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 samples of written work 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 members 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 for 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.**

### 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 nursing program.**
- **3.00 GPA on a 4.00 scale for all previous college work.**

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**MARTER OF SCIENCE IN NURSING**

http://www3.uakron.edu/nursing/Academic/masters.htm

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**Accreditation**

The master's degree programs are fully accredited by the Commission on Colleague 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 630, Washington, D.C., 20036, (202) 887-6791.

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**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 8200:815, 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 120-credit hours with the Co-op program (paid positions).
- **Internship** in generalist practice during Summer Session I
- **Internship** in advanced practice nursing 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 may 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 or 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 (8200:825) 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.
### 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 nursing core consists of a total 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 8200:618, 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 RNs who are interested in obtaining the baccalaureate degree in nursing and/or continuing on to a 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 II) 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:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>8200:608</td>
<td>Pathophysiological Concepts of Nursing Care I (*)</td>
<td>3</td>
</tr>
</tbody>
</table>

### Admission Procedures

The graduate program in the RN/MSN option is part of the RN sequence. The program may be completed in either five or seven semesters. It is specifically designed for registered nurses who hold a diploma or associate degree in nursing or bachelor’s degree in another field. In order to meet the requirements for admission to the program, applicants must have a current license as a registered nurse in the state of Ohio and a current license in the state in which the student plans to practice. Applicants must also attest to meeting the professional standards set by the state board of nursing. All applicants must have a current CPR certificate.

### Pathophysiological Concepts of Nursing Care I (NUR 8200:608)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>8200:603</td>
<td>Theoretical Basis for Nursing</td>
<td>3</td>
</tr>
<tr>
<td>8200:606</td>
<td>Information Management in Advanced Nursing Practice</td>
<td>3</td>
</tr>
<tr>
<td>8200:607</td>
<td>Policy Issues in Nursing</td>
<td>3</td>
</tr>
<tr>
<td>8200:613</td>
<td>Nursing Inquiry I</td>
<td>3</td>
</tr>
<tr>
<td>8200:618</td>
<td>Nursing Inquiry II</td>
<td>3</td>
</tr>
<tr>
<td>8200:699</td>
<td>Master’s Thesis</td>
<td>1-6</td>
</tr>
</tbody>
</table>

Functional role courses selected by students based upon area of specialty. (*) Anesthesia students take 8200:651 and 8200:652.

### Nurse Anesthesia

The Anesthesia Track (60 credit hours) meets certification requirements through the American Association of Nurse Anesthetists’ (AANA) Council on Certification of Nurse Anesthetists (CCNA). The Student must complete the following courses with a minimum grade of B alloys with 3.0 or better:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>8200:651</td>
<td>Advanced Physiological Concepts in Health Care I</td>
<td>3</td>
</tr>
<tr>
<td>8200:652</td>
<td>Advanced Physiological Concepts in Health Care II</td>
<td>3</td>
</tr>
<tr>
<td>8200:659</td>
<td>Pathophysiology for Nurse Anesthetists</td>
<td>3</td>
</tr>
<tr>
<td>8200:657</td>
<td>Nurse Anesthesia Residency I</td>
<td>4</td>
</tr>
<tr>
<td>8200:640</td>
<td>Scientific Components of Nurse Anesthesia</td>
<td>3</td>
</tr>
<tr>
<td>8200:641</td>
<td>Pharmacology for Nurse Anesthesia I</td>
<td>3</td>
</tr>
<tr>
<td>8200:642</td>
<td>Introduction to Nurse Anesthesia</td>
<td>2</td>
</tr>
<tr>
<td>8200:643</td>
<td>Principles of Anesthesia I</td>
<td>4</td>
</tr>
<tr>
<td>8200:644</td>
<td>Pharmacology for Nurse Anesthesia II</td>
<td>3</td>
</tr>
<tr>
<td>8200:645</td>
<td>Principles of Anesthesia II</td>
<td>4</td>
</tr>
<tr>
<td>8200:646</td>
<td>Nurse Anesthesia Residency II</td>
<td>4</td>
</tr>
<tr>
<td>8200:647</td>
<td>Professional Role Seminar</td>
<td>2</td>
</tr>
<tr>
<td>8200:648</td>
<td>Nurse Anesthesia Residency III</td>
<td>4</td>
</tr>
<tr>
<td>8200:649</td>
<td>Nurse Anesthesia Residency IV</td>
<td>4</td>
</tr>
</tbody>
</table>

### CRNA-MSN Anesthesia Option

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>8200:640</td>
<td>Scientific Components of Nurse Anesthesia</td>
<td>3</td>
</tr>
<tr>
<td>8200:641</td>
<td>Pharmacology for Nurse Anesthesia I</td>
<td>3</td>
</tr>
<tr>
<td>8200:642</td>
<td>Introduction to Nurse Anesthesia</td>
<td>2</td>
</tr>
<tr>
<td>8200:643</td>
<td>Principles of Anesthesia I</td>
<td>4</td>
</tr>
<tr>
<td>8200:644</td>
<td>Pharmacology for Nurse Anesthesia II</td>
<td>3</td>
</tr>
<tr>
<td>8200:645</td>
<td>Principles of Anesthesia II</td>
<td>4</td>
</tr>
<tr>
<td>8200:647</td>
<td>Professional Role Seminar</td>
<td>2</td>
</tr>
</tbody>
</table>

### Child and Adolescent Health Nurse Practitioner (Primary Care)

The Child and Adolescent Health Nurse Practitioner (Primary Care) (45 credit hours) meets certification requirements through the American Nurses Credentialing Center (ANCC) and the Pediatric Nurse Practitioner (PCPN) National Board of Certification (PCBP/N). Emphasis is on the primary health care needs of children and adolescents.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>7400:585</td>
<td>Nutrition for Pediatric Nurse Practitioners</td>
<td>2</td>
</tr>
<tr>
<td>8200:650</td>
<td>Pediatric/Adolescent Assessment</td>
<td>3</td>
</tr>
<tr>
<td>8200:651</td>
<td>Child and Adolescent Health Nursing I</td>
<td>3</td>
</tr>
<tr>
<td>8200:652</td>
<td>Child and Adolescent Health Nursing I Practicum</td>
<td>2</td>
</tr>
<tr>
<td>8200:653</td>
<td>Child and Adolescent Health Nursing II Practicum</td>
<td>2</td>
</tr>
<tr>
<td>8200:654</td>
<td>Child and Adolescent Health Nursing III Practicum</td>
<td>2</td>
</tr>
<tr>
<td>8200:655</td>
<td>Child and Adolescent Health Nursing II</td>
<td>3</td>
</tr>
<tr>
<td>8200:656</td>
<td>Pharmacology for Child and Adolescent Health Nursing</td>
<td>3</td>
</tr>
<tr>
<td>8200:657</td>
<td>Child and Adolescent Health Nursing III</td>
<td>3</td>
</tr>
<tr>
<td>8200:658</td>
<td>Child and Adolescent Health Nursing IV Practicum</td>
<td>2</td>
</tr>
<tr>
<td>8200:680</td>
<td>Child and Adolescent Health Nursing IV</td>
<td>3</td>
</tr>
</tbody>
</table>

### Child and Adolescent Health Nurse Practitioner (Acute Care)

The Child and Adolescent Health Nurse Practitioner (Acute Care) (65 credit hours) meets certification requirements through the American Nurses Credentialing Center (ANCC) and the Pediatric Nurse Practitioner (PCPN). 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.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>7400:585</td>
<td>Nutrition for Pediatric Nurse Practitioners</td>
<td>2</td>
</tr>
<tr>
<td>8200:650</td>
<td>Pediatric/Adolescent Assessment</td>
<td>3</td>
</tr>
<tr>
<td>8200:651</td>
<td>Child and Adolescent Health Nursing I</td>
<td>3</td>
</tr>
<tr>
<td>8200:652</td>
<td>Child and Adolescent Health Nursing I Practicum</td>
<td>2</td>
</tr>
<tr>
<td>8200:653</td>
<td>Child and Adolescent Health Nursing II Practicum</td>
<td>2</td>
</tr>
<tr>
<td>8200:654</td>
<td>Child and Adolescent Health Nursing III Practicum</td>
<td>2</td>
</tr>
<tr>
<td>8200:655</td>
<td>Child and Adolescent Health Nursing II</td>
<td>3</td>
</tr>
<tr>
<td>8200:656</td>
<td>Pharmacology for Child and Adolescent Health Nursing</td>
<td>3</td>
</tr>
<tr>
<td>8200:657</td>
<td>Child and Adolescent Health Nursing III</td>
<td>3</td>
</tr>
<tr>
<td>8200:658</td>
<td>Child and Adolescent Health Nursing IV Practicum</td>
<td>2</td>
</tr>
<tr>
<td>8200:680</td>
<td>Child and Adolescent Health Nursing IV</td>
<td>3</td>
</tr>
</tbody>
</table>

### Psychiatric Mental Health Nursing

Psychiatric Mental Health Nursing Track (ACU credit hours and meets eligibility requirements for certification through American Nurses Credentialing Center (ANCC) as a psychiatric clinical nurse specialist or psychiatric nurse practitioner.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>8200:611</td>
<td>Advanced Mental Health Assessment</td>
<td>3</td>
</tr>
<tr>
<td>8200:610</td>
<td>Advanced Adult/Gerontological Assessment with Psychiatric Mental Health</td>
<td>3</td>
</tr>
<tr>
<td>8200:660</td>
<td>Psychiatric Mental Health, APN I Practicum</td>
<td>3</td>
</tr>
<tr>
<td>8200:661</td>
<td>Psychiatric Mental Health, APN II Practicum</td>
<td>3</td>
</tr>
<tr>
<td>8200:662</td>
<td>Clinical Psychopharmacology</td>
<td>3</td>
</tr>
<tr>
<td>8200:663</td>
<td>Psychiatric Mental Health APN Internship (selective only)</td>
<td>1-4</td>
</tr>
<tr>
<td>8200:664</td>
<td>Psychiatric Mental Health-Acute, APN II Practicum</td>
<td>2</td>
</tr>
</tbody>
</table>

### Functional Role Courses

Courses are selected by students based upon area of specialty. (*) Anesthesia students take 8200:651 and 8200:652.
8200.665 Psychiatric Mental Health-Acute, APN II  3
8200.667 Psychiatric Mental Health-Chronic, APN III  3
8200.668 Psychiatric Mental Health-Chronic, APN III Practicum  2
8200.669 Psychiatric Mental Health-Chronic, APN IV Practicum  2
8200.670 Psychiatric Mental Health-Chronic, APN IV  3

• Psychiatric Family Nurse Practitioner
The Psychiatric Family Nurse Practitioner track (38-42 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 (FPMHNP).

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  3
8200.668 Psychiatric Mental Health-Chronic, APN III Practicum  2
8200.669 Psychiatric Mental Health-Chronic, APN IV Practicum  2
8200.670 Psychiatric Mental Health-Chronic, APN IV  3

Additional courses from existing programs:
8200.660 Advanced Pediatric/Adolescent Assessment  3
8200.663 Psychiatric Mental Health APN Internship  1-4
5600.648 Individual and Family Development Across the Lifespan  3
5600.660 Counseling Children  3

• Adult Gerontological Health Nursing Clinical Nurse Specialist Track (39 credits)
Meets eligibility requirements for certification through American Nurses Credentialing Center (ANCC) or Clinical Nurse Specialist in selected areas.
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 Track (47 credits and meets eligibility requirements for certification through American Nurses Credentialing Center (ANCC) and American Academy of Nurse Practitioners [AANP])
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
8200.623 Adult/Gerontological Health Nursing Practicum  2
8200.624 Adult/Gerontological Health Nursing NP IV  1
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
8200.690 Clinical Management I  3
8200.692 Clinical Management II  3
8200.694 Clinical Management III  3

Advanced Role Option
• Nursing Administration (36 credits)
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

1Cognate electives may be substituted for 8200.608 in the Administration option

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 coursework 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 anesthetist 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

Curriculum
• 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  3
8200.618 Inquiry II  3

• Additional Courses:
8200.612 Advanced Clinical Pharmacology  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
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 1930 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 related materials and processes. The College is involved principally in graduate level education (M.S. and Ph.D.), its students are taught the skills of research by the faculty, occasionally assisted by visiting scientists, and post-doctoral associates.

- The involvement of the College faculty, students and associated staff in research provides a further purpose, i.e., to develop and disseminate knowledge of the fundamental science of polymers and polymer processing (including reactive processing), solid state structure/morphology and properties of polymers as related to process history as well as polymer 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
Admissions to the graduate program in the college are 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 2.75/4.0 or better are admissible. Students holding a degree in biology or natural sciences usually need additional courses on the undergraduate level in physics, physical and analytical chemistry. For such students, a special non-degree admission may be given for one or two semesters, followed by a full admission upon a student’s successful completion of the remedial undergraduate courses. All applications must be supported by at least one letter of recommendation from a teacher or supervisor that the candidate is able to handle independent scientific research. GRE scores are recommended with each application.

A student with a M.S. in the sciences from another university can be admitted to the Ph.D. program. Two letters of recommendation are required in such cases to be certain that the student is likely to be successful in doctoral research.

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 prerequisites for polymer engineering courses. For such students, depending upon their background, a special non-degree admission may be given followed by full admission upon successful completion of a series of required remedial courses. All applications must be supported with at least three letters of reference and submission of GRE general test scores is required.

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.

DOCTOR OF PHILOSOPHY
Students may pursue the Doctor of Philosophy degree in either Polymer Science or Polymer Engineering.

Doctor of Philosophy in Polymer Science
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 equivalents, 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 18 credits among the following core courses (2 credits each) in polymer science:
  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 18 credits of elective courses appropriate to each student’s area of interest.  
• Pass eight cumulative examinations which are given at monthly intervals during the academic year. The candidate is urged to begin these examinations early in the graduate program.  
• 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 public/departmental 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

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 700-level electives (9 credits):
  9841:651 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 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 9841:651 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
  4300:681 Advanced Engineering Materials 3
  4600:622 Continuum Mechanics 3
  9841:xxx 3
  9871:613 Polymer Science Laboratory 3
  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. 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 exam 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.

• All doctoral students are required to give a formal presentation on their research as part of the regular departmental seminar series, 9841:601, at least one time after the start of their fourth year of study.

• Each doctoral student who entered the program in 2006 or earlier must (1) pass a candidacy exam and (2) must present his/her research proposal for approval by the advisory committee within 18 months of successfully completing the Ph.D. qualifying exams.

• Each doctoral student who entered the program in 2007 or later 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.

**MASTERS’S DEGREE**

Students may pursue Master of Science degrees in either Polymer Science or Polymer Engineering.

**Master of Science in Polymer Science**

• 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; 613 polymer Science Laboratory; 631 Physical Properties of Polymers I; 634 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 competence in computer skills.
• At least 12 credits of graduate coursework and all thesis credits must be completed at the University.
• Pass one cumulative exam.

BS Natural Sciences-Polymer Chemistry/MS Polymer Science

In Northeast Ohio there is a growing demand for professionals trained in polymer chemistry. The polymer industry is one of the major industrial sectors of the economy of Ohio. The BS/MS Polymer Chemistry program was instituted to prepare students for jobs in this area. The program provides a quality undergraduate science degree coupled with a graduate degree from one of the premier polymer programs in the country.

Students who are admitted to this program can complete the undergraduate phase of the course of study in three years and then immediately begin graduate studies in polymer science. Under rare circumstances, a student can complete the undergraduate phase in four years after approval of his/her advisors. A student not proceeding to the graduate program in polymer science may complete the degree requirements for the BS Natural Sciences (Polymer Chemistry Concentration).

Students earn a bachelor’s degree in Natural Sciences from the Buchtel College of Arts and Sciences that is heavily weighted toward chemistry. They will be assigned an advisor in the Department of Chemistry and a co-advisor in the Department of Polymer Science, who will advise them throughout their undergraduate program. Once the undergraduate degree is completed students begin studies to earn a Master’s of Science from the College of Polymer Science and Polymer Engineering that will require two years of courses and research. The graduate degree requirements for the master’s portion of this accelerated program are the same requirements as those for the traditional master’s program in polymer science.

Master of Science in Polymer Engineering

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 3

• 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 Approved Mathematics 3
  4300:681 Advanced Engineering Materials 3
  4600:622 Continuum Mechanics 3
  9841:xxx 3
  9871:613 Polymer Science Laboratory 3
  9871:676 Polymer Structure and Characterization 2
  9871:675 Polymer Thermodynamics 2

• Thesis (6 credits):

  9841:699 Master’s Thesis 6

• Students will take a Basic Engineering exam after their 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 option or to take graduate level courses within one year from the date of the exam. Students for whom the master’s degree is a terminal degree may be exempted from taking remedial courses with the approval of his/her advisor and the department chair. 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.

  • Each candidate must pass an oral examination in defense of the thesis.
  • Submit the written master’s thesis to the Graduate School by the required deadlines.

BS/MS Program in Applied Mathematics/Polymer Engineering

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 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 2
- 9841:650 Basic Engineering for Polymer Engineers 3
- 9841:661 Polymerization Reactor Engineering 3
- 9841:675 Seminar: Polymer Engineering** 1
- 9841:680 Polymer Engineering Laboratory 3
- 9841:676 Electives 3
- 9841:699 Master’s Thesis 3

*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.
Interdisciplinary and Certificate Programs of Study

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 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 – POST-MASTER’S
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
8200:691 Acute Care Nurse Practitioner I 4
8200:692 Clinical Management II 3
8200:693 Acute Care Nurse Practitioner II 4
8200:695 Acute Care Nurse Practitioner III 4
8200:696 Clinical Reasoning 1
Total 16

ADDITIONAL COURSES
8200:623 Adult/Gerontological Health Practicum NP 2
8200:629 Adult/Gerontological Health Nursing NP III Practicum 2
8200:628 Adult/Gerontological Health Nursing NP II Practicum 2
8200:627 Adult/Gerontological Health Nursing CNS Practicum 1
8200:679 Adult/Gerontological Health Nursing CNS IV Practicum 3
8200:636 Adult/Gerontological Health Nursing CNS Residency 2-4
Total 10-12

ADULT/GERONTOLOGICAL HEALTH NURSING CLINICAL NURSE SPECIALIST – POST-MSN
The Post-MSN certificate program of 10-12 credit hours is designed for those nurses with a Master’s Degree in Nursing who want to complete the additional coursework required to sit for national certification as a Clinical Nurse Specialist in Medical/Surgical Nursing or Gerontological Nursing. The Post-MSN Adult/Gerontological Health Nursing CNS Certificate Program prepares nurses to assume advanced practice positions in a variety of complex health systems environments providing leadership in interdisciplinary care. Post MSN students who do not have a clinical master’s degree will be assessed on an individual basis and may be required to take additional clinical coursework to achieve competencies required to be eligible to sit for certification.

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

ADULT/GERONTOLOGICAL NURSE PRACTITIONER – POST-MSN
The Post-MSN certificate program is designed to prepare Adult/Gerontological Clinical Nurse Specialists who are seeking preparation in the role of nurse practitioner as providers of primary health care to adults and older adults. Upon completion of the 18 credit program, the student is eligible to sit for Nurse Practitioner certification examination.

Admission Criteria
Ohio RN licensure.
Hold an MSN degree from a professionally accredited nursing program (clinical master’s preferred).
Have a minimum GPA of 3.0 on a 4.0 scale for MSN program.
Minimum of 2-3 years recent clinical experience in adult or gerontological health care.
Complete an application to The University of Akron Graduate School.
Submit a 300 word essay describing professional goals.
Submit a resume outlining prior education and work related experiences.
Complete the following prerequisite courses: graduate level pathophysiology, advanced assessment, advanced clinical pharmacology.
Completion of an interview with the Adult/Gerontological Health Nursing faculty.

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 2
ADVANCED CERTIFICATE IN FAMILY CONFLICT AT THE CENTER FOR CONFLICT MANAGEMENT

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 two)*:
  - 3850:523 Sociology of Women 3
  - 3850:528 Victim in Society 3
  - 3700:690 Special Topics (conflict related) 1-3
  - 9200:638** Family Law 3
  - 9200:684** Alternative Dispute Resolution 3

*Law School classes are offered on a space available basis and require the permission of instructor

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

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

*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

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:

- Clinical Management I 3
- Clinical Management II 3
- Clinical Management III 3

**Total credit hours 17

APPLIED POLITICS

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/administrator 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
- 5700:625 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
- 3700:573 Political Opinion, Behavior and Electoral Policies 3
- 3700:577 Lobbying 3
- 3700:656 Campaign and Election Law 3
- 7600:575 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

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.

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 course work to satisfy the language requirement by completing two years of an Asian language course work.
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
3560:101 Beginning Japanese 4
3560:102 Beginning Japanese II 4
3560:201 Intermediate Japanese 3
3560:202 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 4
3400:640 Reading Seminar: China 4
7100:501 Special Topics** 3* Field Studies in Geology 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 land 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
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.

7400:581 Case Management for Children and Families I 3
7400:582 Case Management for Children and Families II 3
7400:583 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
7400:665 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 – POST-MSN
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/Adelescente 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
8200:652 Child and Adolescent Health Nursing I Practicum 2
8200:655 Child and Adolescent Health Nursing II 3
8200:653 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

Total 17

CHILD AND ADOLESCENT HEALTH NURSE PRACTITIONER – POST-MSN
The Post-MSN Child and Adolescent Health Nurse Practitioner certificate program is designed for those pediatric nurses who hold the MSN and are seeking preparation as pediatric acute care nurse practitioners. Post MSN students will be assessed on an individual basis and may be required to complete additional courses from the Child and Adolescent Health Nursing track in order to achieve the competencies required to sit for certification as a pediatric acute care nurse practitioner.

CAH Post-MSN Prerequisite Courses:
7400:585 Nutrition for the Pediatric Nurse Practitioner 2
8200:650 Advanced Pediatric/Adelescent Assessment 3
8200:656 Pharmacology for Child and Adolescent Health Nursing 3

CAH Post-MSN Certificate Program Courses:
8200:685 CAH Acute Care Ill 3
8200:686 CAH Acute Care Ill Practicum 2
8200:687 CAH Acute Care IV 3
8200:688 CAH Acute Care IV Practicum 2
8200:658 Child and Adolescent Health NP Residency (required) 1-4

Total 11-14

*One credit hour requires five hours of supervised clinical practice. Students may be required to complete additional acute care clinical hours to achieve required competencies to sit for certification and the CAH NP Residency.

COMPOSITION
Lance Svehla, Ph.D., Coordinator

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 and 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:
3300:673 Theory of Rhetoric 3
3300:674 Research Methodologies in Composition 3

Optional Courses:
3300:570 History of English Language 3
3300:572 U.S. Dialects: Black and White 3
3300:589 Seminar in English: Grammatical Structures of Modern English 3
3300:575 Theory of Rhetoric 3
**DIVORCE MEDIATION**

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 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 permission 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:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1800:601</td>
<td>Divorce Mediation</td>
<td>3</td>
</tr>
<tr>
<td>1800:602</td>
<td>Divorce Mediation Practicum</td>
<td>2</td>
</tr>
</tbody>
</table>

**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
  - 7400:607 Family Dynamics | 3

**Electives:**

Students who have already completed coursework in Law, Accounting or Family may select from courses listed below:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>5600:647</td>
<td>Career Counseling</td>
<td>3</td>
</tr>
<tr>
<td>5600:669</td>
<td>Systems Theory in Family Therapy</td>
<td>3</td>
</tr>
<tr>
<td>7400:540</td>
<td>Family Crisis</td>
<td>3</td>
</tr>
<tr>
<td>7400:590</td>
<td>W. Family and Divorce</td>
<td>2</td>
</tr>
<tr>
<td>7400:602</td>
<td>Family in Life-Span Perspective</td>
<td>3</td>
</tr>
<tr>
<td>9200:684</td>
<td>Alternate Dispute Resolution</td>
<td>3</td>
</tr>
</tbody>
</table>

## E-BUSINESS

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 opportunities on the internet. Persons are eligible for admission to the graduate program as blogs, wikis, and mashups. These technologies have also opened up new opportunities on the internet. Persons are eligible for admission to the graduate program as blog, wiki, and mashup creators. These technologies have also opened up new opportunities on the internet. Persons are eligible for admission to the graduate program as blogging, wiki, and mashup creators.

**Required Courses:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>6500:608</td>
<td>Entrepreneurship</td>
<td>3</td>
</tr>
<tr>
<td>6500:644</td>
<td>Knowledge Management and Business Intelligence</td>
<td>3</td>
</tr>
<tr>
<td>6600:690</td>
<td>Marketing Concepts</td>
<td>3</td>
</tr>
<tr>
<td>6600:635</td>
<td>E-Business Marketing Strategies and Tactics</td>
<td>3</td>
</tr>
</tbody>
</table>

**Choose one of the following:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>6500:665</td>
<td>Management of Technology</td>
<td>3</td>
</tr>
<tr>
<td>6500:663</td>
<td>Data Analysis for Managers</td>
<td>3</td>
</tr>
<tr>
<td>6600:645</td>
<td>Innovative Marketing Strategies</td>
<td>3</td>
</tr>
<tr>
<td>6600:630</td>
<td>Marketing of Services</td>
<td>3</td>
</tr>
</tbody>
</table>

## E-LEARNING

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.

**Admission**

All applicants to the program should have previously earned a Bachelor’s degree. Applicants wishing to pursue a Master’s degree in Educational Foundations emphasizing Instructional Technology must apply to the Graduate School for admission into the program. Applicants wishing to pursue only the certificate program must apply to the graduate school for admission as a non-degree student.

**Requirements (16 credits):**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>5100:529</td>
<td>e-Learning Fundamentals</td>
<td>1</td>
</tr>
<tr>
<td>5100:630</td>
<td>Topical Seminar: Advanced Multimedia</td>
<td>3</td>
</tr>
<tr>
<td>5100:631</td>
<td>Instructional Design</td>
<td>3</td>
</tr>
<tr>
<td>5100:632</td>
<td>Web-based Learning Systems</td>
<td>3</td>
</tr>
<tr>
<td>5100:639</td>
<td>Strategies for Online Instruction</td>
<td>3</td>
</tr>
<tr>
<td>5100:696</td>
<td>Technology Project</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total** | 16

## ENVIRONMENTAL ENGINEERING

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 the following five of the following courses:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>4300:523</td>
<td>Chemistry for Environmental Engineers</td>
<td>3</td>
</tr>
<tr>
<td>4300:526</td>
<td>Environmental Engineering Design</td>
<td>3</td>
</tr>
<tr>
<td>4300:527</td>
<td>Water Quality Modeling and Management</td>
<td>3</td>
</tr>
<tr>
<td>4300:523</td>
<td>Physical/Chemical Treatment Processes</td>
<td>3</td>
</tr>
<tr>
<td>4300:624</td>
<td>Biological Wastewater Treatment Processes</td>
<td>3</td>
</tr>
<tr>
<td>4300:631</td>
<td>Soil Remediation</td>
<td>3</td>
</tr>
</tbody>
</table>

## ENVIRONMENTAL STUDIES

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):**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>3370:580</td>
<td>Seminar in Environmental Studies</td>
<td>2</td>
</tr>
</tbody>
</table>

(may be repeated as an elective)
Electives (minimum of 14 credits):

- 3100:500 Food Plants
- 3100:521 Tropical Field Biology
- 3100:526 Wetland Ecology
- 3100:660 Environmental Physiology
- 3100:624 Advanced Aquatic Ecology
- 3350:505 Geographic Information Systems
- 3350:507 Advanced Geographic Information Systems
- 3350:547 Remote Sensing
- 3350:549 Advanced Remote Sensing
- 3350:596 Soil and Water Field Studies
- 3370:511 Glacial Geology
- 3370:570 Geochemistry
- 3370:574 Groundwater Hydrology
- 3370:580 Seminar in Environmental Studies
- 3370:661 Geologic Record of Past Global Change
- 3370:674 Advanced Groundwater Hydrology
- 3400:571 American Environmental History
- 3470:561 Applied Statistics I
- 3700:512 Global Environmental Politics
- 3850:686 Population
- 4200:563 Pollution Control
- 4200:750 Advanced Pollution Control
- 4300:523 Chemistry for Environmental Engineers
- 4300:528 Environmental Engineering Design
- 4300:527 Water Quality Modeling and Management
- 4300:528 Hazardous and Solid Wastes
- 4300:620 Sanitary Engineering Problems
- 4300:621 Environmental Engineering Principles
- 4300:631 Soil Remediation
- 4300:731 Bioremediation
- 9000:661 Environmental Law

FAMILY NURSE PRACTITIONER CERTIFICATE FOR CERTIFIED PNP s - POST-MSN

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-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
- 8200:602 Advanced Adult/Gerontological Assessment/FNP
- 8200:612 Advanced Clinical Pharmacology (or equivalent)

Required Courses:

- 8200:620 Adult/Gerontological Health Nursing NP I
- 8200:622 Adult/Gerontological Health Nursing NP II
- 8200:625 Primary Care of the OB Patient for the Family Nurse Practitioner
- 8200:690 Clinical Management I
- 8200:692 Clinical Management II
- 8200:694 Clinical Management III
- 8200:626 Adult/Gerontological NP Residency (consisting of 225-300 clinical hours)

GRADUATE CERTIFICATE IN GENDER CONFLICT AT THE CENTER FOR CONFLICT MANAGEMENT

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
- 3850:547 Sociology of Sex and Gender

Electives:

- 3700:502 Politics and the Media
- 3700:622 Seminar in Alternatives to Violence at Home and Abroad
- 3850:646 Social Inequalities
- 3850:510 Social Structures and Personality
- 3850:541 Sociology of Law
- 3850:555 Family Violence
- 3850:753 ST. Gender and Crime
- 3230:516 Anthropology of Sex and Gender
- 3230:563 Social Anthropology
- 3300:589 Seminar in English: Subversive Women
- 3300:589 Seminar in English: British Women Writers
- 3400:593 Special Studies: Women, Film, and History
- 3400:669 Reading Seminar in American History Since 1877 (US Women’s History)

GRADUATE CERTIFICATE IN CROSS-CULTURAL NEGOTIATION

South and East Asian Track

Conflict Core (6 credits):

- 5930:622 Alternatives to Violence at Home and Abroad
- 6600:575 Business Negotiations

Language Core (6 credits):

Complete second year Chinese or Japanese Language; or complete second 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):

- 3350:560 Economics of Developing Countries
- 3350:561 Principles of International Economics
- 3400:516 Modern India
- 3400:540 Women in Revolutionary China
- 3400:610 Graduate Reading Seminar:Comparative Studies: World Civilization
- 3700:610 Seminar in International Politics
- 3700:620 Seminar in Comparative Politics
- 3850:555 Family Violence
- 3850:521 Racial and Ethnic Relations
- 5500:590 China for Educators
- 6600:630 International Marketing Policies
- 7600:550 Communication in Conflict
- 7600:645 Intercultural Communication Theory
- 9200:684* Alternative Dispute Resolution
- 3700:695 Internship (Student Conference on Cross-Cultural Negotiation or related project involving language immersion with approval of Director)

*Law School classes are offered on a space availability basis only.

Middle Eastern Track

Conflict Core (6 credits):

- 3700:622 Alternatives to Violence at Home and Abroad
- 6600:575 Business Negotiations

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
- 3350:561 Principles of International Economics
- 3400:590 Special Studies in History: Ottoman State and Society 1300-1922
- 3400:610 Graduate Reading Seminar:Comparative Studies: World Civilization
- 3400:610 Graduate Reading Seminar: Orientalism and its Discontents: Critical Approaches to Middle Eastern Histories and Historiographies
- 3700:505 Politics of the Middle East
- 3700:610 Seminar in International Politics
- 3700:620 Seminar in Comparative Politics
- 3850:555 Family Violence
- 3850:521 Racial and Ethnic Relations
- 5500:590 China for Educators
- 6600:630 International Marketing Policies
- 7600:550 Communication in Conflict
- 7600:645 Intercultural Communication Theory
- 9200:684* Alternative Dispute Resolution
- 3700:695 Internship (Student Conference on Cross-Cultural Negotiation or related project involving language immersion with approval of Director)

*Law School classes are offered on a space availability basis only.

GRADUATE CERTIFICATE IN GEOGRAPHIC INFORMATION SCIENCES

Program

The geographic information sciences (GISci) 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 geography, 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 seek-
ers 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
- 3350:546 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

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

GERONTOLOGY

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.

The graduate curriculum committee of the Institute for Life-Span Development and Gerontology will overseer this certificate program and certify, through the director of the Institute, that all requirements of the certificate have been completed.

B.S./M.D. students may complete Practicum/Internship and electives from courses available from the Institute or the Office of Geriatric Medicine and Gerontology, NEOUCOM.

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 Lifespan 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:*
- 3350:586 Introduction to Healthcare Management 3
- 3350:589 Health Services Operations Management 3
- 3350:600 Health Services Systems Management 3

**Select a minimum of two courses. A student is required to take one of the electives outside the major or degree department. One credit workshop may be included as an elective, with permission.

HEALTHCARE MANAGEMENT

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 health-care 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:
- 6500:580 Introduction to Healthcare Management 3
- 6500:582 Health Services Operations Management 3
- 6600:603 Health Services Systems Management 3

Elective Courses (Choose six credits from the following):
- 6500:585 Special Topics in Health Services Administration 1-3
- 6500:686 Health Services Research Project 3
- 6500:688 Independent Study in Health Services Administration 1-3
- 3250:536 Health Economics 3
- 3850:615 Epidemiologic Methods in Health Research 3
- 3850:656 Sociology of Healthcare 3
- 4800:630 Biomedical Computing 3
- 6200:632 Fiscal Management in Nursing Administration 3
- 6500:602 Computer Techniques for Managers 3
- 6500:641 Database Systems 3
- 6600:650 Human Resource Systems for Managers 3
- 6600:663 Data Analysis for Managers 3
- 6600:675 Supply Chain Management 3
- 6800:663 Any course with the approval of the Director 3
HIGHER EDUCATION

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 students 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 option, 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
- 5190:515 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 Total 12

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

*The awarding of this certificate is not contingent upon completion of a degree program. Graduate certificate programs require a 3.00 grade point average.

HOME-BASED INTERVENTION THERAPY

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 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 practice in home-based intervention. It adds another dimension to the 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. Graduate students enrolled in the core courses at the 500 level will have an additional graduate level project.

Students will complete a minimum of 18 hours of graduate credits in core and elective coursework. In order to earn the interdisciplinary certificate in Home-Based Intervention, the student must complete the following requirements within six years after beginning the program.

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

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
- Developmental Theory
  - 3850:512 Socialization: Child to Adult 3
  - 7400:652 Family in Life-Span Perspective 3
  - 7400:605 Developmental Parent-Child Interactions (online) 3
  - 7400:610 Child Development Theories 3
- Therapeutic Theory
  - 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
  - 7750:552 Social Work and Mental Health 3
  - 7750:554 Social Work in Juvenile Justice 3

HUMAN RESOURCE MANAGEMENT

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.
Innovately manage a technology-driven enterprise. The members of the Advancement Councils of the two colleges. This graduate certification was developed by the College of Business Administration with the cooperation and designed to gain competitive advantage over their rivals. To respond to these needs of our enterprises with effective and efficient management of technology and innovation will be of utmost importance.

R. Ray Gehani, D.Eng., Ph.D., Director

Core Courses:
- 6500:600 Management and Organizational Behavior* 3
- 6500:650 Human Resource Systems for Managers 3
- 6500:651 Management of Organizational Transformation 3
- 6520:658 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

Program

Information system project portfolios consist of a combination of off shore 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 expertise in this area. 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, risk management, rapid application development (RAD), and implementation.

Required Courses:
- 6500:643 Systems Analysis and Design 3
- 6500:645 Software Development and Quality Assurance 3
- 6500:646 Enterprise Systems Implementation 3
- 6500:678 Project Management 3

Choose one of the following:
- 6500:640 IS and IT Governance 3
- 6500:641 Database Systems 3
- 6500:644 Knowledge Management and Business Intelligence 3
- 6500:651 Organizational Transformation 3

Total credit hours 15

LITERATURE

Hillary 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.

MIDDLE EASTERN STUDIES GRADUATE CERTIFICATE

Dr. Janet Klein, Director

Department of History, (330) 972-2562 or kleinj@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:

3200.101 Beginning Arabic 3
3200.102 Beginning Arabic II 3
3200.201 Intermediate Arabic 3
3200.202 Intermediate Arabic 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 the Director’s approval for study and courses required in Middle Eastern countries.

3200.501 Egyptology I* 3
3230.572 Selected Topics** 3
3400.589 Ottoman State and Society 3
3400.596 Selected Studies in the Middle East 3
3400.598 Race, Nation, and Class in the Middle East 3
3400.599 Women and Gender in the Middle East 3
3400.612 Graduate Reading Seminar: The Middle East 4
3700.506 Politics in the Middle East 3

* Only one ancient world course will count toward the certificate.
** Recent 500-level Selected Topics in the Department of Classical Studies, Anthropology and Archaeology have included “Cultures of the Arab World.”

Courses with comparative content are encouraged. Any course that has significant Middle-Eastern content (and for which the student has presented substantial written work on a Middle Eastern 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.
MOTION AND CONTROL SPECIALIZATION

All manufacturing processes involve motion and control which may range from simple use of pneumatic cylinders in robotics to coordinated motion and sequence control in assembly lines. The technology in motion and control grows and changes at a pace that makes systems of over five years old almost obsolete. The primary purpose of the Motion and Control Specialization certificate program is to provide the graduating engineers with a focused expertise in motion and control and to furnish the necessary tools in order to enable them to follow the changes in technology after graduation. In addition, the program will also serve the practicing engineers and life-long learners to come back to school and refresh their skills using the certificate program.

Persons interested in this program should contact the Department of Mechanical Engineering.

Admission:

To participate in the program, the student should be formally admitted to The University of Akron as a post-baccalaureate, undergraduate, graduate, or non-degree graduate student.

Requirements:

Students should successfully complete all three courses listed below.

- 4600:442/542 Industrial Automatic Control 3
- 4600:444/544 Robot, Design, Control and Application 3
- 4600:670 Integrated Flexible Manufacturing Systems * 3

* Undergraduate students must obtain permission to take this course.

NEW MEDIA TECHNOLOGIES

Cheryl Ward, Ph.D., Coordinator

All applicants to the program should have previously earned a bachelor’s degree. Applicants wishing to pursue a master’s degree in Educational Foundations emphasizing Instructional Technology must apply to the Graduate School for admission into the program. Applicants wishing to pursue only the certificate program must apply to the Graduate School for admission as a special non-degree student.

To receive the certificate in New Media Technologies, students are required to take 18 hours from the list of available electives.

Available Electives:

- 5100:590 Workshop: Instructional Technology* 3
- 5100:631 Instructional Design 3
- 5100:632 Web-Based Learning Systems 3
- 5100:633 Hypermedia 3
- 5100:634 Visual Literacy 3
- 5100:635 Emerging Technologies 3
- 5100:638 Topical Seminar: Advanced Multimedia (may be repeated for 6 hours) 3
- 7500:590 Workshops in Music Technology* 3
- 7600:516 New Media Writing 3
- 7600:517 New Media Production 3
- 7600:568 Nonlinear Editing 3
- 7600:590 Workshops in Communication* 3

* Workshops may be repeated for a total of 6 credit hours.

NURSE ANESTHESIA - POST MSN

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 (greater than 1200) 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):

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<th>Course</th>
<th>Title</th>
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<td>Residency I (Pediatrics and Obstetrics)</td>
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<tr>
<td>8200:646</td>
<td>Residency II (Cardiac, Thoracic, Cardiovascular, and Neurology)</td>
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<tr>
<td>8200:648</td>
<td>Residency III (Hepatic, Renal, Endocrine, Head &amp; Neck, Trauma, and Burns/Plastic Management)</td>
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<td>8200:649</td>
<td>Residency IV (Senior Seminar)</td>
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<td><strong>Total</strong></td>
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NURSING EDUCATION

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:

- 8200:681 Instructional Methods in Nursing Education 3
- 8200:682 Nursing Curriculum Development 3
- 8200:683 Evaluation in Nursing Education 3
- 8200:684 Practicum: The Academic Role of the Nurse Educator 3

PARENT AND FAMILY EDUCATION

Susan D. Witt, 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 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 post-baccalaureate, graduate or non-degree graduate student.

Contact the Coordinator of the program for requirements.

Requirements

- Core:
  - Students must 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.
  - 7400:596 Parent Education (online) 3
  - 7400:605 Developmental Parent-Child Interactions (online) 3
  - 7400:594 Practicum in Parent and Family Education 3

- Electives:
  - Students must successfully complete six credits of coursework selected from among the various departmental courses listed below. These credits shall be chosen from departments outside the student’s discipline.
  - 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
    - 7400:665 Development in Infancy and Early Childhood 3
  - Social Work
    - 7750:555 The Black Family 3
    - 7750:685 Social Work Practice: Family and Children 3
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 Pathophysiologlcal 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

*One credit hour requires five hours of supervised clinical practice. Students may be required to complete additional clinical hours to achieve required competencies to sit for certification.

PSYCHIATRIC FAMILY NURSE PRACTITIONER – POST-MSN
The Post-MSN Psychiatric Family Nurse Practitioner certificate program is designed to prepare advanced practice nurses certified as Psychiatric and Mental Health Nurse Practitioners with the competencies required to sit for national certification as a Family Psychiatric and Mental Health Nurse Practitioner. The 13 credit hour program that includes at least 500 hours of supervised practice is built upon a core of advanced assessment, pathophysiology, and advanced psychoneuroimmunology and the Psychiatric Mental Health Nurse Practitioner track.

Required Courses
5600:648 Individual and Family Development 3
5600:669 Systems Theory in Family Therapy 3

Elective Courses:
(Elective Courses are not required. If the Post MSN student wishes to take additional coursework, the following courses are recommended)
8200:608 Pathophysiologlcal Concepts 3
8200:610 Advanced Adult/Gerontological Assessment 3
8200:611 Advanced Mental Health Assessment 3

PUBLIC ADMINISTRATION AND URBAN STUDIES

Requirements
The certificates will require the successful completion of 15 graduate credits of defined coursework in a single content or issue area within either public administration or urban affairs. Upon completion of the coursework a certificate will be issued.

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 Policy 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

Interdisciplinary and Certificate Programs
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 Nonprofit 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
3980:643 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 Citizen 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

GRADUATE CERTIFICATE IN RACIAL CONFLICT AT THE CENTER FOR CONFLICT MANAGEMENT
An 18 credit graduate certificate that offers students the opportunity to intensively examine racial conflict from an interdisciplinary perspective.

Required Courses:
3700:522 Understanding Racial and Gender Conflict 3
3850:521 Racism and Ethnic Relations 3
Electives:
3700:502 Political 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, 1860-1877 4
Internship 3 credits from Sociology, Political Science, Anthropology, or History

SUPPLY CHAIN MANAGEMENT
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)
6500:533 Supply Chain Logistics Planning 3
6500:576 Supply Chain Sourcing 3
6500:656 Management of Global Supply Chain 3
6500:675 Supply Chain 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 Operations 3

TEACHING ENGLISH AS A SECOND LANGUAGE
Kenneth J. Pakenham, 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
3300:589 Seminar in English: Sociolinguistics** 2-3
5500:543 Techniques of Teaching English as a Second Language 4

1The 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
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 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
5400:523 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

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
- 4300:565 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
- 4300:666 Traffic Detection and Data Analysis 3

Total 15

WOMEN’S STUDIES

For information, contact Women's Studies, located in the Polsky Building 315B, (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.

Requirements (required 5-7)

- 1840:580 Feminist Theory 3
- 1840:589 Internship in Women’s Studies 1-4
- 1840:590 Workshop: Women’s Studies Lecture Series 3

Electives

Three classes selected from the Women’s Studies Coordinating Council-approved list of graduate level courses.

- 1840:585 Special Topics in Women’s Studies: Women, Minorities and Media 3
- 1840:585 Special Topics in Women’s Studies: Women, Poverty and Welfare 3
- 1840:585 Special Topics in Women’s Studies: Women as Survivors 3
- 1840:585 Special Topics in Women’s Studies: Worlds of Women 3
- 1840:593 Internship in Women’s Studies 1-4
- 1840:593 Individual Studies on Women 1-3
- 3200:550 ST in Ancient Culture: Women and Gender in Classical Antiquity 3
- 3230:572 Women in Antiquity 3
- 3230:583 American Women Poets 3
- 3230:585 The Anthropology of Sex and Gender 3
- 3300:589 Seminar in English: Twentieth Century Women Writers 3
- 3300:589 Seminar in English: Women and Film 3
- 3300:589 Seminar in English: Subversive Women 3
- 3300:589 Seminar in English: British Women Writers 3
- 3400:500 Women in Revolutionary China 3
- 3400:593 Special Studies: Women Film and History 4
- 3400:593 Special Studies: Women in the Middle East 3
- 3400:593 Special Studies: Medieval Women 3
- 3700:522 Understanding Racial and Gender Conflict 3
- 3750:574 Psychology of Women 4
- 3850:525 Sociology of Urban Life 3
- 3850:555 Family Violence 3
- 3850:639 Sociology of Gender 3
- 7100:501 Special Topics in History of Art: Women in Art 3
- 7200:585 Seminar: Women and Food 1-3
- 7600:508 Women, Minorities, and News 3
- 7750:511 Women's Issues in Social Work Practice 3
- 9200:654 Seminar: Feminist and Race Theory 3

or other classes as approved by Women’s Studies Graduate Coordinator for the certificate.
### SECTION 5. Graduate Courses

#### Course Numbering Index*

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<th>College of Education</th>
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<td>3300 Economics</td>
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<td>3490 Engineering Applied Mathematics</td>
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<td>College of Polymer Science and Polymer Engineering</td>
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<td>9871 Polymer Science</td>
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</table>

* 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:

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<tr>
<th>Code</th>
<th>Description</th>
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<td>500-699</td>
<td>Master's-level courses (also, 600-799 J.D.-level courses)</td>
</tr>
<tr>
<td>700-699</td>
<td>Doctoral-level courses</td>
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### Interdisciplinary Programs

**DIVORCE MEDIATION**

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<tr>
<td>602</td>
<td>DIVORCE MEDIATION PRACTICUM 2 credits</td>
</tr>
</tbody>
</table>

Prerequisite: 601. Practical application of divorce mediation procedures. Review of strategies and ethical considerations.

**HOME-BASED INTERVENTION THERAPY**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>503</td>
<td>HOME-BASED INTERVENTION THEORY 3 credits</td>
</tr>
</tbody>
</table>

Prerequisite: Admission to Certificate Program. Overview of home-based intervention to include philosophy and description of this programming as well as assessment of family, their home and community environment.

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>504</td>
<td>HOME-BASED INTERVENTION TECHNIQUES AND PRACTICE 3 credits</td>
</tr>
</tbody>
</table>

Prerequisite: 503. Provides intervention techniques and skill areas required for home-based intervention and learning opportunities for matching techniques with specific family problems.

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
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<tbody>
<tr>
<td>505</td>
<td>HOME-BASED INTERVENTION INTERNSHIP</td>
</tr>
</tbody>
</table>

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.

**WOMEN'S STUDIES**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>580</td>
<td>FEMINIST THEORY 3 credits</td>
</tr>
</tbody>
</table>

A summary of feminist theory to familiarize students with the main currents in contemporary feminist theory and the origins and evolution of that thought.

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>585</td>
<td>SPECIAL TOPICS IN WOMEN'S STUDIES 1-3 credits</td>
</tr>
</tbody>
</table>

(May be repeated.) Specialized topics and current issues in Women's Studies. Covers content and issues not currently addressed in other academic courses. Emphasizes will be on original source materials, critical analyses and the synthesis of empirical and theoretical aspects.

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>589</td>
<td>INTERNSHIP IN WOMEN'S STUDIES 1-4 credits</td>
</tr>
</tbody>
</table>

(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.

<table>
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<tr>
<th>Code</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>590</td>
<td>WORKSHOP 1-3 credits</td>
</tr>
</tbody>
</table>

(May be repeated.) Group experiential study of special issues in Women's Studies.

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>593</td>
<td>INDIVIDUAL STUDIES ON WOMEN 1-3 credits</td>
</tr>
</tbody>
</table>

(May be repeated.) Directed study of selected topics related to women. Projects are chosen by students in consultation with instructor and approval of Director of Women's Studies.

**COOPERATIVE EDUCATION**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>501</td>
<td>COOPERATIVE EDUCATION 0 credits</td>
</tr>
</tbody>
</table>

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.

**INSTITUTE FOR LIFE-SPAN DEVELOPMENT & GERONTOLOGY**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>680</td>
<td>INTERDISCIPLINARY SEMINAR IN LIFE-SPAN DEVELOPMENT AND GERONTOLOGY 3 credits</td>
</tr>
</tbody>
</table>

Prerequisite: permission. The certificate program student only. Explores interdisciplinary issues in life-span development and gerontology. Guest speakers from various disciplines and services which have life-span development and gerontological components and from government and community facilities and services.

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>685</td>
<td>SPECIAL TOPICS 1-3 credits</td>
</tr>
</tbody>
</table>

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 the synthesis of empirical, theoretical and applied aspects.

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>686</td>
<td>RETIREMENT SPECIALIST 2 credits</td>
</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>690</td>
<td>WORKSHOP 1-3 credits</td>
</tr>
</tbody>
</table>

(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 required courses.

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>695</td>
<td>PRACTICUM IN LIFE-SPAN DEVELOPMENT AND GERONTOLOGY 3 credits</td>
</tr>
</tbody>
</table>

Prerequisite: permission. Supervised experience in research or community agency work.
4 credits

512 ADVANCED ECOLOGY
Advanced study of the ecology of individuals, populations, communities, and conservation/applied ecology. Active participation/discussion of primary literature in ecology is required.

518 FIELD ECOLOGY
Introduction to sampling methods, design of experiments and observations, and computer analysis; some local natural history. Laboratory.

521 TROPICAL FIELD BIOLOGY
Ecology of coral reefs, tide pools, mangroves, intertidal zones, terrestrial flora and fauna, island biogeography. Taught at a field station in the tropics.

522 CONSERVATION BIOLOGY
Explores the factors affecting survival of biodiversity and how to develop practical approaches to resolve complicated conservation issues.

523 POPULATION BIOLOGY
Discussion of animal and plant ecology and evolutionary biology from a species and population level perspective. Includes topics in population ecology and population genetics.

526 WETLAND ECOLOGY
Wetland ecology; principles and conservation. Field studies will be conducted at Beth Nature Preserve. Laboratory. Field trips involved; minor transportation costs.

527 LIMNOLOGY
This course explores the diversity of aquatic life and key biotic characteristics of freshwater ecosystems with an emphasis on the Great Lakes. Includes field trips.

528 BIOLOGY OF BEHAVIOR
Biological basis of behavior: ethological theory; function, causation, evolution and adaptiveness of behavior. May be taken without 429/529.

529 BIOLOGY OF BEHAVIOR LABORATORY
Individualized, directed study to provide the student with firsthand experience in observing, describing and interpreting animal behavior.

530 COMMUNITY/ECOSYSTEM ECOLOGY
History of the ecosystem concept; components, processes, and dynamics of communities and ecosystems; analysis and synthesis of ecosystem experiments. Laboratory.

533 PATHOGENIC BACTERIOLOGY
Study of major groups of bacteria which produce infections in humans. Biochemical properties of microorganisms which engender virulence and or host resistance. Laboratory.

537 IMMUNOLOGY
Nature of antigen, antibody response, and antigen-antibody reactions. Site and mechanism of antibody formation, hypersensitivity, immunologic tolerance and immune diseases considered. Laboratory.

538 ADVANCED IMMUNOLOGY
Immunology is studied from a historical and current perspective. Topics include T cells, B cells, antigen presentation, HIV, and transplantation.

540 MYCOLOGY
Structure, life history, classification of representative fungi with an emphasis on the importance of fungi to humans. Laboratory.

543 PHYSIOLOGY
Examination of the major groups of algae with emphasis on life histories and their relationship to algal form and structure. Laboratory.

544 FIELD MARINE PHYSIOLOGY
Collection and identification of tropical marine algae on San Salvador Island, The Bahamas. Discussion of the characteristics and ecology of major groups of Caribbean algae. Laboratory.

551 GENERAL ENTOMOLOGY
Structure, physiology, life cycles, economic importance characteristics of orders and major families of insects. Laboratories parallel lectures.

557 INVERTEBRATE ZOOLOGY
Invertebrate groups, their classification, functional morphology, adaptive radiation and life history. A phylogenetic approach is used. Laboratories parallel lectures.

560 PARASTOLOGY
Principles of parasitism; host parasite interactions; important human and veterinary parasitic diseases; and control measures. Laboratories parallel lectures.

563 KRYTOHIOLOGY
Study of fish, incorporates aspects of evolution, anatomy, physiology, natural history, and commercial exploitation of fishes. Laboratory incorporates field-based exercises and fish taxidermy.

566 ORINTHOLOGY
Introduction to biology of birds; classification, anatomy, physiology, behavior, ecology, evolution, natural history and field identification. Laboratory. Field trips involved; minor transportation costs.

567 HERPETOLOGY
Survey of the diversity, ecology and evolution of amphibians and reptiles. Special emphasis is given to Ohio species. Laboratory.

568 VERTEBRATE ZOOLOGY
Biology of vertebrates, except birds - evolution, ecology, behavior, systematics and anatomy. Laboratory with field trips.

561.2 HUMAN PHYSIOLOGY
Detailed study of function of the human body with special emphasis on neuroanatomy, cardiovascular, respiratory, renal and endocrine physiology. Laboratory.

566 ADVANCED CARDIOVASCULAR PHYSIOLOGY
Study of biological mechanisms involved in heart attack, strokes, fluid balance, hypertension and heart disease. Controversial issues in each area will be examined and current research presented.

569 VERTEBRATE EMBRYOLOGY
Lectures focus on development of model vertebrate organisms and cellular and molecular mechanisms underlying animal development. Laboratory focuses on frog and chick development.

570 COMPARATIVE VERTEBRATE MORPHOLOGY
An introduction to the comparative morphology of major vertebrates. The laboratory consists of dissections of representative vertebrates.

568 THE PHYSIOLOGY OF REPRODUCTION
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
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
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
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
Study of mechanisms from physiology to behavioral of how stress influences body systems and signals. The latest research and experimental issues are discussed.

573 COMPARATIVE ANIMAL PHYSIOLOGY
Laboratory experiments in animal physiology (respiration, circulation, metabolism, osmoregulation). Presentation of results in scientific format and as oral reports.

580 MOLECULAR BIOLOGY
Fundamentals of molecular biology, including recombinant DNA technology, applications in biotechnology, medicine, and genetic engineering. Mechanisms of gene regulation.

581 ADVANCED GENETICS
Nature of the gene; genetic codes; hereditary determinants; mutagenesis and genes in population. Lecture and seminar.

582 NEUROBIOLOGY
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
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.

586 WORKSHOP IN BIOLOGY
May be repeated; Prerequisite: permission of instructor. Group studies of special topics in biology. May not be used to meet undergraduate or graduate major requirements in biology. May be used for elective credit only.

589 BIOLOGICAL PROBLEMS
1-2 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
Advanced studies of topics in ecology and evolution, including population genetics, coevolution, metapopulations, and conservation genetics. Lecture/discussion format.

604 TOPICS IN INTEGRATIVE BIOLOGY
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
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
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
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
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
Basic DNA techniques including extraction of DNA, cleavage of DNA and cloning. Laboratory.

626 TECHNIQUES IN MOLECULAR BIOLOGY
Discussion of current techniques in molecular biology such as microscopy, cell culture, gene expression, and protein analysis. Laboratory.

628 ADVANCED TOPICS IN BEHAVIOR
Prerequisites. 528 or equivalent. Advanced studies of topics in behavior, emphasizing current scientific literature.

651 ENTOMOLOGY
Prerequisite: Graduate standing in Biology. Exploration of the diversity and biology of insects and their relatives. Laboratories emphasize field exercises and a collection.

663 ADVANCED EXERCISE PHYSIOLOGY
Through lecture, reading, and critical analysis of current literature, physiologic mechanisms of exercise in animals will be explored.

663 HISTOLOGY, CELL BIOLOGY, AND INTRODUCTORY PATHOLOGY
This course integrates cell biology and histology to show how organs are structured and function and how they are altered during sample pathologies. Laboratory.

667 MEDICAL PHYSIOLOGY, PATHOPHYSIOLOGY, AND PHARMACOLOGY
Prerequisite: Admission to M.S.N. program, or 300:560, or consent of instructor. Selected principles of human physiology, pathophysiology, and pharmacology are examined in depth, interrogated, and related to the care of patients in the clinical setting.

671 DEVELOPMENTAL BIOLOGY
Study of the cell and molecular mechanisms underlying animal development. Laboratory.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>591</td>
<td>INTEGRATIVE STRESS PHYSIOLOGY</td>
<td>3</td>
</tr>
<tr>
<td>574</td>
<td>INTEGRATED CARDIOVASCULAR PHYSIOLOGY</td>
<td>3</td>
</tr>
<tr>
<td>675</td>
<td>INTEGRATIVE PHYSIOLOGICAL GENOMICS</td>
<td>4</td>
</tr>
<tr>
<td>676</td>
<td>INTEGRATIVE PHYSIOLOGY</td>
<td>3</td>
</tr>
<tr>
<td>681</td>
<td>CYTOLOGY</td>
<td>4</td>
</tr>
<tr>
<td>683</td>
<td>SELECTED TOPICS IN MICROBIOLOGY</td>
<td>3</td>
</tr>
<tr>
<td>685</td>
<td>ADVANCED CELL PHYSIOLOGY</td>
<td>3</td>
</tr>
<tr>
<td>688</td>
<td>PRINCIPLES OF TRANSMISSION ELECTRON MICROSCOPY</td>
<td>3</td>
</tr>
<tr>
<td>689</td>
<td>PRINCIPLES OF SCANNING ELECTRON MICROSCOPY</td>
<td>3</td>
</tr>
<tr>
<td>691</td>
<td>SPECIAL TOPICS: BIOLOGY/NEOUCOM</td>
<td>1-3</td>
</tr>
<tr>
<td>697</td>
<td>BIOLOGY COLLOQUIAN</td>
<td>1</td>
</tr>
<tr>
<td>713</td>
<td>SPECIAL TOPICS: PHYSICAL CHEMISTRY</td>
<td>1-3</td>
</tr>
<tr>
<td>711</td>
<td>SPECIAL TOPICS: INORGANIC CHEMISTRY</td>
<td>3</td>
</tr>
<tr>
<td>620</td>
<td>MAIN GROUP ORGANO METALICS</td>
<td>3</td>
</tr>
<tr>
<td>719</td>
<td>CHEMISTRY SEMINAR</td>
<td>1</td>
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<tr>
<td>629</td>
<td>PHYSICAL INORGANIC CHEMISTRY</td>
<td>3</td>
</tr>
<tr>
<td>630</td>
<td>THEORETICAL INORGANIC CHEMISTRY</td>
<td>2</td>
</tr>
<tr>
<td>631</td>
<td>METALS IN MEDICINE</td>
<td>3</td>
</tr>
<tr>
<td>635</td>
<td>THERMODYNAMICS AND STATISTICAL THERMODYNAMICS</td>
<td>3</td>
</tr>
<tr>
<td>636</td>
<td>CHEMICAL KINETICS</td>
<td>3</td>
</tr>
<tr>
<td>637</td>
<td>BIOLOGY/NEOUCOM</td>
<td>311:</td>
</tr>
<tr>
<td>638</td>
<td>HUMAN GROSS ANATOMY I</td>
<td>3</td>
</tr>
<tr>
<td>639</td>
<td>HUMAN GROSS ANATOMY II</td>
<td>3</td>
</tr>
<tr>
<td>695</td>
<td>SPECIAL TOPICS: BIOLOGY/NEOUCOM</td>
<td>3</td>
</tr>
<tr>
<td>501</td>
<td>BIOCHEMISTRY LECTURE I</td>
<td>3</td>
</tr>
<tr>
<td>502</td>
<td>BIOCHEMISTRY LECTURE II</td>
<td>3</td>
</tr>
<tr>
<td>520</td>
<td>BIOCHEMISTRY LECTURE II</td>
<td>3</td>
</tr>
<tr>
<td>572</td>
<td>ADVANCED INORGANIC CHEMISTRY</td>
<td>3</td>
</tr>
<tr>
<td>590</td>
<td>WORKSHOP</td>
<td>1-3</td>
</tr>
<tr>
<td>603</td>
<td>BIOCHEMISTRY LECTURE III</td>
<td>3</td>
</tr>
<tr>
<td>501-502</td>
<td>BASIC QUANTUM CHEMISTRY</td>
<td>3</td>
</tr>
<tr>
<td>505-506</td>
<td>SPECTROSCOPY</td>
<td>3</td>
</tr>
<tr>
<td>507-508</td>
<td>TRANSITION-METAL ORGANO METALLICS</td>
<td>3</td>
</tr>
<tr>
<td>509-510</td>
<td>MAIN GROUP ORGANO METALLICS</td>
<td>3</td>
</tr>
<tr>
<td>511-512</td>
<td>CHEMISTRY SEMINAR</td>
<td>1</td>
</tr>
<tr>
<td>513-514</td>
<td>PHYSICAL INORGANIC CHEMISTRY</td>
<td>3</td>
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<tr>
<td>515-516</td>
<td>THEORETICAL INORGANIC CHEMISTRY</td>
<td>2</td>
</tr>
<tr>
<td>517-518</td>
<td>METALS IN MEDICINE</td>
<td>3</td>
</tr>
<tr>
<td>519-520</td>
<td>THERMODYNAMICS AND STATISTICAL THERMODYANICS</td>
<td>3</td>
</tr>
<tr>
<td>521-522</td>
<td>CHEMICAL KINETICS</td>
<td>3</td>
</tr>
<tr>
<td>523-524</td>
<td>BIOLOGY/NEOUCOM</td>
<td>315:</td>
</tr>
<tr>
<td>525-526</td>
<td>HUMAN GROSS ANATOMY</td>
<td>3</td>
</tr>
<tr>
<td>527-528</td>
<td>SPECIAL TOPICS: BIOLOGY/NEOUCOM</td>
<td>3</td>
</tr>
<tr>
<td>529-530</td>
<td>SPECIAL TOPICS: PHYSICAL CHEMISTRY</td>
<td>3</td>
</tr>
<tr>
<td>531-532</td>
<td>SPECIAL TOPICS: BIOCHEMISTRY</td>
<td>3</td>
</tr>
<tr>
<td>533-534</td>
<td>ADVANCED BIOCHEMICAL TECHNIQUES</td>
<td>3</td>
</tr>
</tbody>
</table>

The table above lists various courses offered in the University of Akron's 2009-2010 academic year, categorized by their respective departments. Each course entry includes the course code, title, credits, and a brief description of the course content. The courses cover a wide range of topics from biochemistry, physiology, and inorganic chemistry to advanced topics in spectroscopy and biological techniques.
722 ENZYMATIC REACTIONS 3 credits
Prerequisites: 501, 502, graduate status or permission of department. Mechanisms of enzyme catalyzed reactions, general aspects and specific examples for phosphory, acyl, glycosyl transfers, eliminations, oxidation/reduction, isomerization and rearrangements. Chemistry of cofactors.

724 BIOINORGANIC CHEMISTRY 3 credits
Prerequisites: 510 and 502, graduate status or permission of department. Survey of the structure and properties of metal ion complexes with amino acids, nucleotides and macromolecules; metal ion metabolism; metals in medicine.

726 ADVANCED METABOLISM 3 credits
Prerequisites: 520 and 502, graduate status or permission of department. Study of advanced pathways in carbohydrate, lipid and protein metabolism with emphasis placed on metabolic dysfunction.

470 PHYSICAL ORGANIC CHEMISTRY 3 credits
Prerequisites: 683, 684, graduate status or permission of department. An advanced treatment of the theory and mechanisms of organic chemistry: FMO theory, molecular mechanics, molecular strain, kinetics, thermodynamics, acidity functions, linear free energy relationships.

750 ADVANCED SYNTHETIC ORGANIC CHEMISTRY 3 credits
Prerequisites: 683, 684, graduate status or permission of department. An advanced treatment of organic functional group manipulations in the context of the total synthesis of natural products.

889 DOCTORAL DISSERTATION 1-6 credits
Prerequisite: Graduate status or permission of department. Open to qualified student accepted as a candidate for Doctor of Philosophy in Chemistry. Supervised original research undertaken in organic, inorganic, physical, analytical or biochemistry.

CLASSICS 3200:

501 EGYPTOLOGY I 3 credits
The history and antiquities of ancient Egypt.

504 ASSYRIOLOGY 3 credits
Prerequisite: Permission (or directed credit with another cuneiform language) Prerequisite: permission of instructor. The Akkadian language.

5928 READING AND RESEARCH IN THE ANCIENT NEAR EAST 3 credits
Prerequisites: Permission of instructor. Advanced work in various aspects of Ancient Near Eastern Studies (Archaeology, Assyriology, Egyptology, etc.).

ANTHROPOLOGY 3230:

510 EVOLUTION AND HUMAN BEHAVIOR 3 credits
Prerequisite: Permission. Critical examination of the theory of natural selection and its usefulness for understanding the origins and evolution of early hominid and modern human social behavior.

516 ANTHROPOLOGY OF SEX AND GENDER 3 credits
Prerequisite: Permission. This course explores cross-cultural variation regarding sex, gender, and sexuality. It examines the ways that cultures create, maintain, and reproduce gender concepts and gender relations.

520 THE ANTHROPOLOGY OF FOOD 3 credits
Prerequisite: Permission. Utilizing anthropological approaches and theories, this course explores the social relations and cultural beliefs associated with food cross-culturally.

555 CULTURE AND PERSONALITY 3 credits
Prerequisite: Permission. Examination of functional and causal relationships between culture and individual cognition and behavior. Lecture.

557 MEDICAL ANTHROPOLOGY 3 credits
Prerequisite: Permission of instructor. Analyzes various aspects of Western and non-Western medical systems from an anthropological perspective. Compares traditional medical systems around the world.

560 QUALITATIVE METHODS: BASIS OF ANTHROPOLOGICAL RESEARCH 4 credits
Prerequisite: 150 or permission. Provides hands-on experience in qualitative methods, including interviewing, focus groups and other methods. Includes the use of computer-based programs for rapid appraisal strategies.

563 SOCIAL ANTHROPOLOGY 3 credits
Prerequisite: Permission. Comparative structural analysis of non-Western systems of kinship and social organization in terms of status, role, reciprocal expectation, nomenclature, nuclear and extended households and other kinship groupings. Lecture.

572 PEOPLES AND ANTIQUITY 3 credits
(May be repeated) Prerequisite: Permission. Designed to meet needs of student with interests in selected topics in anthropology. Offered irregularly when resources and opportunities permit. May include archaeological field school, laboratory research or advanced course work not presently offered by department on regular basis.

594 WORKSHOP IN ANTHROPOLOGY 3 credits
(May be repeated) Group studies of special topics in anthropology. May not be used to meet departmental undergraduate or graduate major requirements. May be used for elective credit.

651 SEMINAR IN ANTHROPOLOGICAL THEORIES AND METHODS 2 credits

697 INDIVIDUAL INVESTIGATION 1-3 credits
Prerequisites: permission of instructor and chair of department. Intensive reading and/or research in student’s chosen field of interest. Regular conferences with instructor. Preparation of a research paper.

ARCHAEOLOGY 3240:

500 ARCHAEOLOGICAL THEORY 3 credits
Prerequisite: Permission. Advanced seminar covering history of scientific archaeological thought, major theoretical paradigms, and current trends in archaeology. Required for Certificate in Field Archaeology.

510 ARCHAEOLOGICAL SURVEY 3 credits
Prerequisite: Permission. Advanced instruction in principles of subsurface geophysical survey techniques in archaeology. Emphasizes magnetic gradientometry and electrical resistivity techniques. Includes both laboratory and fieldwork.

520 ARCHAEOLOGY OF OHIO 3 credits
Prerequisite: Permission. Provides detailed overview of Ohio’s prehistoric cultures and the early historic period focusing on cultural evolution and environmental relationships.

540 ARCHAEOLOGICAL LABORATORY METHODS 3 credits
Prerequisite: Permission. Laboratory-based course teaching essentials of artifact documentation, handling and analysis. Focus on classification, statistics, conservation, illustration, lithics, ceramics, paleofaunal, paleobotanical remains and soils.

550 ARCHAEOLOGICAL FIELD SCHOOL 1-6 credits
Prerequisite: Permission. Field-based course teaching basic archaeological techniques: mapping, excavation of prehistoric and historic sites, survey and documentation. Repeatable for up to six credits.

572 SPECIAL TOPICS IN ARCHAEOLOGY 1-6 credits
Prerequisite: Permission. Design to meet the needs of students with interests in selected topics in archaeology. Offered irregularly when resources and opportunities permit. May include archaeological field school, laboratory research or advanced course work not presently offered by department on a regular basis. Repeatable for up to six credits.

ECONOMICS 3250:

506 STATE AND LOCAL PUBLIC FINANCE 3 credits
Prerequisite: Admission to the master’s program in Economics or permission. Examines economic rationale and problems for provision of goods and services by different governmental units. Considers alternative revenue sources and special topics.

523 APPLIED GAME THEORY 3 credits
Prerequisite: Permission. Admits to the master’s program in Economics or permission. Application of the basic concepts of game theory (analysis of strategic behavior) to relevant economic issues including bargaining, cartels, voting, conflict resolution, and non-competitive pricing.

527 ECONOMIC FORECASTING 3 credits
Prerequisite: Permission. Admits to the master’s program in Economics or permission. Study of methods for building, identifying, fitting, and checking dynamic economic models and the use of these models for forecasting. Emphasis is on the application of computer software systems.

530 LABOR MARKET AND SOCIAL POLICY 3 credits
Prerequisites: Permission to the master’s program in Economics or permission. Intensive study of current labor and social policy issues (e.g. discrimination, poverty, migration, education, demographic and labor market changes, impact of international trade on employment).

534 LABOR MARKET ANALYSIS AND EVALUATION 3 credits
Prerequisite: Admission to the master’s program in Economics or permission. Advanced labor market research using specialized techniques. Employment, health, education, and other current policy issues and programs analyzed and evaluated. Original research project required.

536 HEALTH ECONOMICS 3 credits
Prerequisite: Permission of instructor. Economic analysis of health care. Stresses health policy issues, includes study of demand and supply of medical services and insurance, analysis of how these factors influence health care industries.

538 ECONOMICS OF SPORTS 3 credits
Prerequisite: Permission of instructor. Sports franchises as profit maximizing firms; costs and benefits of a franchise to a city, labor markets in professional sports, the economics of college sports.

540 SPECIAL TOPICS: ECONOMICS 3 credits
Prerequisite: Permission. Opportunity to study special topics and current issues in economics.

560 ECONOMICS OF DEVELOPING COUNTRIES 3 credits
Prerequisite: Admission to the master’s program in Economics or permission. Basic problems of economic development. Theories of economic development, issues of political economy and institutions. Topics include poverty, population, migration, employment, finance, international trade, environment.

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: Permission to the master’s program in Economics or permission. Evolution of theory and method, relation of ideas of economists contemporary to conditions.

581 MONETARY AND BUDGETARY POLICY 3 credits
Prerequisites: Permission to the master’s program in Economics or permission. Control over currency and credit, policies of central banks and governments, United States Treasury and Federal Reserve Systems.

587 URBAN ECONOMICS: THEORY AND POLICY 3 credits
Prerequisite: Permission 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 1-3 credits
Prerequisite: Permission. 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.

600 FOUNDATIONS OF ECONOMIC ANALYSIS 3 credits
Prerequisite: graduate standing. Determination of national income, employment and price levels; aggregate consumption, investment and asset holding; decision problems faced by households and firms; Partial equilibrium and analysis of competition and monopoly equilibrium analysis. May not be substituted for 602, 603, 611, or applied toward the 30 graduate credits required for M.A. in economics.

603 MACROECONOMIC ANALYSIS I 3 credits
Construction of static macroeconomic models. Analysis predominantly in terms of comparative statics and relevant and relatively brief mention of dynamic models.

606 ECONOMICS OF THE PUBLIC SECTOR 3 credits

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: ECON 611 or permission. Examination of consumer behavior and of the firm. Determination of market price and total revenue, analysis of competitive and non-competitive markets. Includes related topics in labor, industrial relations, and public policy.

615 INDUSTRIAL ORGANIZATION 3 credits
Prerequisites: ECON 611 or permission. Examination of market structure and behavior. Includes analysis of market performance. Credit based on model and application of the monopoly, oligopoly, and imperfect competition models. Emphasis on efficient allocation of resources.

617 THE ECONOMICS OF REGULATION 3 credits
Prerequisite: ECON 611 or permission. Examines rationale, methods and success of government regulation of public utility, transportation and communications industries.
586 AUTOMOBILE GEOGRAPHY
This course examines the geography of the automobile and its role in American culture. Students will gain an understanding of the historical, social, and economic factors that have shaped the automobile industry and its impact on society.

516 SHAKESPEAREAN DRAMA
This course focuses on the plays of William Shakespeare, including his tragic, comic, and historical plays. Students will explore the Shakespearean era and its impact on modern English literature.

517 ECONOMIC DEVELOPMENT
This course examines the economic development of different regions and countries, focusing on factors such as economic growth, trade, and investment. Students will learn about the theories and policies of economic development.

518 ECONOMIC GROWTH AND DECAY
This course focuses on the economic growth and decay of different regions and countries, examining the factors that contribute to economic growth or decline. Students will learn about the theories and policies of economic growth and decay.

519 ECONOMIC POLICY
This course examines the role of government in the economy, focusing on the design and implementation of economic policies. Students will learn about the theories and practices of economic policy.

520 ECONOMIC HISTORY
This course focuses on the economic history of different regions and countries, examining the factors that have shaped their economic development. Students will learn about the theories and practices of economic history.

521 ECONOMIC IDEOLOGIES
This course examines the economic ideologies that have shaped the modern economy, including capitalism, socialism, and communism. Students will learn about the theories and practices of economic ideologies.

522 ECONOMIC INSTITUTIONS
This course focuses on the economic institutions that have shaped the modern economy, including businesses, corporations, and markets. Students will learn about the theories and practices of economic institutions.

523 ECONOMIC SYSTEMS
This course examines the economic systems of different regions and countries, focusing on factors such as economic growth, trade, and investment. Students will learn about the theories and practices of economic systems.

524 ECONOMIC ANALYSIS
This course focuses on the economic analysis of different regions and countries, examining the factors that contribute to economic growth or decline. Students will learn about the theories and practices of economic analysis.

525 ECONOMIC POLICY
This course examines the role of government in the economy, focusing on the design and implementation of economic policies. Students will learn about the theories and practices of economic policy.
**Graduate Courses**

**505 GEOREPORTING SYSTEMS**
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**
Prerequisite: GIS or permission. Advanced instruction in the theory and application of geographic information systems (GIS) including hands-on experience with both raster and vector GIS. Laboratory.

**509 ARCHAEOGEOGRAPHICAL SURVEY**
Prerequisite: Permission. Advanced instruction in subsurface geophysical survey techniques in archaeology. Emphasis on magnetic, gravity, and electrical resistivity techniques, image processing and geologic and archaeological interpretation.

**515 ENVIRONMENTAL PLANNING**
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**
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**
Study and analysis of transportation systems from a geographic perspective. Emphasis on transportation problems and issues, elements of transportation planning.

**524 MILITARY GEOGRAPHY**
Sole of geographic information in military operations and military history. Role played by geography in international conflicts.

**529 LAND USE PLANNING LAW**
Applied aspects of land use planning law in the United States and examine the political, economic, social and legal forces which have shaped existing land-use legislation.

**530 PRACTICAL APPROACHES TO PLANNING**
Introduction to the primary analytic techniques for small area demographic and economic analysis and projection.

**531 PLANNING ANALYSIS AND PROJECTION METHODS**
Application of GIS and other computer-based tools to the preparation, implementation and evaluation of comprehensive land use plans.

**532 HISTORY OF URBAN DESIGN AND PLANNING**
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.

**533 CARTOGRAPHY**
Theoretical and practical applications of cartographic principles used to design and produce maps for research reports, public presentations, publication, and other professional uses.

**534 GLOBAL POSITIONING SYSTEMS (GPS)**
Fundamentals of Global Positioning Systems (GPS), with emphasis on geographic and planning activities. Includes hands-on exercises.

**535 CARTOGRAPHIC THEORY AND DESIGN**
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.

**536 URBAN APPLICATIONS IN GIS**
Prerequisite: 505 or permission. Applications of GIS in the urban context, including methods used for analysis of population density gradients, migration, and accessibility.

**538 APPLICATIONS IN CARTOGRAPHY AND GEOGRAPHIC INFORMATION SYSTEMS**
Prerequisite: 505, 554, or permission. Application of analytic and presentation techniques from cartography and geographic information systems to practical problems in geographic and planning studies. Laboratory.

**539 GIS DATABASE DESIGN**
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.

**540 GIS PROGRAMMING AND CUSTOMIZATION**
Prerequisite: 505 or permission. Introduction to use of scripting languages for customizing the interface and extending the functionality of desktop GIS software.

**541 REMOTE SENSING**
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**
Prerequisite: 547 or permission. 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**
A study of planning concepts and techniques for developing countries, including growth and development, planning agencies, regional inequities and alternative approaches.

**552 POLITICAL GEOGRAPHY**
Principles and theory in contemporary domestic and international political geographies. Emphasis on the changing local and global patterns of electoral politics, security, and diplomacy.

**558 RESEARCH METHODS IN GEOGRAPHY AND PLANNING**
Prerequisite: permission. Advanced concepts and methodologies in geographic research. Emphasis on quantitative revolution in geographical analysis including multivariate methods and their application in professional practice and academic research. Laboratory.

**560 FACILITIES PLANNING**
Study of need, process and limitation of urban facilities planning. (May be repeated but only 3 credits may be applied for a total of six credits.)

**561 REGIONAL FIELD STUDIES**
Field work enabling student to become competent in collecting, organizing and analyzing data while carrying out field research projects. Field trips required.

**569 MASTER’S THESIS**
Original work in the field of literature and language and completion of graduate student’s required thesis.

**599 THESIS RESEARCH**
Independent and original work toward a thesis. (May be repeated for a total of six credits).
GEOLOGY 3370:

505 ARCHAEOLOGICAL GEOLOGY 3 credits (includes lab)
Prerequisite: Admission to the Geology master's program or permission. Provides background in geologic principles and techniques relevant to archaeologists. Topics include stratigraphy, absolute dating, pacing, assessment, zoozoanthropology, taphonomy, and remote sensing. Required lab and field trips.

507 ARCHAEOGEOPHYSICAL SURVEY 3 credits
Prerequisite: Admission to the Geology master's program or permission. Advanced introduction in subsurface geophysical techniques in archaeology. Emphasis on magnetic gradiometry and electrical resistivity techniques, image processing and geologic and archaeological interpretation.

510 REGIONAL GEOLOGY OF NORTH AMERICA 3 credits
Prerequisites: Admission to the Geology major's program or permission. Examination of provinces of North America emphasizing geology, 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 climatic effects. Laboratory. Field trips.

521 COASTAL GEOLOGY 3 credits
Prerequisite: Admission to the Geology major's program or permission. Study of the origins and evolution of coasts and coastal deposits with particular attention paid to the interaction of waves and currents with sediment, and the development of associated sedimentary features. Field trips.

525 PRINCIPLES OF SEDIMENTARY BASIN ANALYSIS 3 credits
Prerequisites: Admission to the Geology major's program or permission. Primarily the study of depositional systems, regional and global stratigraphic cycles, and sedimentation and plate tectonics.

532 OPTICAL MINERALOGY-INTRODUCTORY PETROGRAPHY 3 credits
Prerequisites: Admission to the Geology major's program or permission. Optical techniques for identification, characterization, and classification of minerals and rocks using the petrographic microscope. Laboratory. Field trips.

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. Field trips.

535 PETROLEUM GEOLOGY 3 credits
Prerequisite: Admission to the Geology major's program or permission. Natural occurrences of petroleum. Characteristics, origin, entrapment and exploration methods. Laboratory. Field trips.

536 COAL GEOLOGY 3 credits
Prerequisite: Admission to the Geology major's program or permission. Origin, composition, occurrence and composition of coal with emphasis on depositional environments, coalification processes, exploration, evaluation and exploitation. Laboratory. Field trips.

537 ECONOMIC GEOLOGY 3 credits
Prerequisite: 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, and geomagnetism. Contributions of geophysics to recent major developments in geoscience.

544 ENVIRONMENTAL MAGNETISM 3 credits
Prerequisite: Admission to the Geology major's program or permission. Introduction to the theory and methods of environmental magnetism and the application of environmental magnetism 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 exploration geophysics 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. A field/laboratory inquiry into a specific interdisciplinary, environmental science topic. Students complete a research project involving collecting, analyzing, and interpreting real world data. May be repeated for a maximum of six credit hours.

552 GEOLOGY AND ENVIRONMENTAL SCIENCE SERVICE LEARNING 1-3 credits
Graduate students gain experience as project managers for class projects by designing research plans, supervising data collection, lab analyses, and preparing final project reports.

553 KNOXFIELD FIELD CAMP I 1-3 credits
Prerequisite: Admission to the Geology major's program and permission. Introduction to collection and interpretation of field data and construction of geological maps.

554 GEOLOGY FIELD CAMP II 1-3 credits
Prerequisite: Permission of instructor. Field trip emphasizing descriptive aspects of geology readily studied in Ohio. Includes pre-trip preparation and post-trip examination. Student will bear the costs. (May be repeated for up to four credits)

562 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 general theory, speciation, evolution, development, and fossil scales. Laboratory.

563 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.

565 GEOMICROBIOLOGY 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.

570 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.

572 STABLE ISOTOPE GEOCHEMISTRY 3 credits
Prerequisites: Admission to the Geology program's major 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.

574 GROUNDWATER HYDROLOGY 3 credits
Prerequisite: Admission to the Geology program's major 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 four credits. Prerequisite: Graduate status. Discussion of specific environmental topics from an interdisciplinary viewpoint; resource persons are drawn from the University and the community.

581 ANALYTICAL METHODS IN GEOLOGY 2 credits
Prerequisites: Admission to the Geology program's major or permission. A survey of analytical methods used to solve geologic problems with emphasis on method selection, proper sample collection, analysis of data, and data presentation.

584 GEOSCIENCE INFORMATION ACQUISITION AND MANAGEMENT 2 credits
Prerequisite: Must be a Geology Department graduate student or senior major in geology, or have permission of instructor. Methods for finding, gathering, managing, and evaluating geoscience information. Emphasis on finding data sources (including electronic), creating valid data sets, visualizing data.

585 INDIVIDUAL READINGS IN GEOLOGY 1-4 credits
Prerequisite: permission of graduate advisor required. (May be repeated for a total of 8 credits; credits may not be used to meet degree requirements.) Directed reading to fit individual student programs. Credit/Noncredit.

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
Prerequisites: Admission to the Geology program's major or permission. Internship provides supervised professional experience in geology or geophysics. May only apply three credits toward minimum graduate requirements in Geology and Environmental Science.

631 ROCKS AND MINERALS 4 credits
Prerequisites: Admission to the Geology program's major or permission. Primarily the study of minerals and rocks with laboratory and field trips.

639 NUCLEAR GEOLOGY 3 credits
(two hour lecture, three hour laboratory) Prerequisites: minimum of seven credits in chemistry, eight credits in physics, eight credits in calculus and eight credits in geology or permission. Discusses nature of radioactive and stable isotopes, their applications in geology, radioactive minerals, radioactive background and disposal of radioactive wastes. Nuclear analytical techniques will also be discussed; lecture, laboratory and field study.

643 GEOSTATISTICS 3 credits
Prerequisite: Admission to the Geology program's major or permission. Application of statistical methods to geology and geophysics including tests of hypotheses, trend surface analysis, analysis of variance, nonparametric statistics and time series analysis.

655 ADVANCED FIELD STUDIES 1-3 credits
Prerequisite: Admission to the Geology program's major or permission. Study of the origins and evolution of coasts and coastal deposits with particular attention paid to the interaction of waves and currents with sediment, and the development of associated sedimentary features. Field trips.

661 GEOLOGIC RECORD OF PAST GLOBAL CHANGE 3 credits
Prerequisite: equivalent of baccalaureate degree in geology or permission of instructor. Study of the geologic record of past global climate and environmental change from geochronological, paleontological, sedimentological and other geological evidence.

674 ADVANCED GROUNDWATER HYDROLOGY 3 credits
Prerequisite: Admission to the Geology program's major or permission. Study of the occurrence and utilization of groundwater. Qualitative and quantitative presentations of geological and geochemical aspects of groundwater hydrology. Laboratory. Field trips.

680 SEMINAR IN GEOLOGY 2 credits
May be repeated for a total of six credits! Selected topics with reference material from origin.

684 SELECTED TOPICS IN GEOLOGY 1-3 credits
(May be repeated for a total of eight credits) Prerequisite: permission. Topics not regularly offered as formal courses, generally of classic current importance. Entails lectures, readings, discussions and/or guided laboratory work.

685 ADVANCED INDIVIDUAL READINGS IN GEOLOGY 1-4 credits
Prerequisite: Permission of graduate advisor. Directed readings to fit individual student programs. (May be repeated for a maximum of nine credits)

688 GEOLOGY TEACHING PRACTICUM 2 credits
Corequisite: graduate assistantship. Training and experience in college teaching of geology under supervision of experienced faculty. May be repeated for a maximum of 8 credits. Credits may not be used to meet degree requirements. Credit/Noncredit.

696 GEOLOGY COLLOQUIUM 1 credit
Lecture on current topics in geological sciences and thesis proposals and defenses by graduate students. May be repeated. Does not satisfy degree requirements.

788 GRADUATE RESEARCH PROBLEMS 1-3 credits
(May be repeated for a total of four credits) Prerequisite: permission. Directed reading and research in an aspect of geology chosen by student in consultation with an instructor.

799 MASTER’S THESIS 16 credits
Independent and original investigation. Must be successfully completed, report written and defended before a committee.

HISTORY 3400:

500 GENDER AND CULTURE IN CHINA 3 credits
Prerequisite: Graduate standing. Course examines the dynamic between gender and culture from late imperial to post-socialist China, with connections drawn to public policies in different contexts.

501 JAPAN AND THE PACIFIC WAR, 1895-1945 3 credits
The rise of Japanese militarism, Japan’s drive to create an empire in East and Southeast Asia, 1895-1945, and its role in the Pacific War, 1937-1945.
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<tr>
<td>504</td>
<td>STUDIES IN ROMAN HISTORY</td>
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<td>IMPERIAL SPAIN, 1469-1700</td>
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<td>HISTORY AND FILM</td>
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<td>HISTORY OF BRAZIL SINCE 1500</td>
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<td>529</td>
<td>EUROPE IN THE FRENCH REVOLUTIONARY ERA, 1789-1815</td>
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<td>THE CIVIL WAR AND RECONSTRUCTION, 1850-1877</td>
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**Graduate Courses**

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504: Prerequisite: completion of 6 hours of History courses at the 200 to 300 level. Concentrated investigation of selected topics such as imperialism in middle and late republic, the age of Augustus, or the fall of western Empire.

558: This course will focus on the work of history museums, historical societies and historic house associations that preserve and interpret the history of our communities, and archives.

585: Course examines the interactions between the work of academic historians and the public in areas such as local history, monuments, oral history, film, and the internet.

666: Course describes the rise and fall of Spanish as the first world power. It covers Spanish political, cultural, and social history from 1469-1700.

556: Survey of the economic, political, social, and cultural history of Brazil since 1500 to the present, the course also examines historiographical debates in Brazilian history.

524: The age of transition from the Middle Ages to modern times (964-1600). Special emphasis on historical trends, development of humanism, and the fine arts.

525: Europe in 16th Century, its religious, political, and diplomatic development, with special emphasis on Protestant, Anglican, and Catholic reformations.

554: Historical analysis of mass cultural phenomena and the social experiences associated with women’s experiences in the Middle East.

516: Core courses under the Latin American and Caribbean studies with emphasis on the rise and fall of Spain as the first world power. It covers Spanish political, cultural, and social history from 1469-1700.

552: The American Revolutionary Era: Political, military, and constitutional aspects. The struggle for the rights of England and independence; the impact of war on American society and the creation of republican institutions.

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525: Europe in 16th Century, its religious, political, and diplomatic development, with special emphasis on Protestant, Anglican, and Catholic reformations.

554: Historical analysis of mass cultural phenomena and the social experiences associated with women’s experiences in the Middle East.
698 ADVANCED ENGINEERING MATHEMATICS II
Preparation of research paper, including a bibliographic essay surveying scholarship on the topic and analysis of primary sources, and writing. 4 credits

699 HISTORIOGRAPHY
Study of historians, historical writings and interpretations through the ages. Required for master’s degree if candidate has not had equivalent undergraduate or graduate course elsewhere. 3 credits

690 HISTORY TEACHING PRACTICUM
Prerequisite: graduate departmental. Required of all graduate assistants each fall semester. Training and experience in college teaching of history under the supervision of an experienced instructor. 3 credits. May not be used to meet degree requirements.

694 DISSEY RESEARCH
Research for Master of Arts degree thesis. 1-6 credits

699 INDIVIDUAL READING FOR M.A. STUDENT
1-6 credits each

699 MASTER S THESIS
Prerequisite: 696. Writing of Master of Arts degree thesis. 1-6 credits

728 INDIVIDUAL READING FOR PH. D. STUDENT
1-6 credits each

728 INDIVIDUAL THESIS I AND II
Problems on topics in a field of interest, directing to individual student programs. May be repeated, but no more than 12 credits may apply toward the Ph.D. in history. Direct reading to fit individual student programs. Written permission of the instructor required. 3 credits

898 DISSERTATION RESEARCH
Research for Doctor of Philosophy degree dissertation. 1-6 credits

899 DOCTORAL DISSERTATION
Prerequisite: 696. Writing of Doctor of Philosophy dissertation. 1-6 credits

Mathematics 3450:

501 HISTORY OF MATHEMATICS
Prerequisite: Departmental permission. Origin and development of mathematical ideas. Course does not meet degree requirements in the department. 3 credits

510 ADVANCED LINEAR ALGEBRA I
Prerequisite: Departmental permission. Study of vector spaces, linear transformation, canonical and artional 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 not be used to meet master’s degree requirements in mathematics. 3 credits

512 ABSTRACT ALGEBRA II
Prerequisite: 511 or departmental permission. Study of groups, rings, fields, integral domains, vector spaces, field extensions, Galois theory. 3 credits

513 THEORY OF NUMBERS
Prerequisite: Departmental permission. Euclidean algorithm, unique factorization theorem, congruences, primitive roots, indices, 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 mathe- malical counting; properties of structure 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, integration, partial derivatives, multiple integrals, maxima and minima, convergence and uniform convergence, power series, improper integrals, transformations, line and surface integrals. 3450:521 may not be used to meet master’s degree requirements for mathematics or applied mathematics. 3 credits each

525 COMPLEX VARIABLES
Prerequisite: Departmental permission. Complex variables; elementary functions, differentiation and integration, Cauchy theorem and Laurent series; residue theorem; applications such as conformal mappings, inversion of integral transforms. 3 credits

527 APPLIED NUMERICAL METHODS I
Prerequisite: Departmental permission. Numerical methods in polynomial interpolation, root finding, numerical integration, and numerical linear algebra. May not be used to meet master’s degree requirements for mathematics or 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

532 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. 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. 3 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. Axiomatic treatment of both Euclidean and non-Euclidean geometries. Other concepts included are finite geometry, transformations, con- structions and inversions. 4 credits

545 INTRODUCTION TO TOPOLOGY
Prerequisite: Departmental permission. Introduction to topological spaces and topologies, connectedness, cardinality, homorphisms, connected spaces, metric spaces. 3 credits

559 TOPICS IN MATHEMATICS
May be repeated for a total of 12 credits. Prerequisite: Permission of instructor. Selected topics in mathematics and applied mathematics at an advanced level. 1-4 credits

591 WORKSHOP IN MATHEMATICS
May be repeated. Group of special topics in mathematics and applied mathematics. May not be used to meet undergraduate or graduate credit requirements in mathematics and statistics. May be elected elective only. 3 credits

611 TOPICS IN ALGEBRA
Prerequisite: 522 or departmental permission. Advanced study of selected topics in some of the following areas: semigroups, groups, rings, modules and fields. 3 credits

621 REAL ANALYSIS
Prerequisite: 522 or departmental permission. In-depth study of real analysis – metric spaces, Riemann integral, topology, Hilbert spaces. 3 credits

625 ANALYTIC FUNCTION THEORY
Prerequisite: 522 or departmental permission. Complex number system, holomorphic func- tions, continuity, differentiability, power series complex integration, residue theory, singularities, analytic continuation, asymptotic expansion. 3 credits

627 ADVANCED NUMERICAL ANALYSIS I
Prerequisite: 522 and knowledge of C++, FORTRAN, or MATLAB or departmental permis- sion. Error propagation; theory of analysis of numerical methods in interpolation, integration, and ordinary differential equations. 3 credits

628 ADVANCED NUMERICAL ANALYSIS II
Prerequisite: 522 and knowledge of C++, FORTRAN, or MATLAB or departmental permis- sion. Theoretical analysis of numerical methods in linear algebra. 3 credits

631 CALCULUS OF VARIATIONS
Prerequisite: Departmental permission. Problems with fixed and movable end points, prob- lems with constraints, generalization to several variables, the maximality principle, linear time-optimal problems, the connective between classical theory and the maximality principle. 3 credits

632 ADVANCED PARTIAL DIFFERENTIAL EQUATIONS
Prerequisite: 522 or departmental permission. Existence, uniqueness and stability of solutions to general classes of partial differential equations. Methods for solving these classes intro- duced, emphasizing both analytical and numerical techniques. 3 credits

633,4 METHODS OF APPLIED MATHEMATICS I AND II
Prerequisite: 539 or departmental permission. Methods of applied mathematics concentrat- ing on techniques for analysis of differential and integral equations – applied complex analysis, integral transforms, partial differential equations, and integral equations. 3 credits each

635 OPTIMIZATION
Prerequisite: 522 or departmental permission. Unconstrained and constrained optimization theory and methods in applied problems. 3 credits

636 ADVANCED COMBINATORICS AND GRAPH THEORY
Prerequisite: Departmental permission. Theory and techniques of combinatorics as applied to network problems and graph theoretic problems. 3 credits

638 THEORY AND APPLICATION OF WAVELETS
Prerequisite: permission of instructor. Theory of wavelets and applications to signal and image analysis. Topics include time-frequency representations, filter bands, discrete and continuous wavelet transforms, wavelet packets, and applications. 3 credits

639 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. 1-3 credits

692 SEMINAR IN MATHEMATICS
Prerequisite: permission of advisor. Seminar-type discussion on topics in mathematics leading to supervised research project. 1-3 credits

695 PRACTICUM IN MATHEMATICS
May be repeated for a total of four credits. Prerequisite: graduate standing and permission. Directed studies in mathematics at graduate level under guidance of selected faculty member. 1-4 credits

696 MASTER S RESEARCH
Prerequisite: 694. Writing of Master of Arts degree thesis. Written permission of the instructor required. (May be repeated) 1-6 credits

697 INDIVIDUAL READING
May be repeated for a total of four credits. Prerequisites: graduate standing and permission. Directed studies in mathematics at graduate level under guidance of selected faculty member. (May be repeated) 1-3 credits

699 MASTER S THESIS
Prerequisite: permission. Properly qualified candidate for master’s degree may obtain three credits for research that culminates in a public oral presentation of the faculty-supervised thesis. 3 credits

721,2 FUNCTIONAL ANALYSIS I AND II
3 credits each

725 MATRIX ITERATIVE ANALYSIS
Prerequisite: 532 and 621 or departmental permission. These courses are sequential. Study of normed linear spaces and transformations between them with an emphasis on the formu- lation and analysis of differential and integral equations as operator equations on these spaces. 3 credits

730 ADVANCED NUMERICAL SOLUTION OF PARTIAL DIFFERENTIAL EQUATIONS
Prerequisite: 522 and 532, or departmental permission. Derivation, analysis, and implementation of difference and variational-based methods for the solution of partial differ- ential equations and systems of differential equations. 3 credits

732 ADVANCED PARTIAL DIFFERENTIAL EQUATIONS I
Prerequisite: 522 and 532 or departmental permission. Well-posedness of elliptic, hyperbol- ic and parabolic problems. Variational methods for Elliptic problems, Conservation Laws and numerical methods, potential theory and integral equations. 3 credits

733,4 ASYMPTOTIC METHODS AND NONLINEAR ANALYSIS I AND II
3 credits each

738 DYNAMICAL SYSTEMS
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 equa- tions. 3 credits

739 MATHEMATICAL PHYSICS
Prerequisite: 522 or departmental permission. The implementation of difference and variational-based methods for the solution of partial differential equations. 3 credits
501 FUNDAMENTALS OF DATA STRUCTURES 3 credits
- Prerequisite: programming experience in C. Basic data structures and algorithms: stacks, queues, linked lists, trees, hash tables, and graphs; sorting and searching algorithms. Introduction to data abstraction and algorithm analysis. (May not be used to meet computer science requirements)

506 INTRODUCTION TO C AND UNIX 3 credits
- Prerequisite: Programming experience. C language programming. UNIX shell programs, file structure, system calls, and interprocess communication. (May not be used to meet computer science requirements)

520 UNIX SYSTEM PROGRAMMING 3 credits
- Prerequisite: 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 allocation, and system programming.

521 INTRODUCTION TO OBJECT-ORIENTED PROGRAMMING 3 credits
- Prerequisite: Admission to Computer Science master’s program or permission. Object-oriented design, analysis, and programming using different development models. Comparison with other programming paradigms.

526 OPERATING SYSTEMS 3 credits
- Prerequisite: Admission to Computer Science master’s program or permission. Introduction to various types of operating systems: batch processing systems, multiprogramming systems, and multitasking systems; storage management, process and resource control, deadlock problem. Course is independent of any particular operating system. (May not be used to meet computer science master’s degree requirements)

528 DATABASE MANAGEMENT 3 credits
- Prerequisite: Admission to Computer Science master’s program or permission. Introduction to database concepts and the design and implementation of database management systems. Focus on database design, normalization, transaction processing, and security.

538 ARTIFICIAL INTELLIGENCE AND HEURISTIC PROGRAMMING 3 credits
- Prerequisite: Admission to Computer Science master’s program or permission. Advanced topics in artificial intelligence, including expert systems, neural networks, and genetic algorithms. Emphasis on problem-solving and decision-making techniques.

546 INTRODUCTION TO BIOINFORMATICS LABORATORY 1 credit
- Prerequisite: Admission to Computer Science master’s program or permission. Introduction to bioinformatics, including sequence alignment, protein structure prediction, and gene expression analysis.

551 STATISTICS 3470: 1-6 credits

557 COMPUTER GRAPHICS 3 credits
- Prerequisite: Admission to Computer Science master’s program or permission. Introduction to computer graphics, including 2D and 3D geometry, transformation, shading, and lighting. Application to animation, virtual reality, and scientific visualization.

560 ARTIFICIAL INTELLIGENCE AND HEURISTIC PROGRAMMING 3 credits
- Prerequisite: Admission to Computer Science master’s program or permission. Advanced topics in artificial intelligence, including expert systems, neural networks, and genetic algorithms. Emphasis on problem-solving and decision-making techniques.

563 PERVASIVE COMPUTING 3 credits
- Prerequisite: Admission to Computer Science master’s program or permission. An introduction to pervasive computing, including sensor networks, ubicomp, and mobile computing. Emphasis on real-world applications.

565 ADVANCED COMPUTER ARCHITECTURE 3 credits
- Prerequisites: Admission to the Computer Science master's program or permission. Advanced topics in computer architecture, including superscalar processors, speculative execution, and dynamic instruction scheduling.

575 DATABASE MANAGEMENT 3 credits
- Prerequisite: Admission to Computer Science master’s program or permission. Fundamentals of database organization, structure, and manipulation. Concepts of data integrity, transactions, and query languages.

580 INTRODUCTION TO SOFTWARE ENGINEERING AND FORMAL METHODS 3 credits
- Prerequisite: Admission to Computer Science master’s program or permission. Introduction to software specification, validation, and verification. Focus on methodologies and tools of design, development, validation, and maintenance.

589 INTEGRATION OF DATABASE MANAGEMENT 3 credits
- Prerequisite: Permission of instructor. Directed studies designed as introduction to research problems under guidance of designated faculty member.

597 INDIVIDUAL STUDY IN COMPUTER SCIENCE 1 credit
- May be repeated. Can apply to degree, minor, or certificate only with departmental approval. Prerequisite: permission. Directed studies designed as introduction to research problems under guidance of designated faculty member.

618 INTRODUCTION TO DISCRETE STRUCTURES 3 credits
- Prerequisite: Admission to Computer Science master’s program or permission. Introduction to discrete structures and proof techniques. Topics include logic, sets, functions, relations, graphs, trees, and counting.

626 ADVANCED OPERATING SYSTEMS 3 credits
- Prerequisite: Admission to Computer Science master’s program or permission. Advanced topics in operating system design, including synchronization mechanisms, performance evaluation, security, and distributed operating systems.

628 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 syntax, type systems, operational semantics, and verification.

635 ADVANCED ALGORITHMS AND COMPLEXITY THEORY 3 credits
- Prerequisite: Admission to Computer Science master’s program or permission. Advanced graph algorithms, matrix multiplication, fast Fourier transforms, lower bound theory, complexity hierarchies, NP-complete and intractable problems, approximation techniques.

641 OPTIMIZATION FOR PARALLEL COMPUTERS 3 credits
- Prerequisite: Admission to Computer Science master’s program or permission. Advanced graph algorithms, matrix multiplication, fast Fourier transforms, lower bound theory, complexity hierarchies, NP-complete and intractable problems, approximation techniques.

665 ADVANCED COMPUTER ARCHITECTURE 3 credits
- Prerequisites: Admission to Computer Science master’s program or permission. In-depth study of advanced computer architecture concepts, including IA-32 architecture, the x86-64 architecture, and the ARM architecture.

689 ADVANCED TOPICS IN COMPUTER SCIENCE 1-3 credits
- May be repeated. Prerequisite: Permission of instructor. At most, six credits may be applied to degree requirements. Selected topics in computer science at an advanced level. (Department consent required for application to computer science master’s degree requirements)
551.2 THEORETICAL STATISTICS I AND II
3 credits each
Sequential. Prerequisite: Appropriate background is three semesters of calculus or equivalent. Elementary combinatorial probability theory, probability distributions, mathematical expectation, functions of random variables, sampling distributions, point and interval estimation, tests of hypotheses, regression and correlation, introduction to experimental designs. May not be used to meet graduate major requirements in statistics.

560 STATISTICAL METHODS
4 credits
Application of statistical methods to the social sciences including description statistics, probability distributions, sampling distributions, hypothesis testing, correlation and regression, simultaneous estimation, confidence intervals, linear and non-linear regression, correlation, computer applications. May not be used to meet graduate major requirements in statistics.

565 PUBLISHING STATISTICS
4 credits
Prerequisite: Appropriate background is two semesters of calculus or equivalent. Applications of statistical theory to natural and physical sciences and engineering, including probability distributions, estimation, hypothesis testing (parametric and nonparametric), uses of confidence intervals, linear and non-linear regression and correlation. May not be used to meet graduate major requirements in statistics.

566 APPLIED REGRESSION AND ANOVA
4 credits
Prerequisite: Appropriate background is one semester of applied statistics or equivalent. Applications of the techniques of regression and multifactor analysis of variance. May not be used to meet graduate major requirements in statistics.

568 DESIGN OF SAMPLE SURVEYS
3 credits
Prerequisite: Appropriate background is one semester of applied statistics or equivalent. Design and analysis of frequently used sample survey techniques.

569 RELIABILITY MODELS
3 credits
Prerequisite: Appropriate background is one semester of applied statistics or equivalent. Selected topics in reliability modeling including parametric and nonparametric models, competing modes of failure, censored data and accelerated life models.

571 ACTUARIAL SCIENCE I
3 credits
Prerequisite: Appropriate background is two semesters of calculus or equivalent. Study of various statistical, financial, and mathematical calculations used in insurance premiums related to contingent risks based on individual risk model frameworks.

572 ACTUARIAL SCIENCE II
3 credits
Prerequisite: 571 Correlation of Actuarial Science I. Study of multiple life functions, decrement models, valuation theory for pension plans, insurance models including expenses, nonforfeiture benefits and dividends.

575 FOUNDATIONS OF STATISTICAL QUALITY CONTROL
3 credits
Prerequisite: Appropriate background is one semester of applied statistics or equivalent. Course provides a solid foundation in the theory and applications of statistical techniques widely used in industry.

580 STATISTICAL DATA MANAGEMENT
3 credits
Prerequisite: Appropriate background is one semester of applied statistics or equivalent. Students learn data organization and structures, design of statistical databases, statistical software analysis, input and output of data between software, and missing data analysis.

588 TOPICS IN STATISTICS
1-2 credits
Prerequisite: Permission. Selected topics in advanced statistics, including quality control, reliability, sampling techniques, decision theory, advanced inference, stochastic processes and others.

589 WORKSHOP IN STATISTICS
1-2 credits
Prerequisite: Permission. Selected topics and specialized language skills or reading of significant works of literature or culture not studied in class. May be repeated with change of topic.

590 STATISTICAL CONSULTING
3-3 credits
Prerequisite: 580 or permission. Students will be assigned to work with an instructor on current projects in the Center for Statistical Consulting. May be repeated for a total of 4 credits; however, only 2 credits will count toward major requirements. Does not count for elective credit for math science department majors.

591 ADVANCED PROBABILITY AND STOCHASTIC PROCESSES
3 credits
Prerequisite: Appropriate background is two semesters of calculus or equivalent. Probability, random variables, moments, generating functions, random vectors, special distributions, limit theorems, sampling, point estimation, hypothesis testing, confidence estimation.

592 ADVANCED MATHEMATICAL STATISTICS
3 credits
Prerequisite: 581. College level algebra or equivalent. Data description and analysis, probability applications in the life sciences (including sensitivity, specificity, relative risk), principles and application of statistical inference, ANOVA, correlation and regression. May not be used to meet graduate major requirements in statistics.

595 LINEAR MODELS
3 credits
Prerequisite: Appropriate background is linear algebra or 651 or equivalent. General linear model in matrix notation, general linear hypothesis, regression models, experimental design models, analysis of variance and covariance, variance components.

596 ADVANCED STATISTICAL METHODS
3 credits
Prerequisite: Appropriate background is one semester of applied statistics or equivalent. Theory and applications of the techniques of regression and multivariable analysis of variance. Required for the graduate major in statistics.

597 STATISTICS FOR THE LIFE SCIENCES
3 credits
Prerequisite: college level algebra or equivalent. Data description and presentation, probability applications in the life sciences (including sensitivity, specificity, relative risk), principles and application of statistical inference, ANOVA, correlation and regression. Required for the graduate major in statistics.

603 EXPERIMENTAL DESIGN
3 credits
Prerequisite: Appropriate background is one semester of applied statistics or equivalent. Selected topics in experimental design including random and fixed effects, nested designs, split-plot designs, randomization, fractional factors, Latin squares, and analysis of covariance.

604 STATISTICS FOR THE HEALTH SCIENCES
4 credits
(May not be used to meet degree requirements for mathematical sciences majors.) Prerequisite: college level algebra or equivalent. Descriptive statistics, probability and probability distributions, tests of hypotheses and confidence intervals, regression and correlation. May not be used to meet graduate major requirements in statistics.

606 REGRESSION
3 credits
Prerequisite: Appropriate background is one semester of applied statistics or equivalent. Correlation, simple and multiple linear regression: least squares, matrix notation, model building and diagnostics, confidence and prediction intervals, hypothesis testing, outliers, influence, multicollinearity, transforma-
tions, categorical regressors, logistic regression.

611 NONPARAMETRIC STATISTICS-METHODS
3 credits
Prerequisite: Appropriate background is one semester of applied statistics or equivalent. Theory and practice using techniques requiring less restrictive assumptions. Nonparametric ana-
logues to t- and F-tests, ANOVA, regression and correlation. Computer applications.

617 FACTOR ANALYSIS
3 credits
Prerequisite: Appropriate background is one semester of applied statistics or equivalent. Theory and practice using techniques for identifying variables through use of principal components and factor analysis. Identification of groups using cluster analysis. Computer applications.

618 MULTIVARIATE STATISTICAL METHODS
3 credits
Prerequisite: Appropriate background is two semesters of applied statistics or equivalent. Multivariate techniques including distance concept, Hotelling’s T2, multivariate ANOVA, regression and correlation, linear contrasts, factorial experiments, nested and repeat measure designs, MANOVA and discriminant analysis, canonical correlations, applications.

620 BIOSTATISTICS
3 credits
Prerequisite: Appropriate background is one semester of applied statistics or equivalent. Statistical issues and methods for biological, medical and health sciences including: clinical trials, sample size, power, log-linear models, survival analysis, and bioassy. Computer applications.

625 RESPONSE SURFACE METHODOLOGY
3 credits
Prerequisite: Appropriate background is two semesters of applied statistics or equivalent. First and second order response surfaces, efficient experimental plans, methods for the analysis, and optimization of response functions.

629 ADVANCED TOPICS IN STATISTICS
1-3 credits
Prerequisite: Permission. Selected topics in statistics including concepts in order, statistics, advanced inference, sequential analysis, stochastic processes, reliability theory, Bayesian statistics and regression.

632 STATISTICS MASTER PAPER
1-3 credits
(May be repeated) Prerequisite: permission of advisor. Supervised writing of paper for Masters of Science in Statistics Norhness Option.

635 PRACTICUM IN STATISTICS AND MATHEMATICS
1-3 credits
Prerequisite: graduate teaching assistant or permission. Training and experience in college teaching of statistics. May not be used to meet degree requirements. Credit/Noncredit.

637 INDIVIDUAL READING
1-3 credits
(May be repeated for a total of four credits) Prerequisites: graduate standing and permission. Directed studies in statistics under guidance of selected faculty member.

638 MASTER’S RESEARCH
1-6 credits
(May be repeated) Prerequisite: permission of advisor. Research in suitable topics in statistics culminating in a research paper. No more than 2 credits applicable to major requirements.

639 MASTER’S THESIS
2 credits
(May be repeated for a total of 4 credits) Prerequisite: Permission. Properly qualified candidates for master’s degree may obtain 2-4 credits for research experience which culminates in presentation of faculty-supervised thesis.

ENGINEERING APPLIED MATHEMATICS
3490:

790 ADVANCED SEMINAR IN APPLIED MATHEMATICS
1-4 credits
Prerequisite: Permission. May be repeated for a total of 12 credits. For students seeking graduate degrees in Applied Mathematics. Advanced projects and studies in various areas of applied mathematics.

898 PRELIMINARY RESEARCH
3-15 credits
Prerequisite: Permission. (May be repeated.) Completion of qualifying examination and review of student’s research. Must be approved by Ph.D. Advisory Committee. Preliminary investigation of Ph.D. dissertation topic.

899 DOCTORAL DISSERTATION
1-15 credits
Prerequisite: Permission. (May be repeated.) Completion of Candidacy examination and approval of Student Advisory Committee. Original research by a Ph.D. candidate.

MODERN LANGUAGES
3500:

590 WORKSHOP
1-4 credits
Prerequisite: Graduate status or permission of department. (May be repeated for a maximum of eight credits) Group studies of special topics in modern languages.

597 INDIVIDUAL READINGS IN MODERN LANGUAGES
1-4 credits
Prerequisite: Graduate status or permission of instructor and department chair. (May be repeated with departmental permission) Individual study under the guidance of professor who directs and coordinates student’s reading and research.

ARABIC
3501:

522 SPECIAL TOPICS IN ARABIC
3 credits
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 at least eight credits.

597 INDIVIDUAL READING IN ARABIC
1-4 credits
Prerequisite: Graduate status, permission of instructor and department chair. Individual study under the guidance of a professor. May be repeated with departmental permission for a total of eight credits.

CHINESE
3502:

522 SPECIAL TOPICS IN LANGUAGE, SKILLS, OR CULTURE LITERATURE
1-4 credits
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 4 credits.

597 INDIVIDUAL READING IN CHINESE
1-4 credits
Prerequisite: Graduate status, permission of instructor and department chair. Individual study under the guidance of a professor who directs and coordinates student’s reading and research. May be repeated with departmental permission for a total of eight credits.

LATIN
3510:

597 LATIN READING AND RESEARCH
3 credits each
Prerequisite: Graduate status or permission of department. General Latin epigraphy, prose composition or philology; numerics or certain other archaeological topics may be offered. May be repeated for credit with change of subject.
502 ADVANCED FRENCH GRAMMAR 3 credits
Prerequisite: Graduate status or permission of department. Advanced study of normative French grammar with emphasis on syntax, morphology, grammatical structure and phonetic principles.

513 FRENCH CINEMA 3 credits
Prerequisite: Graduate status or permission of department. Study and discussion of various aspects of French culture and civilization as characterized in movies.

522 SPECIAL TOPICS IN ADVANCED LANGUAGE SKILLS OR CULTURE OR LITERATURE 4 credits
Prerequisite: Graduate status or permission of department. (May be repeated.) Development of specialized language skills or reading of significant works of literature or culture not studied in other courses.

527 20TH CENTURY FRENCH LITERATURE 4 credits
Prerequisite: Graduate status or permission of department. Reading and discussion of the most representative works of period. Conducted in French.

530 CONTEMPORARY QUEBEC 3 credits
Historical, political, sociological, and cultural overviews of Quebec, offering an in-depth examination of questions of identity through the study of literature and popular culture.

531 FRANCOPHONE LITERATURE 3 credits
Prerequisite: Graduate status or permission of department. Reading and analysis of Don Quijote. Conducted in Spanish.

5928 INDIVIDUAL READING IN FRENCH 4 credits
Prerequisite: Graduate status or permission of department. Individual reading in French, offered at the graduate level. (May be repeated for a total of eight credits.)

6928 INDIVIDUAL READING AND RESEARCH IN FRENCH 4 credits
Prerequisite: Graduate status or permission of department. Independent study and research in specific areas. Considerable reading and writing required.

ITALIAN 3550:

597 INDIVIDUAL READING IN ITALIAN 4 credits
Prerequisite: 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 3 credits
Prerequisite: 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 4 credits
Prerequisite: 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.

505 SPANISH LINGUISTICS: PHONOLOGY 4 credits
Prerequisites: Graduate status or permission of department. Descriptive study of Spanish phonology. Comparisons of Spanish and English sounds, historical aspects, regional accents and sociolinguistic variation. Conducted in Spanish.

506 SPANISH LINGUISTICS: SYNTAX 4 credits
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 4 credits
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.

508 SURVEY OF HISPANIC LITERATURE: SPANISH AMERICA 4 credits
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.

509 CULTURAL MANIFESTATION IN MEDIEVAL AND RENAISSANCE SPAIN 4 credits
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. Conducted in Spanish.

511 PLATO 3 credits
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.

512 AUGUSTINE 3 credits
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.

513 SPANISH CULTURE: SPAIN 4 credits
Prerequisite: Graduate status or permission of department. Study of society, customs, history, art, music, etc. of Spain, from a Hispanic perspective. Does not count toward the M.A. in Spanish. Conducted in Spanish.

514 ARISTOTLE 3 credits
Prerequisite: Permission of instructor. Detailed study of Aristotle's metaphysics, philosophy of mankind and ethics.

515 AQUINAS 3 credits
Prerequisite: Permission of instructor. In-depth study of St. Thomas Aquinas' metaphysics, epistemology, ethics, political theory, and philosophical theology.

518 20TH CENTURY SPAIN: THE AVANT -GARDE IN LITERATURE AND ART 4 credits
Prerequisite: 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 century. Conducted in Spanish.

519 THE SPANISH CIVIL WAR AND ITS CULTURAL IMPACT 4 credits
Prerequisite: Graduate status or permission of department. Study of the impact of the Civil War on Spanish culture.

522 SPECIAL TOPICS IN SPECIALIZED LANGUAGE SKILLS OR CULTURE OR LITERATURE 4 credits
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 4 credits
Prerequisite: Graduate status or permission of department. Reading and discussion of representative contemporary Latin American novels. Conducted in Spanish.

527 LATINO CULTURES IN THE USA 4 credits
Prerequisites: 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.

530 WOMEN IN 20TH CENTURY HISPANIC LITERATURE 4 credits
Prerequisite: Graduate status or permission of department. Reading and analysis of selected works from the 20th century that depict women in Hispanic countries. Methodologies of feminist criticism will be studied. Conducted in Spanish.

531 HISPANIC CULTURE: SPAIN 4 credits
Prerequisite: Graduate status or permission of department. Study of society, customs, history, art, music, etc. of Spain, from a Hispanic perspective. Does not count toward the M.A. in Spanish. Conducted in Spanish.

611 SPANISH TEACHING PRACTICUM 2 credits
Prerequisite: 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.

6928 INDIVIDUAL READING IN SPANISH 14 credits
Content of given individual reading program taken from course contests approved for graduate work in Spanish.

PHILOSOPHY 3600:

511 PLATO 3 credits
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.

514 AQUINAS 3 credits
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.

515 AUGUSTINE 3 credits
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.

518 20TH CENTURY ANALYTIC PHILOSOPHY 3 credits
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.

521 PHILOSOPHY OF LAW 3 credits
Prerequisite: Permission of instructor. Consideration of major theories in the philosophy of law. Special attention will be given to issues related to the law and its role in society.

524 EXISTENTIALISM 3 credits
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.

526 PHENOMENOLOGY 3 credits
Prerequisite: Permission of instructor. Inquiry into methodology of Husserl and Heidegger and their influence upon Western European and American thought.

533 ARISTOTLE 3 credits
Prerequisite: Permission of instructor. Detailed study of Aristotle's metaphysics, philosophy of nature, philosophy of mankind and ethics.

534 KANT 3 credits
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.

561 NEUROETHICS 3 credits
Prerequisite: Permission of instructor. Consideration of moral and ethical issues in contemporary neurosciences.

562 THEORY OF KNOWLEDGE 3 credits
Prerequisite: Permission of instructor. Examination of nature of knowledge; theories of percep tion, conception and truth, problem of induction and relation of language to knowledge.

564 PHILOSOPHY OF SCIENCE 3 credits
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.

571 METAPHYSICS 3 credits
Prerequisite: Permission of instructor. Theories about ultimate nature and ultimate explanation of reality. Uses readings from classical and contemporary sources.

580 SEMINAR 3 credits
Prerequisite: Permission of instructor. Varying philosophical topics not covered in regular course offerings.

581 PHILOSOPHY OF LANGUAGE 3 credits
Prerequisites: 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.

665 ETHICS OF SCIENCE 3 credits
Prerequisite: Permission of instructor. Examination of the foundational issues surrounding ethics and science as well as consideration of applied ethical issues of scientists, science, new technologies, and society.
## PHYSICS

### PHYSICS 3650:

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<thead>
<tr>
<th>Course Code</th>
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<tr>
<td>501</td>
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<td>506</td>
<td>PHYSICAL OPTICS</td>
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<td>537</td>
<td>MECHANICS I</td>
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<td>541</td>
<td>QUANTUM PHYSICS I</td>
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<td>542</td>
<td>QUANTUM PHYSICS II</td>
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<td>550</td>
<td>ADMINISTERING PRISONS, PROBATION, AND PAROLE</td>
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<td>551</td>
<td>ADVANCED LABORATORY I</td>
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<td>TECHNIQUES OF PHYSICS INSTRUCTION</td>
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<td>INTRODUCTION TO SOLID-STATE PHYSICS</td>
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<td>575</td>
<td>ADVANCED LABORATORY II</td>
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<td>576</td>
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### PHYSICS 3700:

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<tr>
<td>502</td>
<td>POLITICS AND THE MEDIA</td>
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<td>503</td>
<td>MEDIA, CRIME, AND PUBLIC OPINION</td>
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<td>504</td>
<td>SURVEY RESEARCH METHODS</td>
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<td>UNDERSTANDING RACIAL AND GENDER CONFLICT</td>
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<tr>
<td>509</td>
<td>AL QAEDA</td>
<td>3</td>
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### PHYSICS 3650:

- Prerequisites: Admission to the physics master's program or permission. College-level physics content for future teachers. Inquiry, discovery, activities, discussion, and experimental learning take place in a laboratory-embedded lecture environment.
- Principles of classical, quantum, and statistical mechanics, relativity, particle and field theory, dynamical systems, special relativity, Maxwell's equations, electromagnetic waves, scattering, quantum mechanics, and special relativity.

### PHYSICS 3700:

- Prerequisites: Admission to the physics master's program or permission. Foundations of relativistic quantum mechanics, Klein-Gordon and Dirac equations, spin-zero and spin-\( \frac{1}{2} \) particles in electromagnetic field, second quantization of bosons and fermions, superfluidity and superconductivity.
- Prerequisites: Admission to the physics master's program or permission. Principles of least action and Lagrangian equation of motion, conservation laws, integration of equation of motion, collisions, small oscillations, Hamilton's equations, canonical transformations.
- Prerequisites: Admission to the physics master's program or permission. Applications of quantum theory, Schrodinger equation, observables, angular momentum, perturbation theory, variational principles, bound states, scattering theory, radial expansion, spin and the Pauli principle.
- Prerequisites: Admission to the physics master's program or permission. Applications of quantum mechanics to atomic and solid state physics, tunneling and alpha decay, periodic potential, Hydrogen and Helium atoms, interatomic forces, quantum statistics.
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- Prerequisites: Admission to the physics master's program or permission. Introduction to quantum theory, Schrodinger equation, observables, angular momentum, perturbation theory, variational principles, bound states, scattering theory, radial expansion, spin and the Pauli principle.
- Prerequisites: Admission to the physics master's program or permission. Applications of quantum mechanics to atomic and solid state physics, tunneling and alpha decay, periodic potential, Hydrogen and Helium atoms, interatomic forces, quantum statistics.
- Prerequisites: Admission to the physics master's program or permission. Further investigations of various selected topics in physics, under guidance of faculty member.
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- Prerequisites: Admission to the physics master's program or permission. Applications of quantum mechanics to atomic and solid state physics, tunneling and alpha decay, periodic potential, Hydrogen and Helium atoms, interatomic forces, quantum statistics.
695 TOPICS IN MASTER’S RESEARCH
Prerequisite: Admission to a Political Science graduate program or permission. (May be repeated for a total of 9 credits; no more than six credits may be applied to degree requirements.) Research in suitable topics in political science or applied political science culminating in an Essay of Distinction. Credit/noncredit.

697 INDEPENDENT RESEARCH AND READINGS
May be repeated for a total of 9 credits toward the master’s degree in political science; Prerequisite: Admission to a Political Science graduate program or permission.

699 MASTERS THESIS
Prerequisite: Admission to a Political Science graduate program or permission.

PSYCHOLOGY 3750:

500 PERSONALITY
Prerequisite: admission to the Graduate School. Consideration of current conceptualizations of the normal personality with emphasis on methods of measurement, experimental findings and research techniques.

510 PSYCHOLOGICAL TESTS AND MEASUREMENTS
Prerequisite: admission to the Graduate School. Consideration of the nature, construction and use of tests and measurements in industry, government and education. Includes aptitude and achievement tests, rating scales, attitude and opinion analysis.

520 INTERPERSONAL PSYCHOLOGY
Prerequisite: admission to the Graduate School. Survey of syndromes, etiology, diagnoses and treatments of major psychological conditions ranging from transient maladjustments to psychosis.

530 PSYCHOLOGICAL DISORDERS OF CHILDREN
Prerequisite: admission to the Graduate School. Survey of syndromes, etiologies and treatments of behavioral disorders in children from the standpoint of developmental psychology. Behavioral data and treatment approaches emphasized.

543 HUMAN RESOURCE MANAGEMENT
Prerequisite: admission to the Graduate School. The application of psychological theory to macro-level processes in organizations including leadership, motivation, task performance, organizational theories and development.

545 PSYCHOLOGY OF SMALL GROUP BEHAVIOR
Prerequisite: admission to the Graduate School. Intensive investigation of factors affecting behavior and performance in groups including effects of personality, social structures, task, situation and social-cognitive variables.

550 COGNITIVE DEVELOPMENT
Prerequisite: admission to the Graduate School. Theory and research on lifespan changes in cognitive processes including concept formation/categorization, information processing and Piagetian assessment tasks.

560 HISTORY OF PSYCHOLOGY
Prerequisite: admission to the Graduate School. Psychology in pre-scientific period and details of development or systematic viewpoints in 18th and 19th Centuries.

601,2 PSYCHOLOGICAL RESEARCH USING QUANTITATIVE AND COMPUTER METHODS I AND II
4 credits each Sequential prerequisite: graduate standing in psychology or the collaborative doctoral program in counseling psychology or special graduate students with permission. Psychological research problem applying quantitative and computer methods. Topics include research design, sampling, controls, threats to validity, hypothesis testing, psychological measurement, error, robustness and power.

610 CORE I: SOCIAL PSYCHOLOGY
Prerequisite: graduate standing in psychology or the collaborative doctoral program in counseling psychology or permission of instructor. Introduction to empirical research and theories on the psychological processes related to interpersonal behavior, focusing on topics like attitude change, social influence, and prosocial behavior.

620 CORE II: COGNITIVE PSYCHOLOGY
Prerequisite: graduate standing in psychology or the collaborative doctoral program in counseling psychology or permission of instructor. Survey of theories, concepts, empirical phenomena and methodological issues. Topics include attention, cognitive capacity, learning, memory, categorization, skill acquisition/expertise, and training effectiveness.

630 CORE III: INTEGRATIVE DIFFERENCES
Prerequisite: graduate standing in psychology or the collaborative doctoral program in counseling psychology or permission of instructor. Survey of theoretical perspectives on individual differences in personality and behavior and of literature on between- and within-group cultural variables influencing personality development and assessment.

640 CORE IV: BIOPSYCHOLOGY
Prerequisite: graduate standing in psychology or the collaborative doctoral program in counseling psychology or permission of instructor. Survey of nervous system structure/function including neuroanatomy, neuron physiology, and synaptic transmission. Also overview bioethical bases of learning, memory, consciousness, intelligence, psychopharmacology, behavior or genetics.

650 CORE V: SOCIAL-COGNITIVE PSYCHOLOGY
Prerequisite: graduate standing in psychology or the collaborative doctoral program in counseling psychology or permission of instructor. Social and cognitive theory/research applied to the issue of how people understand their social experiences. Topics include: person perception, attribution, social categorization, social inference.

660 SCIENCE AND ETHICS OF INDUSTRIAL PSYCHOLOGY
Survey of Industrial Psychology, including coverage of selection and performance management. Also, discusses professional and scientific guidelines regarding the ethics of Industrial Psychology.

672 COUNSELING PRACTICUM LAB
Prerequisite: graduate standing in psychology and permission of instructor. Corequisite: 672. Application of therapeutic skills and intervention techniques to work with clients in the Psychology Department Counseling Clinic, including small group supervision of clinical work. (May be repeated for a total of 8 credits.) Credit/noncredit.

673 COUNSELING PRACTICUM I
Prerequisite: Graduate standing in psychology and instructor’s permission. Corequisite: 672. Application of therapeutic skills and intervention techniques to work with clients in the Psychology Department Counseling Clinic, including small group supervision of clinical work. (May be repeated for a total of 8 credits.) Credit/noncredit.
674 PERSONNEL PRACTICUM (May be repeated.) Prerequisites: 660, graduate standing in psychology. 4 credits
Experiences in personnel selection, counseling, and personnel management provide the student with the opportunity to apply skills and knowledge acquired in graduate education and to obtain knowledge about community programs and agencies which focus on development processes. Credit/No Credit.

675 APPLIED COGNITIVE AGING PRACTICUM (May be repeated.) Prerequisites: 721, graduate standing in psychology. 4 credits
Counseling and psychological services are discussed in the context of emotional, cognitive, and behavioral effects. Prerequisite: Graduate coursework taken at Kent State, Youngstown State, and/or Cleveland State Universities to apply toward a UA degree either as a required or an elective course.

699 MASTER’S THESIS (May be repeated.) Prerequisites: permission of chair. Research arrangement and supervision of thesis for master’s degree. 1-4 credits

700 SURVEY OF PROJECTIVE TECHNIQUES 4 credits
Prerequisite: 630 or permission of instructor. Introduction to rationale, assumptions and ethics, and research of projective testing. Elementary administration, scoring and interpretation of Rorschach; and survey of other important contemporary projective instruments.

701 PSYCHODIAGNOSTICS 4 credits
Prerequisite: 700. Application of psychological testing to problems of diagnosis and evaluation. Practical experience in administration, scoring and interpretation. Integration of projective data with other assessment techniques in variety of settings.

707 SUPERVISION IN COUNSELING PSYCHOLOGY I 4 credits
Prerequisite: doctoral standing or permission of instructor. Instruction and experience in supervising a graduate student in counseling.

710 INTRODUCTION TO COUNSELING PSYCHOLOGY 4 credits
Prerequisite: graduate standing in the Collaborative Program in Counseling Psychology. Introduction to theoretical foundations of and recent developments in counseling psychology, with an emphasis on contemporary research literature in the field.

711 THEORIES OF COUNSELING AND PSYCHOTHERAPY 4 credits
Prerequisite: 630 or permission of the instructor. Major systems of individual psychotherapy explored within a philosophical framework: Freudian, behavioral, Rogerian, cognitive and other. Includes research, contemporary problems and ethics.

714 OBJECTIVE PERSONALITY EVALUATION 4 credits
Prerequisite: completion of 630 or 601/5500, and 420/520, and 5600/6456. Study of the development, administration, and interpretation of objective instruments for personality assessment (MMPI, CPI, MBTI, WPQ and selected additional inventories).

715 RESEARCH DESIGN IN COUNSELING I 3 credits
Prerequisite: doctoral standing or permission of the instructor. Study of research designs, evaluation of research procedures, and review research in counseling.

717 ISSUES OF DIVERSITY IN COUNSELING PSYCHOLOGY 4 credits
Prerequisite: 630, one semester of practicum work. Critical examination and application of research on contemporary theory in counseling diverse populations, focusing on race/ethnicity, gender, sexual orientation, age, disability, and spirituality.

718 HISTORY AND SYSTEMS IN PSYCHOLOGY 2 credits
Prerequisite: 630. Historical and scientific antecedents of psychology and details of the development of systematic viewpoints in the 19th and 20th centuries.

727 PSYCHOLOGY OF ADULTHOOD AND AGING 4 credits
Prerequisite: 630, graduate standing in psychology or in the collaborative program in counseling psychology or permission of the instructor. Aspects of development, aging with emphasis on life-span methodology and research design. Age-related changes in intelligence, personality, sensation, perception, learning, memory, and socialization and intervention approaches.

731 PERCEPTION, ATTENTION, AND AGING 4 credits
Prerequisites: graduate standing in adult development and aging program or permission of instructor. Overview of theory, methods, and data on attention and perception and how aging affects these phenomena.

732 COGNITION AND AGING 4 credits
Prerequisite: graduate standing in psychology or permission of instructor. Survey of selected topics in cognitive aging including memory, problem-solving, decision-making, and expertise.

733 APPLIED COGNITIVE AGING PSYCHOLOGY: COGNITIVE NEUROPSYCHOLOGY 4 credits
Prerequisite: 640 or instructor’s permission. An advanced course for graduate students with the most recent literature in cognitive neuropsychology within the context of aging research.

736 PSYCHOPHARMACOLOGY AND ADULTHOOD 4 credits
Prerequisite: 640. Pharmacology addresses a diverse range of drugs that act in the brain. Drug mechanisms are discussed in the context of emotional, cognitive, and behavioral effects.

737 DEVELOPMENTAL PSYCHOLOGY 4 credits
Prerequisite: 721, graduate standing in psychology, or permission of instructor. Examination of methods, special topics in child and adolescent development, early intervention, day care, kibbutzim, social networks, subcultural variations, and hospice/dying.

740 INDUSTRIAL GERONTOLOGY 4 credits
Prerequisite: 660, graduate standing in psychology, or permission of instructor. Study of age-related changes in work involving both adult and older adult workers. Topics include person-job fit, motivation, training, motivating and appraising older employees; health and safety; job design, vocational guidance; and retirement.
664 SOCIOLOGY OF CRIMINAL BEHAVIOR 3 credits
Prerequisite: Graduate standing in Sociology or permission of instructor. Analysis of relationship of crime and delinquency to social structure and social processes. Responses by criminal justice agencies. Seminar.

665 JUVENILE DELINQUENCY: THEORY AND RESEARCH 3 credits
Prerequisite: Graduate standing in Sociology or permission of instructor. Analysis of theories of delinquency; ecological, class structural, subcultural, etc. Review of relevant research also presented. Seminar.

666 SOCIOLOGY OF CORRECTIONS 3 credits
Prerequisite: Graduate standing in Sociology or permission of instructor. Analysis of correctional institution as social system; its formal structure and informal dynamics. Analysis of present state of corrections research. Seminar.

677 FAMILY ANALYSIS 3 credits
Prerequisite: Graduate standing in Sociology or permission of instructor. Analysis and evaluation of sociological theory and research in the family. Concentration on techniques of theory construction and research design in sociological study of the family. (Same as KSU 72506) Seminar.

678 SOCIAL GERONTOLOGY 3 credits
Prerequisite: Graduate standing in Sociology or permission of instructor. Impact of aging upon individuals and society. Reactions of individuals and society to aging. (Same as KSU 72877) Seminar.

679 POLITICAL SOCIOLOGY 3 credits
Prerequisite: Graduate standing in Sociology or permission of instructor. Description, analysis and interpretation of political behavior through application of sociological concepts. (Same as KSU 72544) Seminar.

686 POPULATION 3 credits
Prerequisite: Graduate standing in Sociology or permission of instructor. Analysis of basic population theory and methods. Trends and differentials in fertility, mortality, migration and selected social demographic variables also considered. (Same as KSU 72656) Seminar.

687 SOCIAL CHANGE 3 credits
Prerequisite: Graduate standing in Sociology or permission of instructor. Advanced seminar in theories of social change. (Same as KSU 73200) Seminar.

696 MASTER’S RESEARCH PAPER 1-6 credits (May be repeated) Prerequisite: Graduate standing in Sociology or permission of instructor. Supervised thesis writing. (May be repeated) Prerequisite: Graduate standing in Sociology or permission of instructor. Supervised thesis writing. Seminar.

700 COLLEGE TEACHING OF SOCIOLOGY 3 credits
Prerequisite: Teaching assistant in Sociology or permission of instructor. Training and experience in college teaching of sociology. Approved for credit toward the Ph.D. degree. Not approved as credit toward the degree. (Same as KSU 67284b) Seminar.

706 MULTIVARIATE TECHNIQUES IN SOCIOLOGY 3 credits
Prerequisites: 604 or permission. Methodological problems using advanced multivariate techniques in analysis of sociological data. Topics include non-parametric causal analysis such as recursive and nonrecursive path analysis. (Same as KSU 72717).

709 ADVANCED DATA ANALYSIS 3 credits
Prerequisites: 706 or equivalent, graduate standing in Sociology or permission of instructor. Critical examination of data analysis techniques having particular relevance to research problems in sociology. (Same as KSU 72218) Seminar.

710 SOCIAL SAMPLING 3 credits
Prerequisites: 604 or permission. Theory and methods of sampling in sociology. Topics include sample design, sampling efficiency, nonresponse, mortality in longitudinal designs, random, systematic, and stratified sampling, stratified and cluster sampling. Seminar.

711 SURVEY RESEARCH METHODS 3 credits
Prerequisites: 604 or permission. In-depth study of design and administration of social surveys. (Same as KSU 72210) Seminar.

714 QUALITATIVE Methodological 3 credits
Prerequisites: 604 or permission. Methodology building and theory testing through the application of such techniques as participant observation, open ended interviewing, content analysis, historiography, archives, records from churches, schools, social agencies, and other contemporary sources and qualitative statistics. (Same as KSU 72219) Seminar.

715 ADVANCED SOCIOLOGY 3 credits
Prerequisite: Graduate standing in Sociology or permission of instructor. Two to four major sociological thinkers prior to 1850 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 72819) Seminar.

716 CONTEMPORARY SOCIOLOGICAL THOUGHT 3 credits
Prerequisite: 722, graduate standing in sociology, or permission. Intensive, critical analysis of current scholarship in a broad range of contemporary sociological theories. Virtually all required reading will be from primary sources. (Same as KSU 72505) 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 utilization. Social, class, and gender stratification of health care. (Must be repeated for a minimum of six credits.) (Same as KSU 72238)

727 SOCIOLOGY OF OCCUPATIONS, PROFESSIONS AND HEALTH CARE 3 credits
Prerequisite: Graduate standing in Sociology or permission of instructor. Sociological examination of the organization of work in the health care field with emphasis on occupations, foci, and health care delivery. (Same as KSU 72327)

728 SOCIOLOGY OF MENTAL HEALTH AND MENTAL DISORDERS 3 credits
Prerequisite: Graduate standing in Sociology or permission of instructor. Sociological examination of the social processes that affect mental health, that frame cultural ideas of normality and illness, and that define clinical pathology. (Same as KSU 72226)
641 URBAN ECONOMIC GROWTH AND DEVELOPMENT 3 credits
Prerequisite: permission. Examination of urban economic unit and its susceptibility to social, economic, political, and physical changes.

642 PUBLIC BUDGETING 3 credits
Prerequisite: permission. Current professional practice and theoretical issues in public budgeting 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 major policy issues; and the analysis of policy implementation and policy impact.

644 PUBLIC SECTOR FUND MANAGEMENT 3 credits
Prerequisites: 640, 642. Provides an overview of theoretical approaches for recording and reporting data related to public projects or programs and reviews methods for investing project 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 administration of labor contracts.

647 AGING POLICY 3 credits
In this course students will examine political institutions that impact the adoption and implementation 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 analysis.

651 INTRODUCTION TO CITY MANAGEMENT 3 credits
Prerequisite: completion of 611 or waiver by advisor. This course examines the historical role of city management in professionalizing local government operations and examines trends in management practice that affect the city manager.

656 STRATEGIC MANAGEMENT IN PUBLIC AND NON-PROFIT SECTORS 3 credits
This course examines management's effort to produce fundamental 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
Prerequisites: 620, 642. Provides in-depth theoretical overview of the public project cycle including design decision, analysis and management. Examines frameworks for implementation, monitoring and analysis of project impact.

662 FUNDRAISING AND RESOURCE MANAGEMENT 3 credits
Prerequisite: permission. Alternative methods of fundraising and unique resource management challenges and opportunities of non-profit organizations.

663 NON-PROFIT MANAGEMENT 3 credits
Prerequisite: permission. This course will provide students with a broad understanding of the operating environment, unique concerns of leadership, development, aspects of volunteerism, and management processes in 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 information as an organizational asset.

667 RESEARCH FOR FUTURES PLANNING 3 credits
Prerequisites: 600 and 601 and completion of eight credits of core curriculum in urban studies. An overview of the techniques associated with the field of futures research and their application 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 human 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 environments.

673 COMPUTER APPLICATIONS IN PUBLIC ORGANIZATIONS 2 credits
Prerequisites: 600 and 603. Introduction to microcomputer applications in the public sector, including data entry, statistical analysis, report writing, graphical representation and spreadsheets.

674 ANALYTICAL TECHNIQUES FOR PUBLIC ADMINISTRATORS 3 credits
Prerequisites: 600. Public sector application of techniques for analyzing policy proposals and public decision-making in urban areas.

675 ADVANCED TECHNIQUES IN POLICY ANALYSIS 3 credits
Prerequisites: 600, 601. Public sector application of quantitative methods, including decision analysis, queue theory, mathematical programming, and simulation.

681 SELECTED TOPICS IN URBAN STUDIES 1-3 credits each
Prerequisite: permission. Selected topics in specific areas of urban planning, in various developmental processes of cities, or in various urban policy and administrative issues. (A maximum of 27 credits may be earned in 680 and 681)

690 URBAN STUDIES SEMINAR 1-3 credits
Prerequisites: 16 credits of urban studies core plus one other 600-level course. Directed individual readings or research on specific area or topic.

691 MASTER’S COLLOQUIUM 1 credit
This course is required for masters students on assistantships. The course reviews programmatic, research, and curricular issues in the masters program.

695 INTERNSHIP 1-2 credits
Faculty-supervised work experience for “pre-service” students participating in policy planning and administration in public and non-profit organizations.

697 INDIVIDUAL STUDIES 1-3 credits each
Prerequisite: permission. May be repeated for a total of six credits) Directed individual readings or research on specific area or topic.

699 MASTER’S THESIS 1-9 credits
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.)

700 ADVANCED RESEARCH METHODS I 3 credits
Prerequisite: master’s level statistics or permission. Introduction to statistical techniques and methodologies in doctoral and postdoctoral research. Emphasis on conceptual and mathematical interrelationships.

701 ADVANCED RESEARCH METHODS II 3 credits
Prerequisites: 600, or equivalent. Continuation of 600. Emphasis placed upon concepts and mathematical interrelationships of multivariate statistical techniques as well as application of these techniques through computer analysis of urban data sets.

702 URBAN THEORY I 3 credits
Prerequisite: permission. Review of major theoretical traditions examining urban problems; for students entering the doctoral program in urban studies (first in two-course sequence).
### Graduate Courses

#### PUBLIC HEALTH

**8300:**

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<th>Course Number</th>
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<tr>
<td>601</td>
<td>PUBLIC HEALTH CONCEPTS</td>
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<tr>
<td>602</td>
<td>SOCIAL AND BEHAVIORAL SCIENCES IN PUBLIC HEALTH</td>
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<td>603</td>
<td>EPIEMOLOGY IN PUBLIC HEALTH</td>
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<td>604</td>
<td>BIOSTATISTICS IN PUBLIC HEALTH</td>
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<td>605</td>
<td>HEALTH SERVICES ADMINISTRATION IN PUBLIC HEALTH</td>
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<td>606</td>
<td>ENVIRONMENTAL HEALTH SCIENCES IN PUBLIC HEALTH</td>
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<tr>
<td>607</td>
<td>PUBLIC HEALTH PRACTICE AND ISSUES</td>
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#### Engineering

**4100:**

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<td>600</td>
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<tr>
<td>607</td>
<td>ENGINEERING MANAGEMENT REPORT</td>
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#### CHEMICAL ENGINEERING

**4200:**

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<tr>
<td>521</td>
<td>FUNDAMENTALS OF MULTIPHASE TRANSPORT PHENOMENA</td>
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<td>535</td>
<td>PROCESS ANALYSIS AND CONTROL</td>
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<td>541</td>
<td>PROCESS DESIGN I</td>
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<td>561</td>
<td>SOLIDS PROCESSING</td>
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<td>566</td>
<td>DIGITIZED DATA AND SIMULATION</td>
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<td>570</td>
<td>ELECTROCHEMICAL ENGINEERING</td>
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<td>572</td>
<td>SEPARATION PROCESSES IN BIOCHEMICAL ENGINEERING</td>
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<td>600</td>
<td>TRANSPORT PHENOMENA</td>
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<td>605</td>
<td>CHEMICAL REACTION ENGINEERING</td>
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<td>610</td>
<td>CLASSICAL THERMODYNAMICS</td>
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<td>621</td>
<td>SURFACE SCIENCE IN CHEMICAL ENGINEERING</td>
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<td>622</td>
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<td>PHYSICAL PROPERTIES OF STRUCTURAL BIOPOLYMERS</td>
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<td>NONLINEAR DYNAMICS AND CHAOS</td>
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<td>633</td>
<td>COLLOIDS—PRINCIPLES AND PRACTICE</td>
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<td>635</td>
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<td>640</td>
<td>ADVANCED PLANT DESIGN</td>
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<td>674</td>
<td>RENEWABLE RESOURCES FOR ENVIRONMENTALLY BENIGN CHE PRODUCTION</td>
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<td>680</td>
<td>HETEROGENEOUS CATALYSIS</td>
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<td>ADVANCED TRANSPORT PHENOMENA</td>
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<td>702</td>
<td>MULTIPHASE TRANSPORT PHENOMENA</td>
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<td>706</td>
<td>ADVANCED REACTION ENGINEERING</td>
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<td>711</td>
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<tr>
<td>715</td>
<td>MOMENTUM TRANSPORT</td>
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<td>720</td>
<td>ENERGY TRANSPORT</td>
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<tr>
<td>721</td>
<td>TOPICS IN ENERGY TRANSPORT</td>
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<tr>
<td>725</td>
<td>MASS TRANSFER</td>
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567 ADVANCED HIGHWAY DESIGN 3 credits
Prerequisite: 664. Autocad, or permission. Compu-networked geometric design of highways in a client/server data input, digital terrain modeling, cross-section templates, horizontal and vertical roadway design, earthwork computations, and advanced topics.

568 HIGHWAY MATERIALS 3 credits
Prerequisites: Permission. Properties of aggregates, manufacture and properties of portland cement, asphalt concrete, properties of asphaltic materials, design and testing of mix asphalt pavement mixes and of surface treatments. Laboratory preparation of specimens and determination of test properties. Graduate requirement: Graduate students will be required to perform an additional eight-hour asphalt laboratory (Alison recovery of asphalt from solution) and to prepare a paper on a highway materials topic.

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.

604 DYNAMICS OF STRUCTURES 2 credits

605 STRUCTURAL STABILITY 3 credits

606 ENERGY METHODS AND ELASTICITY 3 credits

607 PRESTRESSED CONCRETE 3 credits
Basic concepts. Design of double-tie roof girder; shear; development length; columns; piles; design of highway bridge girder; pretensioned, post-tensioned; continuous girder, box, ribs; volume-change forces; connections.

608 MULTISTORY BUILDING DESIGN 3 credits
Floor systems; staggered truss system; brace frame design; unbraced frame design; drift in floors; moment, (tube and partial tube) systems; earthquake design; fire protection. Analysis by STRUDL.

609 FINITE ELEMENT ANALYSIS I 3 credits
Prerequisite: 654 or equivalent. Introductory development of finite element method as applied to structural mechanics from continuum mechanics. Such areas as plate, axi-symmetric and 3-D stress analysis; conduction, fluid mechanics; transient problems an geometric and material non-linearity.

610 COMPOSITE MATERIALS IN CIVIL INFRASTRUCTURE 3 credits
Prerequisite: 654 or equivalent. Constituent materials; manufacturing processes; panel properties. Analysis of laminated composite beams, columns, and applications to highway bridges; composites in concrete and wood structures.

611 FUNDAMENTALS OF SOIL BEHAVIOR 2 credits
Introduction to theory and laboratory for 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, equilibrium, and pore water pressure as applied to mechanical behavior of soil masses.

613 ADVANCED GEOTECHNICAL TESTING 2 credits
Prerequisites: 518, 62. 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
Prerequisite: 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 2 credits
Prerequisite: 604 or permission. Soil-structure interaction theory and applications to under ground structures including conduits, tunnels and shafts. Advanced foundation construction methods and problems including dewatering, soil stabilization, underpinning and caisson construction. Slope stability analysis.

616 SOIL IMPROVEMENT 3 credits
Prerequisite: 654 or 62 or permission. Theory of stabilization, compaction with vertical drains, blasting, vibrocompaction, injection and grouting, thermal methods, electro-osmosis, soil reinforcement, case studies.

617 NUMERICAL METHODS IN GEOTECHNICAL ENGINEERING 3 credits
Theory of stress and strain within flow and through solid, consolidation, soil-structure interaction, piling, stress-deformation analysis of earth structures.

618 ROCK MECHANICS 3 credits
Prerequisite: 564 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
Application of both laboratory methods and theory to solution of sanitary engineering problems involving water pollution, stream regeneration, special industrial wastes, detergents and others.

621 ENVIRONMENTAL ENGINEERING PRINCIPLES 4 credits
Corequisite: 623. 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 environments. Emphasis on carbonate in open systems, metal complexation, solubility, and oxidation-reduction reactions.

623 PHYSICAL/CHEMICAL TREATMENT PROCESSES 3 credits
Prerequisites: Corequisite: 621. Theory, current research associated with biochemical processes, the impact on design-activatedcoagulation/precipitation, sedimentation, filtration, absorption processes, chlorination, disinfection.

624 BIOLOGICAL WASTEWATER TREATMENT PROCESSES 3 credits
Prerequisite or corequisite: 621. Theory, current research associated with biological processes, related physical/chemical processes, the impact on design-activated sludge, fixed film processes, Den, gas transfer, sludge stabilization, sludge dewatering processes emphasizing.

625 WATER TREATMENT PLANT DESIGN 3 credits
Prerequisite: 622. Design of water treatment plants for potable, industrial and commercial use. Development of water sources, treatment processes and financing used to design best practical methods in terms of cost-benefits.

626 WASTEWATER TREATMENT PLANT DESIGN 3 credits
Prerequisite: 624. Application of theory and fundamentals to design of wastewater treatment plants. Development of design methodologies for biological and chemical stabilization of wastewater to meet water quality criteria. Economic analyses made to determine best practical designs to be utilized.

627 ENVIRONMENTAL OPERATIONS LABORATORY 2 credits
Prerequisite: Permission of instructor. Conduction of laboratory experiments related to the design and operation of water and wastewater treatment processes. Experimental design, data analysis, interpretation and report preparation.

628 ADVANCED CHEMICAL OXIDATION PROCESS 3 credits
Prerequisites: Permission. Qualitative and quantitative treatment of variables that govern process chemistry and kinetics in water. Emphasis on ozone, hydrogen peroxide, and ultraviolet light (UV).

631 SOIL 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 3 credits
Prerequisite: 621 or permission. Introduction to air pollution control philosophies, approaches, regulations, and modeling. Also contains an in-depth evaluation/design approach for the control of particulate matter, SOx and NOx.

640 ADVANCED FLUID MECHANICS 3 credits

644 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
Discusses different aspects 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; design analysis of shore, offshore structures. Movement, transportation of sediments in lake shore areas.

647 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, free-way ramp metering, and highway traffic safety.

648 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, free-way ramp metering, and report preparation.

650 TRAFFIC DATA AND DATA ANALYSIS 3 credits
Prerequisite: Permission. Theory and application of pressure tubes, loop detectors, and imaging sensing, microwave, infrared, ultrasonic, laser detectors, parameter estimation, reliability, and data mining and its applications.

651 ADVANCED ENGINEERING MATERIALS 3 credits
Selected topics on principles governing mechanical behavior of materials with respect to elastic, plastic and creep responses, stress rupture, low and high cycle and thermal fatigue. Failure theories and fracture phenomena in brittle and ductile materials. Crack propagation and life prediction of engineering materials.

652 ELASTICITY 3 credits

653 ELASTICITY 3 credits

654 ADVANCED REINFORCED CONCRETE DESIGN 3 credits

655 ADVANCED STEEL DESIGN 3 credits

660 EXPERIMENTAL METHODS IN STRUCTURAL MECHANICS 3 credits

661 LIMIT ANALYSIS IN STRUCTURAL ENGINEERING 3 credits

664 ADVANCED SEMINAR IN CIVIL ENGINEERING 1-6 credits
Prerequisite: permission. Advanced projects, reading, studies, or experimental in various areas of civil engineering.

665 ENGINEERING REPORT 2 credits
Prerequisite: Permission of advisor. A relevant problem in civil engineering for students electing the non-thesis option. The final engineering report must be approved by the advisor and the advisory committee.

666 MASTER’S RESEARCH 1-6 credits
Prerequisite: Permission of advisor. (May be repeated.) Research on a suitable topic in civil engineering culminating in a master’s thesis.

667 MASTER’S THESIS 1-6 credits
Prerequisite: permission. Research and thesis on a suitable topic in civil engineering as approved by department. Defense of thesis is by final examination.

701 EARTHQUAKE ENGINEERING 3 credits
702 PLATES AND SHELLS

703 VISCOElasticITY AND VISCOPlASTicITY

704 Finite ELEMENT ANALYsis II
Prerequisites: 609 and 702 or permission. Curved, plate, shell brick elements. Quasi-analytical elements. Quadrature formulas. Substructuring for static and dynamic analyses. Solution algo-
rithms for linear and nonlinear static and dynamic analysis. Computer program formulation. Review of large scale production programs.

710 Advanced COMPOSITE MECHANICS
Prerequisite: 601. Analysis of short-fiber composites and statistical behavior, bending, buckling and wrinkling of laminated plates, shells, and composites. Advanced topics involving stress concentration, residual stress, fatigue, fracture toughness, nonlinear and viscoelastic stress-strain formula-
tions, solutions of nonlinear problems.

712 Dynamic PLASTICITY
Prerequisites: 683 or 703. Impulsive and transient loading of structural elements (beams, plates, shells, etc.) in which plastic deformation occurs. Topics include: longitudinal and transverse plastic wave propagation in thin rods, propagation of plastic hinges, rate-dependent viscoplastic waves, transverse impact on beams and plates, high-rate forming, blast loading, introduction perforation, shock waves in solids.

717 SOIL DYNAMICS
Prerequisites: 694 or permission. Vibration and wave propagation theory relating to soils, soil structure of foundations. Dynamic behavior of soils. Design of foundations for dynamic loading impact, pulsating and blast loads.

731 BIOMEDIcATION
Prerequisites: 690 or permission. Provide the fundamentals required for understanding and success fully implementing the biodegradation of hazardous compounds coupled with the design and operational techniques of bioremediation systems.

745 EMBEDDING
Discussion of parameters determining permeability of various soils. Analytical, numerical and experimental methods to determine two- or three-dimensional movement of groundwater. Unsaturated soils.

898 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.

899 DOCTORAL DISSERTATION
(May be taken more than once.) Prerequisite: acceptance of research proposal by the Inter-
disciplinary Doctoral Committee and approval of the dissertation director. Original research by the doctoral student.

ELECTRICAL ENGINEERING 4400:

548 OPTICAL COMMUNICATION NETWORKS
Optical waveguides and optical integrated components, optical transmitters and receivers, optical communication network design.

549 DIGITAL COMMUNICATION
Introduction to digital communication theory and systems; coding of analog and digital informa-
tion; digital modulation techniques. Introduction to information theory.

553 ANTENNA THEORY
Theory of EM fields. Wire antennas, arrays, receiving antennas, reciprocity, integral equa-
tions for induced currents, self and mutual impedances. Equivalent principle, radiation from aperture antennas.

556 MICROWAVES
Dynamic fields, Maxwell's equation and wave equations. Field analysis of wave guides, microwave components, techniques and systems.

557 WIRELESS COMMUNICATIONS
Prerequisite: 549. Theory and analysis of wireless communication systems, wireless propa-
gation, multiple access, modulation, demodulation, multipath channel characterization, diver-
ter, cellular, and PCS services and standards.

561 OPTICAL ELECTRONICS AND PHOTONIC DEVICES
Lightwave engineering, photonic principles and optical electronic device technology.

565 PROGRAMMABLE LOGIC
Electronic circuitry considerations in logic circuits, methods of sequential, threshold logic
analysis, synthesis, development of computer arithmetic elements; memory, storage devices,

570 Embedded SYSTEMS Interfacing
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.

572 CONTROL SYSTEMS
Prerequisites: 642. State variable analysis, design of control systems. Discrete systems, analysis, digital comput-
er control. Experiments include hybrid, PLC control system, digital computer control.

574 SYSTEM SIMULATION
Computer simulation of dynamic systems. Discrete system stability, linear multivariable and Runge-Kutta methods, nonlinear systems, stiff systems, distributed systems and real-time computing.

583 POWER ELECTRONICS I
Prerequisite: 602 or equivalent. Elements of power electronics circuit design. Rectifiers, inverters, voltage source inverters.

584 POWER ELECTRONICS LABORATORY AND DESIGN PROJECT
Prequisites: 603 and 702 or permission. Experiments on different types of power electronic devices: AC/DC, DC/DC, DC/AC, and AC/DC. Design project to include design, simulation, building, and testing of a power electronic circuit.

585 ELECTRIC MOTOR DRIVES
Prerequisite: 602 or equivalent. 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
Prerequisite: 615 or permission. Analysis of electric and hybrid vehicles. Characterizations of electric machines, engines, transmissions, batteries, fuel cells, ultracapacitors. Vehicle control strategies, communication networks and the overall system integration.

596 SPECIAL TOPICS: ELECTRICAL ENGINEERING
(May be taken more than once.) Prerequisite: permission of department chair. Special topics in electrical engineering.

641 Random SIGNAL ANALYSIS
Prerequisite: 549 or permission. Analysis, interpretation and smoothing of engineering data through application of statistical and probability methods.

678 Control SYSTEM THEORY
Prerequisites: 642 or permission. Corequisite: 674 or equivalent. Advanced control systems and signal modeling are investigated in detail. Applications of theory include speech processing, optimal filtering, biomedical systems, digital communications.

673 NONLINEAR CONTROL
Corequisite: 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 planes, conservative systems, Lyapunov theory, bifurcation of attractors, and route to chaos.

674 Control SYSTEM THEORY
Advance modern control theory for linear systems. Controllability, observability, minimal real-
alizations of multivariable systems, stability, state variable feedback, estimation, and an intro-
duction to optimal control.

680 Dynamics and CONTROL OF POWER ELECTRIC CIRCUITS
Prerequisite: 682 or equivalent. Analytical and numerical methods for rectifiers and DC/DC converters. Small and large signal models of the acyclic steady-state. Feedback controls using classical and modern approaches.

685 Dynamics of ELECTRIC MACHINES
Prerequisite: graduate status in Electrical Engineering. Voltage and mechanical differential equations of electric machines, analytical and numerical methods for solution of a system of inhomogeneous differential equations.

687 POWER ELECTRONICS II
Prerequisite: 583 or equivalent. Effect of the nonlinearities of the power circuit components, magnets, base and gate drives, thyristor commutation circuits, heat transfer and thermal issues. Analysis and design of advanced power circuits.

688 CONTROL OF ELECTRIC MACHINES
Prerequisites: graduate student in Electrical Engineering. Elements of control circuits for elec-
dric drives, techniques for torque/speed control of electric machines.

690 Power SEMICONDUCTOR DEVICES
Prerequisite: graduate status in Electrical Engineering. Structure and physics of power semi-
conductor devices: diodes, Bipolar junction transistors, MOSFets, Thyrystors, Power MOS- Bipolar devices (IGTMCT). Emphasis on the issues that characterize these devices from the power semiconductor design viewpoint.

693 Special PROBLEMS
(May be taken more than once.) Prerequisite: permission of department chair. For a qualified graduate student. Supervised research or investigation in major field of training or experience. Credits depend upon nature and extent of project.

695 Master'S RESEARCH
(3 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
Prerequisite: permission of department chair. Research and thesis on some suitable topic in electrical engineering.

712 TOPICS IN ELECTROMAGNETICS
Prerequisite: 691. Introduction to advanced techniques in fields. Topics include application of Green's function techniques and related boundary value problems.

713 MODULATION TECHNIQUES FOR CONTROL SYSTEMS
Prerequisite: 6/4 or permission of the instructor. Classical, modern, and optimal techniques for computing reduced order models and noise and distortion in digital modulations. Fundamental techniques of multi-variable systems. Min-
imal realizations of multivariable systems are also considered.

715 Advanced LINEAR CONTROL SYSTEMS
Prerequisite: 650 or equivalent. Corequisite: 641 or equivalent. Covers advanced topics related to the design of robust control systems. The synthesis of controllers which yield stable closed-loop systems will be considered. The H-optimal criterion for controller design is included. Special empha-
sis will be given to the robust stabilization problem and the disturbance attenuation problem.
516 HEAT TRANSFER PROCESSES
Analysis of design of extended surfaces. Natural convection and mixed convection, combined methods of heat transfer with fluid flow. 3 credits

522 EXPERIMENTAL STRESS ANALYSIS I
Experimental methods of determining stress or strain: brittle failure, strain gages, photoelasticity, full field thermal techniques. 3 credits

530 MACHINE DYNAMICS
Static and dynamic forces in machines, products of inertia, dynamic equivalence, flywheels. Balancing of rating, reciprocating, cyclic plane motion. Computer simulation of transient mechanism dynamics. 3 credits

531 FUNDAMENTALS OF MECHANICAL VIBRATIONS
Undamped and forced vibrations of systems having one or two degrees of freedom. 3 credits

532 VEHICLE DYNAMICS
Applications of dynamic systems analysis techniques to road vehicles. Newtonian and Lagrangian methods. Tire/road interface. Ride characteristics, handling and stability. Digital simulation. 3 credits

450 SYSTEM DYNAMICS AND CONTROL
Prerequisites: Permission by instructor. Laplace transforms. Mathematical models of physical systems. Transient response and stability. Error analysis and system accuracy. Root locus methods in design. Frequency analysis and design. Compensation techniques. 4 credits

899 DOCTORAL DISSERTATION (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. 1-15 credits

115 Graduate Courses

774 ROBUST CONTROL
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. 3 credits

777 OPTIMAL CONTROL II
Prerequisite: 677 Advanced state-feedback optimal control. Output-feedback issues, including linear-quadratic optimal recovery, optimal observer design, reduced-order controllers, frequency weighting, and decentralized control. 3 credits

778 ADAPTIVE CONTROL
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 square estimation, certainty equivalence adaptive control, Kalman filtering, minimum variance control, LQG control and stochastic adaptive control. 3 credits

794 ADVANCED TOPICS IN CONTROL
Prerequisite: 796. Discussions of recent advances in control systems. 3 credits

794 ADVANCED SEMINAR (May be taken more than once) Prerequisite: permission of department chair. Advanced level coverage of specialized topics. For student seeking Ph.D. in engineering. 1-3 credits

898 PRELIMINARY RESEARCH (May be repeated.) Prerequisite: approval of dissertation director. Preliminary investigations prior to submission of a dissertation proposal to the Interdisciplinary Doctoral Committee. 1-6 credits

899 DOCTORAL DISSERTATION (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. 1-15 credits

COMPUTER ENGINEERING 4450:

510 EMBEDDED SCIENTIFIC COMPUTING
Prerequisite: Permission by instructor. Organization of scientific and engineering problems for computer solutions. Analysis of error and convergence properties of algorithms. 3 credits

520 FRAME-BASED DESIGN OF ENGINEERING SYSTEMS
Prerequisite: 510. Investigation of object-oriented design paradigm and the design implementation with the object-oriented programming language C++. 3 credits

543 FRAME-BASED EXPERT SYSTEM DESIGN
Prerequisite: Permission of instructor. Introduction to the design and development of frame-based expert systems. 3 credits

570 VLSI CIRCUITS AND SYSTEMS
Prerequisite: 565. Designed for students at a level sufficient to provide an introduction to VLSI design. Discussion of static and dynamic CMOS, PLAs, ROMs, and RAMs. Layout methodologies and tools. System architecture. 3 credits

598 SPECIAL TOPICS: COMPUTER ENGINEERING (May be taken more than once) Prerequisite: permission of department chair. Special topics in computer engineering. 1-3 credits

600 COMPUTER ARCHITECTURE
Prerequisite: 570. Historical development of computer architecture. Design methodologies. Processor organization and design of instruction sets. Parallel processing. Control section implementations. Memory organization. System configurations. 3 credits

607 PARALLEL COMPUTER ARCHITECTURE
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. 3 credits

620 REAL TIME SCHEDULING
Prerequisite: Permission of instructor. Advanced study of real-time systems. Theory of fixed priority scheduling for real-time systems. Aperiodic, Periodic, and Sporadic Task scheduling. 3 credits

642 ADVANCED KNOWLEDGE ENGINEERING
Prerequisite: Permission of instructor. Advanced level coverage of various topics. Intended for student seeking Ph.D. in engineering. 3 credits

643 ALGORITHMS AND DATA STRUCTURES
Prerequisite: 640. Advanced level coverage of algorithms and data structures. 3 credits

650 THERMAL SYSTEM COMPONENTS
Prerequisite: 670. Study of techniques of heat exchangers, pumps, compressors, turbines and expansion engines. 3 credits

500 HEATING AND AIR CONDITIONING
Prerequisite: Permission of instructor. Study of heat exchangers, pumps, compressors, turbines and expansion engines. 3 credits

500 COMPRESSIBLE FLUID MECHANICS
Prerequisite: 520. Study of the behavior of ideal and real gases. Equations of state, compressibility, shock waves, and supersonic flow. 3 credits

500 FUNDAMENTALS OF FLIGHT
Prerequisite: 500. Study of the basic principles of flight, including airfoil theory, wing sections, stability and control, and flight mechanics. 3 credits

510 INTRODUCTION TO AERODYNAMICS
Prerequisite: 510. Introduction to aerodynamic concepts, conformal transformations, theory of thin airfoils, 2- and 3-dimensional airfoil theory, optimal wings of finite span, lifting line theory, lumped vortex, vortex-tiles, and panel methods. 3 credits

511 INTRODUCTION TO AEROSPACE PROPULSION
Prerequisites: 510/511. Study of the principles of propulsion currently used in aerospace fields; propulsion principles for turbojet engines, rockets, and rocket propulsion. 3 credits

515 ENERGY CONVERSION
Topics from fields of internal combustion engines, cycle analysis, modern combustion devices. 3 credits

522 THERMAL SYSTEMS
Prerequisite: 510. Study of heat transfer and fluid mechanics. 3 credits

530 MACHINE DYNAMICS
Prerequisite: 510. Study of the forces in machines, products of inertia, dynamic equivalence, flywheels. Balancing of vibration, reciprocating, cyclic plane motion. Computer simulation of transient mechanism dynamics. 3 credits

531 FUNDAMENTALS OF MECHANICAL VIBRATIONS
Study of the fundamentals of mechanical vibrations. 3 credits

532 VEHICLE DYNAMICS
624 FUNDAMENTAL OF FRACTURE MECHANICS 3 credits
Prerequisite: 622 or permission of instructor. Methods of stress analysis in elastic media containing bodies and cracks geometries of brittle fracture. Dynamic crack propagation. Fatigue fractures. Finite element approaches to fracture mechanics.

625 ANALYSIS OF MECHANICAL COMPONENTS 3 credits
Theories of failure and plastic flow. Fatigue, creep analysis and introduction to fracture mechanics.

626 FATIGUE OF ENGINEERING MATERIALS 3 credits
Prerequisite: 624 or permission. Quasistatic and cyclic behavior, dislocation networks and their interactions; deformation, creep-fatigue interactions; crack initiation; crack propagation; short cracks; crack closure; environmental effects.

627 ADVANCED MATERIALS AND MANUFACTURING PROCESSES 3 credits
Modern materials processing, casting, forging, powder manufacture; rheological aspects of bulk deformation, casting, joining, forming, machining, molding, powder metallurgy, rapid solidification, economic aspects; technical activity.

628 MECHANICAL BEHAVIOR OF MATERIALS 3 credits
Mechanical behavior of engineering materials; metallography of deformation; dislocation effects and deformation; strengthening mechanisms; thermomechanical processing; mechanical testing.

629 NONLINEAR ENGINEERING PROBLEMS 3 credits

630 VIBRATIONS OF DISCRETE SYSTEMS 3 credits
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.

631 KINETIC DESIGN 3 credits

632 RELIABILITY IN DESIGN 3 credits

633 COMPUTERIZED MODAL ANALYSIS OF STRUCTURES 3 credits
Prerequisite: 5430 or equivalent. Modal analysis theory and measurement techniques, classical and spatial processing concepts, structural dynamics theory, modal parameter estimation with “hands-on” experience in the application of modal measurement methods in vibration analysis.

634 ADVANCED DYNAMICS OF ROTATING MACHINERY 3 credits
Prerequisites: 520 or equivalent. Dynamic modeling and simulation of complex rotating systems. Steady state, transient and stability analysis with inertia, gyroscopic, imbalance, torsional, disk-skew and impeller interactions.

635 STRESS WAVES IN SOLIDS AND FLUIDS 3 credits

642 SYSTEM ANALYSIS AND CONTROL DESIGN 3 credits
Uniform methods of modeling and response analysis, controllability and observability, stability theory and analysis of linear and nonlinear engineering processes. Design of feedback controls for optimum performance for multivariable real-time control application.

645 PROCESS IDENTIFICATION AND COMPUTER CONTROL 3 credits
Prerequisite: Permission of instructor. Obtaining mathematical models of processing from noisy observations. Methods of digital control design. Case studies on computer control of selected processes.

646 EXPERT SYSTEMS IN CONTROLS AND MANUFACTURING 3 credits
Prerequisite: 540 or equivalent or by permission. Expert system methodologies for process control, computer integrated flexible manufacturing and robotics.

647 NEURAL AND FUZZY CONTROL SYSTEMS 3 credits
Prerequisite: 540 or permission of instructor. Analysis and design of intelligent control systems. Neural networks and fuzzy sets for process identification and controller design. Applications and case studies in industry.

650 TRIBOLOGY 3 credits
Fundamentals of lubrication and wear treatment: includes basic theory, advanced topics, applications, and bearing materials. Specific topics include adhesive and abrasive wear, boundary lubrication, fluid film lubrication and bearings, roles of bearing elements, bearing selection and design.

655 MICRO- AND NANO-FLOID DYNAMICS 3 credits
Prerequisite: 611 or permission of instructor. This course includes fundamentals of the analytical and numerical solutions of the problems pertinent to fluid mechanics on nano- and micro-scale. Applications will include micro-engines, MEMS, micro-filters, and synthesis of nano-motors.

660 ENGINEERING ANALYSIS 3 credits
Prerequisite: B.S. in engineering. Study of analysis techniques as applied to specific engineering problems. Applications include beam deflections, acoustic, heat conduction and hydrodynamic stability.

661 FAILURE ANALYSIS OF MECHANICAL SYSTEMS 3 credits
Prerequisite: 625 or permission. This course emphasizes engineering techniques for predicting, yielding, buckling, fracture and fatigue of mechanical systems. Students will be taught how to link theory with practice by examining case studies of structural and mechanical failures and will obtain practical experience in modeling real complex systems in an end-to-end project.

662 MICROSCALE HEAT AND MASS TRANSFER 3 credits
Prerequisites: 608 and 615 or permission. Kinetics theory, classical and quantum statistics, structure of solids, phonons in solids, free electrons in metals, Boltzmann transport theory, hydrostatic heat conduction, thermal conductivity of thin films, laser materials processing.

663 WEB-BASED SOLID MODELING AND E-MANUFACTURING 3 credits
Prerequisite: 560 or equivalent. Team-based collaborative design with a web-based solid modeling library, feature-based manufacturing analysis, and process planning using cross-platform interoperable tools including JAVA, VML, for optimized product realization.

664 FUNDAMENTALS OF CRYSTALLOGRAPHY AND SOLIDIFICATION 3 credits
Prerequisite: 608 or equivalent. Fundamental theories of crystalline nucleation and growth, interface stability and morphology, microstructure formation, and microsegregation. Applications in casting, welding, laser processing, and single crystal growth.

667 INTEGRATED FLEXIBLE CELLULAR MANUFACTURING SYSTEM- ANALYSIS AND DESIGN 3 credits
Prerequisite: 663 or equivalent or by permission of instructor. The analysis of integrated computer-aided manufacturing systems, design of automated manufacturing components and simulations of flexible cellular manufacturing systems.

671 FUNDAMENTALS AND APPLICATIONS OF MICRO ELECTRO MECHANICAL SYSTEMS 3 credits
Fundamentals of MEMS based sensors and actuators, MEMS materials, bulk and surface micromachining and MEMS device testing. Application in optics, automotive, and biomedical instrumentation.

672 DESIGN OF MICROSYSTEMS AND NANO DEVICES 3 credits
Design examples of various devices: thermal sensors and actuators, microfluids devices, microstructure analysis and simulation, microfabrication process design and rules. Applications in MEMS, lab-on-a-chip devices, BioMEMS and NEEMS.

673 MEASUREMENTS METHODS AND EXPERIMENTAL ERROR IN THERMOFLUID SCIENCES 3 credits
The course will incorporate elements of experimental error analysis, optics, and optical ray tracing, principles of testing, methods and devices for fluid flow quantization and temperature measurements. Laboratory work with hands-on experience.

674 DEFORMATION AND FAILURE OF POLYMERS AND SOFT MATERIALS 3 credits
This course introduces the concepts of deformation, fracture, and failure analysis of engineering polymers, soft, and biological materials.

696 SPECIAL TOPICS IN MECHANICAL ENGINEERING 1-4 credits
Prerequisite: Permission of advisor. 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.

698 RESEARCH 1-6 credits
Prerequisite: Permission of advisor. (May be repeated.) Research on a suitable topic in mechanical engineering culminating in a master’s thesis.

699 THESIS 1-6 credits
Prerequisite: permission of advisor. (May be repeated.) Supervised research in a specific area of mechanical engineering.

704 FINITE ELEMENT ANALYSIS 3 credits

705 FINITE ELEMENT ANALYSIS II 3 credits

710 DYNAMICS OF VISCOUS FLOW II 3 credits

711 COMPUTATIONAL FLUID DYNAMICS II 3 credits
Prerequisite: 651 or permission of instructor. Development of advanced computational techniques for convection-dominated flows. Higher order explicit and implicit schemes including nonscissiall front-capturing methods applied to benchmark problems.

715 HYDRODYNAMIC STABILITY 3 credits

719 ADVANCED HEAT TRANSFER 3 credits
Prerequisites: 655, 656. Topics include nonhomogeneous or nonlinear boundary value problems of heat conduction, heat transfer with melting, solidification and ablation, heat transfer in porous systems and hydrodynamically and thermally unsteady convection.

723 APPLIED STRESS ANALYSIS II 3 credits
Prerequisite: 622. Continuation of 623. Development of approximate solution techniques including finite elements, method of weighted residuals (Rayleigh-Ritz, Galerkin, Trefftz, collocation, least squares, etc.) and finite differences.

726 NONLINEAR CONTINUUM MECHANICS 3 credits
Prerequisite: 650. Finite deformation solids, strain, stress constitutive equations, strain energy functions. Solution of finite deformation problems in hyperelasticity, coupled thermoviscoelasticity and plasticity, electroelasticity and micropolar theories.

730 VIBRATIONS OF CONTINUOUS SYSTEMS 3 credits
Prerequisite: 630. Analysis of continuous vibrating systems, using separation of variables, energy, variational, Rayleigh-Ritz and other approximate techniques. Concepts and solutions of integral equations as applied to continuous systems.

732 ADVANCED MODAL ANALYSIS OF STRUCTURES 3 credits

741 OPTIMIZATION THEORY AND APPLICATIONS 3 credits
Prerequisite: Permission by instructor. Theory of optimization in engineering systems, development and method of solution optimization problems for physical processes, large systems. Use of dynamic programming, operational research methods of system optimization, control.

763 ADVANCED METHODS IN ENGINEERING ANALYSIS 3 credits
Application of finite difference and finite element methods, variational methods, integral methods and similarity transforms to engineering problems in heat transfer, fluid mechanics and vibrations.

780 ADVANCED SEMINAR IN MECHANICAL ENGINEERING 1-4 credits
(May be repeated for a total of nine credits) Prerequisite: permission of department chair. Advanced projects and studies in the field of mechanical engineering. Intended for student seeking Ph.D in engineering degree.

889 PRELIMINARY RESEARCH 1-5 credits
Prerequisite: approval of dissertation director. Preliminary investigations prior to the submission of a dissertation proposal to the Interdisciplinary Doctoral Committee.

899 DOCTORAL DISSERTATION 1-5 credits
May be taken more than once. Prerequisite: acceptance of research proposal by the Interdisciplinary Doctoral Committee and approval by the dissertation director. Original research by the doctoral student.
522 PHYSIOLOGICAL CONTROL SYSTEMS 3 credits
The basic techniques employed in control theory, systems analysis, and model identification as they apply to physiological systems.

530 DESIGN OF MEDICAL IMAGING SYSTEMS 3 credits
Prerequisites: Permission of instructor. Physical principles and engineering design of medical imaging systems, with emphasis on digital radiography, computed tomography, nuclear medicine, ultrasound, and magnetic resonance.

535 IMAGE SCIENCE 3 credits
Prerequisites: Permission of the instructor. Principles of image science, image performance parameters, and image assessment techniques of medical imaging systems, with emphasis on digital radiography, computed tomography, magnetic resonance imaging, and ultrasound.

537 PHYSICS OF MEDICAL IMAGING 3 credits
Physical principles of medical imaging modalities with emphasis on the properties, general mechanisms, and interaction of radiation with matter, physics of the image formation and optimization.

560 EXPERIMENTAL TECHNIQUES IN BIOMACHINES 3 credits
Prerequisites: Permission. Principles of testing and measuring devices commonly used for biofluid and biosolid mechanics studies. Laboratories for demonstration and hands-on experience.

570 HUMAN FACTORS ENGINEERING 3 credits
Reliability and human error, human capabilities and limitations, crew protection, display systems, controls and control actions, interface design principles, risk management, safety and risk prevention.

600 BIOMEDICAL ENGINEERING COLLOQUIUM 1 credit
May be repeated for a maximum of 16 credits) The Biomedical Engineering Colloquium is a seminar series designed to introduce students to current topics in biomedical engineering research, design, and business.

601 BIOMEDICAL INSTRUMENTATION I 4 credits
Prerequisites: 3100:561 or equivalent. Clinical instrumentation to measure and display physiological 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 biomedical engineering disciplines including sampling distributions, hypothesis testing and estimation, ANOVA, probit analysis and nonparametric statistics.

620 NEURAL NETWORKS 3 credits
Development of highly parallel, distributed architectures for computing that are, to varying degrees, derived from structures observed in biological nervous systems. An overview of how real neurons operate, the course will examine both classical and modern computational architectures. Comparisons will be made with traditional serial machines and applications for which neural networks seem most promising will be examined.

621 SENSORY SYSTEMS ANALYSIS 3 credits
Prerequisite: Permission. Study of various sensory modalities from a systems engineering perspective. Techniques from linear and nonlinear systems analysis are applied to aspects of vision, hearing, touch, and position sensing in humans. Comparisons are made with artificial emulations of these senses.

623 PROCESSING OF BIOMEDICAL SIGNALS 3 credits
Prerequisites: 3100:561 or equivalent. Introduction to the analysis of biomedical continuous signals and point processes including discriminant and principal component analysis, histograms, correlograms and data displays.

624 IMAGE PROCESSING FOR BIOMEDICAL DATA 3 credits
Image sampling, quantization, and transforms. Enhancements including smoothing and sharpening. Restoration using inverse and Wiener filters. Edge detection and thresholding with morphological operators for segmentation.

627 ADVANCES IN DRUG AND GENE DELIVERY SYSTEMS 3 credits
This course will examine technological innovations for the delivery of drugs and genes. Methods for delivering 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, AHMT, medical records, direct order entry, A.D., D.A. conversion, patient monitoring, peripherals and interfaces, diagnostic algorithms, automated EEG, ECG systems.

632 DIAGNOSTIC IMAGING TECHNIQUES 3 credits
An introduction to diagnostic imaging techniques as applied to Digital Radiography, Computerized Tomography (CT), nuclear medicine, ultrasound imaging, magnetic resonance imaging (MRI), and optical and confocal microscopy.

633 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.

634 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.

635 BIOMEDICAL NANOENGINEERING 3 credits
Prerequisite: Permission of instructor. Engineering principles of nanotechnology as applied to the design of instrumentation, systems and techniques, aimed to explore biocomputers and biomaterials at the microscale level, at one billionth of a meter.

636 SPINE MECHANICS 3 credits

636B SPINE MECHANICS 3 credits

637 SOFT CONNECTIVE TISSUE BIOMECHANICS 3 credits
Prerequisites: 3100:561 or equivalent; or permission. Physical properties and functional biomechanics of the soft connective tissues of bone. Theology and mechanics of fracture and fracture healing. Mechanics of external and internal fixators. Total joint implants and reconstruction techniques.

638 CONNECTIVE TISSUE BIOMECHANICS 3 credits
Prerequisites: 3100:561 or equivalent; or permission. Physical properties and functional biomechanics of the soft connective tissues of bone. Theology and mechanics of fracture and fracture healing. Mechanics of external and internal fixators. Total joint implants and reconstruction techniques.

644 MUSCLE MECHANICS AND OPTIMIZATION 3 credits
Prerequisite: Graduate standing in the College of Engineering or by permission. Human body joint kinetics, muscle mechanics and modelling. The principles of optimization as applied to muscle forces, along with muscle anatomy and physiology.

645 MECHANICS IN PHYSIOLOGY AND MEDICINE 3 credits
Blood rheology, mechanics of microcirculation, deformation theory, soft tissue mechanics, mechanics of blood and lymph circulation, kinetics and kinematics of orthopaedic joints. Clinical applications.

647 KINEMATICS OF THE HUMAN BODY 3 credits
Prerequisites: Graduate standing in the College of Engineering or by permission. Analytical methods used to model and analyze human body motion. Dimensional kinematics, joint coordinate systems, functional anatomy, segment center of mass and joint centers.

650 CARDIOVASCULAR DYNAMICS 3 credits
Prerequisites: 3100:561 or equivalent. Cardiovascular disease conditions, instrumentation and techniques (both invasive and noninvasive) used for diagnosis. Direct interaction with active clinical laboratories.

651 CARDIOVASCULAR DIAGNOSTIC TECHNIQUES 3 credits
Prerequisites: 3100:561 or equivalent. Cardiovascular disease conditions, instrumentation and techniques (both invasive and noninvasive) used for diagnosis. Direct interaction with active clinical laboratories.

652 CARDIOVASCULAR THERAPEUTIC TECHNIQUES 3 credits
Prerequisite: 651. Cardiovascular therapeutic devices and procedures for correction of congenital defects, valve failure, heart and arterial bypass grafting and less-invasive catheter-based procedures.

653 TRANSPORT PHENOMENA IN BIOMECHANICS 3 credits
Basic definitions, cardiovascular mass and momentum transport, compartment modeling, mass transfer in physiological systems, and artificial kidney and lung devices. Design optimization. Analysis of human thermal system.

655 REHABILITATION ENGINEERING 3 credits
Prerequisites: Undergraduate engineering degree 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, bedside mechanics, emerging technologies.

660 BIOMATERIALS AND LABORATORY 4 credits
Corequisite: Biomaterials Laboratory. Materials 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.

661 ADVANCED BIOMATERIALS 3 credits
Prerequisites: 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.

663 ARTIFICIAL ORGANS 3 credits
Prerequisites: 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 variety of artificial organs, with emphasis on the artificial heart and artificial kidney.

665 BIOMATERIALS AND TISSUE ENGINEERING METHODS 3 credits
Prerequisites: 660 or permission of instructor. Corequisite: 661 or permission of instructor. This course is designed to equip students with knowledge and skills to evaluate biomaterials and design scaffold for tissue engineering. Analytical techniques include principles of microscopy, cell culture techniques, and biocompatibility testing.

670 MATHEMATICAL MODELING IN BIOENGINEERING 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.

685 MEDICAL DEVICES AND ARTIFICIAL ORGANS 3 credits
Prerequisites: graduate standing in engineering, mathematics, or science; or permission of instructor. Design of medical devices and artificial organs, requirements, safety considerations, design constraints, optimization techniques, government regulations, and legal liability.

687 SPECIAL TOPICS IN BIOMEDICAL ENGINEERING 1-4 credits
May be repeated) Specialized areas of study as defined by the instructor.

698 MASTER'S RESEARCH 1-16 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 THEESIS 16 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
Sensing principles, fabrication, and engineering design of microsensors for diagnostic, monitoring, and analytical biomedical applications.

735 IMAGING DETECTORS AND SENSORS 3 credits
An introductory course designed to develop a deep knowledge of detector and sensing systems for Medical Imaging and Diagnostic Applications.

798 PRELIMINARY RESEARCH 1-16 credits
(May be repeated) Prerequisite: Approval of the dissertation director. Preliminary investigations leading to development of 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.

520 INTRODUCTION TO INSTRUCTIONAL COMPUTING 3 credits
Prepares the student for the use of computer technologies in educational and business settings. Segments of the course are offered in an online format.

590,1,2 WORKSHOP 1-3 credits
Independent study 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.

600 PHILOSOPHIES OF EDUCATION 3 credits
Teaches students the basis of philosophical problems underlying broad educational questions that confront society. Intended to provide a foundation for understanding of questions of modern society and education.
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**The University of Akron 2009-2010**

- **Comparative and International Education**: 3 credits. 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.
- **Topical Seminar in the Cultural Foundations of Education**: 3 credits. Issues and subjects related to study of educational institutions, theories and/or ideas. Different topical courses will be offered per section to section. Delivered in face-to-face/web-enhanced format and fully online format.
- **Planning for Technology**: 3 credits. Emphasis on the process of need for use of technology in the school. Includes plans for faculty support and alternative arrangements of computer set up.
- **Psychology of Instruction for Teaching and Learning**: 3 credits. Current theories and research in the areas of cognition and learning, development, and motivation. Offered in face-to-face and online formats.
- **Fundamental in Learning**: 1 credit. The nature, purpose, history and philosophy of a learning is being 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/credit overview will be discussed.
- **Topical Seminar in Computer-Based Education**: 3 credits. (May be repeated for a total of six credits. Advanced topics related to development, implementation, research and evaluation in CBE. Student involvement emphasized, required. Knowledge of programming language recommended.)
- **Instructional Design**: 3 credits. The theory and practice of Instructional Design IDI involves a systematic approach to the analysis, design, development, evaluation, and implementation of effective instruction.
- **Web-Based Learning Systems**: 3 credits. The purpose of this course is to help students become proficient in the design and development of web-based learning systems for training and education. Delivered in face-to-face/web-enhanced format and fully online format.
- **Hypermedia**: 3 credits. The purpose of this course is to introduce students to a variety of Hypermedia tools such as Web-based and CD-ROM. Students will also be introduced to a variety of authoring paradigms.
- **Visual Literacy**: 3 credits. This course will combine a basic understanding of design principles and concepts with research findings on the use of visuals in the learning process.
- **Emerging Technologies for Instruction**: 3 credits. This course examines emerging technologies, hardware, software, systems that support teaching/learning, and methods for assessing the utility of any technology used for instructional purposes.
- **Topical Seminar in Educational Technology**: 3 credits. (Repeatable for up to nine credits.) Current trends and practices in educational technology; computer authoring software, tools and processes for instructional video production, presentation systems.
- **Philosophies of Educational Technology**: 3 credits. To introduce students to the many philosophies of educational technologies and the manner in which information technology especially influences our pedagogy.
- **Integrating and Implementing Technology**: 3 credits. This course is designed to equip teachers with tools, resources, and strategies to support the integration and implementation of effective use of technology in the classroom.
- **Strategies for On-Line Learning**: 3 credits. This course will prepare instructors to make the transition from teaching in a physical classroom to facilitating learning in an increasingly virtual classroom. Delivered in face-to-face/web-enhanced format and fully online format.
- **Techniques of Research**: 3 credits. Research methods and practices commonly used in education and behavioral science. 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.
- **Topical Seminar in Measurement and Evaluation**: 3 credits. (May be repeated for a total of six credits) Topics of current interest and need will be emphasized. The student will develop extended competence with contemporary measurement and evaluation techniques.
- **Multicultural Counseling**: 3 credits. Prerequisites: 6500:643 or permission of instructor. An examination of multicultural counseling theory and research necessary to work with culturally diverse people.
- **Individual and Family Development Across the Lifespan**: 3 credits. An exploration of individual and family development. Emphasis will be placed on understanding the relationship between the individual and his/her family.
- **Field Experience: Master’s**: 3 credits. Prerequisites: permission of department chair and instructor. Area determined in accordance with student’s program and professional goals.
- **Master’s Technology Effect**: 3 credits. Prerequisite: permission of advisor. Prepare and test a technology learning package that will facilitate the interaction between the school’s internal and external publics. Field based research required.
- **Independent Study**: 1-4 credits. (May be repeated for a total of eight credits) Prerequisites: permission of department chair and instructor. Specific area of study determined in accordance with student’s program and professional goals.
- **Master’s Problem**: 3 credits. Prerequisites: 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.
- **Master’s Thesis**: 4 credits. Prerequisites: permission of department chair and instructor. In-depth study of research problem within humanistic and behavior foundation.
610 SUPERVISION OF INSTRUCTION 3 credits
Prerequisites: 601 and 5100:640. An introduction to the school function that describes instructional leadership, accountability, curriculum, staff, and program development and action research required.

613 STUDENT SERVICES AND INTERAGENCY COLLABORATION 3 credits
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. Prerequisites: permission required.

615 DISABILITY LAW 3 credits
The course examines the law of special education and the legal requirements obligating school districts to prevent the affirmative rights of persons with disabilities. Emphasis is placed on knowing and applying the law to school practices. Course also available online.

620 SCHOOL CULTURE AND GOVERNANCE 3 credits
An examination of leadership as it relates to the development and maintenance of a school climate and culture conducive to teaching and learning.

695,6 PRINCIPALSHIP INTERNSHIP 3 credits each
Successive semesters required to successfully complete a two-semester internship in a school district chosen by the student and his/her advisor. 

697 INDEPENDENT STUDY 1-3 credits
Prerequisites: permission of advisor and supervisor of the independent study. Area of study determined by student's interests. (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 organizations and strengths and weaknesses of common methods of administrating them. Practical means by which overcoming bureaucratic weaknesses of bureaucracies are offset or lessened by educational institutions.

705 DECISION MAKING IN EDUCATIONAL ADMINISTRATION 3 credits
Prerequisites: Admission to a College of Education doctoral program or permission. Decision making is portrayed as a central function of the educational administrator with a unified presentation of the theory, research and practice of decision making.

707 THE SUPERINTENDENCY 3 credits
An orientation to the superintendent's role and an examination 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 marketplace of public, private schooling and higher education institutions as they relate to an urban environment.

709 ADVANCED PRINCIPLES OF CURRICULUM DEVELOPMENT 3 credits
A study of curriculum development with an emphasis on the performance competencies 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 of the administrator as instructional leader; disciplinarian; building, facilities, and auxiliary services manager.

716 ADVANCED EVALUATION OF EDUCATIONAL ORGANIZATIONS 3 credits
Prerequisites: Admission to a College of Education doctoral program or permission. An evaluation course to help educational leaders plan and assess educational priorities and outcomes.

720 TOPICAL SEMINAR 1-3 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.

730 RESIDENCY SEMINAR 3 credits
Prerequisites: Admission to a College of Education doctoral program or permission. Focus on recent research in administration and educational administration theory.

731 RESIDENCY SEMINAR 3 credits
Prerequisites: 601. Focus on recent research in administration and educational administration theory.

732 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 a positive image of their institutions and to avoid many of the misconceptions about school issues with many constituencies.

740 THEORIES OF EDUCA TIONAL SUPERVISION 3 credits
Extends 630, including supervisory models, staff development, and the organizational environment of effective supervision.

745 SEMINAR: URBAN EDUCATIONAL ISSUES 3 credits
Prerequisites: Admission to a College of Education doctoral program or permission. A study of the linkages 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. Emphasis given to recent efforts to bring about reform at all levels of the educational enterprise and to conceptual and research findings.

795,6 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 the student and his/her advisor.

895,6 SPECIAL INTERNSHIP 15 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 1-3 credits
Prerequisites: permission of advisor. In-depth study of a research problem in education. Area of study determined by student's needs. (May be repeated for a total of six credits.)

899 DOCTORAL DISSERTATION 1-20 credits
Prerequisites: permission of advisor. Specific research problem that requires student to apply research skills and techniques to the problem being studied.

5100: SUPERVISORY AND LEADERSHIP COMPETENCIES 3 credits
Introduction to the sociopsychological literature concerning the impact of college on student and student development theory. Delivered 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, interaction of, and implications for 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, organs, etc. Maximum of six credits applied to degree. 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 role of student services in higher education. Delivered in face-to-face web enhanced format and fully online format.

527 THE AMERICAN COLLEGE STUDENT 3 credits
Introduction to sociological theories concerning the impact of college on students 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
Study of curriculum planning at the college and university level, factors influencing curriculum design, theories and practices of curricular change and innovation are also explored. Delivered 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 leadership behavior for the college or university setting. Delivered in face-to-face web enhanced format and fully online format.

599 ADVANCED ADMINISTRATIVE COLLOQUIUM IN HIGHER EDUCATION 3 credits
Prerequisites: permission of advisor and supervisor of the independent study. Group study of special topics of critical, contemporary concern in workforce education/training. Delivered in face-to-face web enhanced format and fully online format.

600 INTERNSHIP IN HIGHER EDUCATION 1-3 credits (May be repeated for a total of six credits.) Prerequisite: permission; corequisite: 602. Intensive experience in an internship in an institution of 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 experience. Seminar provides 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 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.

626 POLICY, ASSESSMENT, AND ACCOUNTABILITY IN HIGHER EDUCATION 3 credits
Facilitates student with an understanding of assessment, policy-making, and accountability in higher education. Theoretical approaches explored, internal and external policy actors identified and implementation issues are examined. Delivered in face-to-face web enhanced format and fully online format.

635 INSTRUCTIONAL STRATEGIES AND TECHNIQUES FOR THE COLLEGE INSTRUCTOR 3 credits
Selection of topics in instructional theory, 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.

5400: POSTSECONDARY TECHNICAL EDUCATION

500 POSTSECONDARY LEARNER 3 credits
Describes characteristics of the postsecondary learner; studies issues, factors, and strategies pertinent to successful educational learning in a variety of postsecondary learning environments. Delivered in face-to-face web enhanced format and fully online format.

501 LEARNING WITH TECHNOLOGY 3 credits
An overview of instructional and research technologies used in applied 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
History and operations of current workforce education 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. Foundation for students interested in training and human resource training supervision 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, developing this content into an organized sequence of institutional units. Delivered in face-to-face web enhanced format and fully online format.

595 SYSTEMATIC INSTRUCTIONAL DESIGN FOR POSTSECONDARY EDUCATION 3 credits
Selected topics in instructional techniques appropriate to postsecondary technical education. Emphasis on instructional methods, techniques in classroom, laboratory including tests, measurements. Delivered in face-to-face web enhanced format and fully online format.

541 EDUCATIONAL GERONTOLOGY SEMINAR 3 credits
Designed for person practicing in field of gerontology or preparing for a specialization in educational gerontology, including person responsible for program development and implementation of courses, seminars, occupational training programs and workshops for older people.

580 SPECIAL TOPICS: WORKFORCE EDUCATION/TRAINING 1-3 credits
Prerequisites: permission of advisor. Group study of special topics of critical, contemporary concern in workforce education/training. Delivered in face-to-face web enhanced format and fully online format.

Graduate Courses
590,1,2 WORKSHOP 1-4 credits
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 14 credits
Special courses designed as in-service upgrading programs, frequently provided with the support of local foundations.

600 THE TWO-YEAR COLLEGE 2 credits
Introduces students to the nature, purpose, and philosophy of the two-year college. Includes an examination of student assignment, professional development, as well as related leadership and management issues. Delivered in face-to-face web-enhanced format and fully online format.

605 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, and evaluation processes. Delivered in face-to-face web-enhanced format and fully online format.

620 POSTSECONDARY TEACHER LEADERSHIP 3 credits
An examination of the role of supervisor of postsecondary instruction, facilitation and evaluation of postsecondary instructors, professional development, as well as related leadership and management issues. Delivered in face-to-face web-enhanced format and fully online format.

660 POSTSECONDARY DISTANCE LEARNING 3 credits
Introduces the concept of distance learning: description, examination of current scope, theory, history, 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: 500, 520, 530, and 535. Provides an environment for students to apply learned teaching skills, evaluate teaching practices, and fine-tune skills before independently teaching in the field. Delivered in face-to-face web-enhanced format and fully online format.

690 INTERNSHIP IN POSTSECONDARY EDUCATION 3 credits
Prerequisites: 500, 520, 530, 535, Teaching or 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.

FIELD EXPERIENCE: MASTER'S 1-6 credits (30-180 field hours)
On-the-job experience related to student's program of studies. Credit/noncredit.

697 INDEPENDENT STUDY 13 credits
(May be repeated for a total of six credits.) Area of study determined by student's need.

698 MASTER'S PROJECTS 1-6 credits
(May be repeated for a total of six credits.) Intensive examination of a particular area of curriculum and instruction. (May be repeated) Intensive examination of a particular area of curriculum and instruction. (May be repeated for a total of six credits.) Area of study determined by student's need.

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 critical, analytical, and problem-solving skills.

750 CURRENT RESEARCH AND THEORY IN SCIENCE EDUCATION 3 credits
Prerequisite: 760. The implementation of a research design for an inquiry into a curricular problem in workforce education or training. Student must be able to demonstrate critical, analytical, and problem-solving skills.

760 EDUCATIONAL INSTITUTES 14 credits
Special courses designed as in-service upgrading programs. Frequently provided with the support of local foundations.

600 CONCEPTS OF CURRICULUM AND INSTRUCTION 3 credits (3 field hours)
A study of the underlying research and theory of curriculum and instruction with special attention to educational decision in the metropolitan setting. (3 field hours)

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 policy and practice.

615 PHILOSOPHY AND ORGANIZATION OF MIDDLE SCHOOLS 3 credits
Philosophy, theory, research, and exemplary organizational, assessment, and evaluation components 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 may use teaching models and management strategies to become effective instructors. Also included are educational issues that relate to effective management and management practices.

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 elementary school (K-8), 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 genre with emphasis on methods and techniques for presenting literature to children in preschool, elementary, and middle grades.

625 CONTEMPORARY ISSUES IN LITERACY INSTRUCTION AND PHONICS 3 credits
Survey course explores current research in reading and writing as constructive processes of meaning-making.

627 SPECIAL TOPICS: CURRICULAR AND INSTRUCTIONAL STUDIES 3 credits
Prerequisite: permission of instructor. May be taken in topic for which there is a need. Group Studies of special topics of critical, contemporary concern in professional education.

628 LITERATURE ASSESSMENT PRACTICUM 3 credits (25-55 field hours)
Laboratory experience within classroom, small groups and individuals. A student diagnoses, 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 methods, development for teaching reading improvement programs, for all secondary school and college students.

630 ASSESSMENT OF READING DIFFICULTIES 3 credits
Prerequisite: 625. Examination of formal and informal assessments and intervention strategies for children with reading difficulties.

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.

645 THEORY AND PRACTICE IN ELEMENTARY SCHOOL MATHEMATICS 3 credits

650 ELEMENTARY SCIENCE CURRICULUM AND INSTRUCTION 3 credits
A critical analysis of contemporary science curriculum and instructional methods for the young learner with particular attention to curriculum and national standards.

651 SECONDARY SCIENCE CURRICULUM AND INSTRUCTION 3 credits
A critical analysis of the theory and practice of curriculum and instructional methods in science for early adolescent and adolescent learners.

690 MASTER'S RESEARCH 3 credits
Prerequisite: 760. The implementation of a research design for an inquiry into a curricular and instructional problem within an educational setting.

692 FIELD EXPERIENCE: COLLOQUIUM 1 credit
Prerequisite: admission to student teaching. Corequisites: 694. Instructional experience in the 7/12 classroom to apply theory and research to practice.

693 FIELD EXPERIENCE: MASTER'S WITH LICENSURE 1-12 credits
Prerequisites: admission to student teaching. Corequisites: 694. Planned teaching experience in schools selected and supervised by Office of Extended Educations Experiences.

694 FIELD EXPERIENCE: CLASSROOM INSTRUCTION 14 credits
Prerequisites: permission of instructor. Corequisites: 694. Planned teaching experience in schools selected and supervised by Office of Extended Educations Experiences.

695 FIELD EXPERIENCE: MASTER'S 14 credits
Prerequisite: permission of instructor. Corequisites: 694. Planned teaching experience in schools selected and supervised by Office of Extended Educations Experiences.

696 FIELD EXPERIENCE: CLASSROOM INSTRUCTION 13 credits
Select different areas of independent investigation as determined by advisor and related to student's academic needs.

699 MASTER'S THESIS 4-6 credits
Indepth investigation of specific problem pertinent to student's area of concentration in education.

707 INDEPENDENT STUDY 13 credits
Select different areas of independent investigation as determined by advisor and related to student's academic needs.

709 CURRENT RESEARCH AND THEORY IN SCIENCE EDUCATION 3 credits
Intensive examination of contemporary theory and research literature in science teaching and learning for preschool through senior high school students.

710 ACTION RESEARCH 3 credits
Prerequisite: Admission to the program. Students develop skills needed to conduct Action Research studying their own instruction to identify means to improve the effectiveness of teaching and learning.

780 SEMINAR IN CURRICULAR AND INSTRUCTIONAL STUDIES 1-3 credits
(May be repeated) Intensive examination of a particular area of curriculum and instruction.
604 CURRENT ISSUES IN PHYSICAL EDUCATION
3 credits
This course represents a planned experience in interpretation and articulation of information related to and of current interest and significance to areas of concern to physical education.

605 PHYSIOLOGY OF MUSCULAR ACTIVITY AND EXERCISE
3 credits
Functions of body systems and physiological effects of exercise. Laboratory experiences, lec-
tures, discussions.

606 STATISTICS: QUANTITATIVE AND QUALITATIVE METHODS
3 credits
Prerequisite: 603:560. Research methods/designs, statistics (application and interpretation), use of computers and appropriate software as they relate to various disciplines in the area of physical activity

607 MOTIVATIONAL ASPECTS OF PHYSICAL ACTIVITY
3 credits
Analysis of factors influencing motivation of motor performance with emphasis on competi-
tion, audience effects, aggression, etc.

610 MASTERING TEACHING AND COACHING
3 credits
To learn about becoming master teachers and coaches, students will apply effective teaching
skills, focus on content, and reflect on the teaching/coaching process. Additional 10
clinical/field hours required.

611 RESEARCH AND ANALYSIS OF EFFECTIVE TEACHING IN PHYSICAL
EDUCATION
3 credits
For the new professional, this course concentrates on research and analysis of skills and pro-
fessional competencies needed to become an effective teacher of physical education.

620 LABORATORY INSTRUMENTATION TECHNIQUES IN EXERCISE PHYSIOLOGY
3 credits
This is a course designed to provide hands-on laboratory experiences for students in the area
of exercise science.

680 SPECIAL TOPICS IN HEALTH AND PHYSICAL EDUCATION
May be repeated for a total of 6 hours. Area of study determined by student's needs.

899 DOCTORAL DISSERTATION
1-6 credits
Area of study determined by student's needs. Student must be able to demonstrate critical and
analytical skills in dealing with a problem in physical education.

895 DOCTORAL FIELD EXPERIENCE
1-3 credits
Prerequisite: permission of advisor. Intensive research study related to a problem in outdoor
education. The experience may not be part of current position. Documentation of project required.

951 INDEPENDENT STUDY
1-3 credits
Prerequisite: permission of advisor. In-depth analysis of current practices or problems related
to physical education. Documentation of the study required.

952 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.

953 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:

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.

553 RESIDENT OUTDOOR EDUCATION
2 credits
Focus on helping physical education teachers use critical thinking to review programming/organizational techniques relevant to outdoor education programs. Extended experience in outdoor settings required.

560 OUTDOOR PURSUITS
4 credits
Investigation and participation in practical experiences in outdoor pursuits.

560 OUTDOOR EDUCATION: RURAL INFLUENCES
3 credits
Prerequisite: 552 or 553. Utilization of resources of rural area as a learning teaching environ-
ment. 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 indi-
avidual study of special topics of contemporary concern in outdoor education.

590 PRACTICUM IN OUTDOOR EDUCATION
2-6 credits (60-120 field hours)
Prerequisites: 550, 552 and permission of advisor. Supervised practical experience with exist-
ing outdoor education programs. In conjunction with practical work student meets regularly with advisor.

595 FIELD EXPERIENCE: MASTER'S
2-4 credits (60-180 field hours)
Prerequisite: permission of advisor. Participation and documentation of practical professional
experience related to outdoor education.

599 INDEPENDENT STUDY
1-3 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.

598 MASTER'S PROBLEM
2-4 credits
Prerequisite: permission of advisor. Intensive research study related to a problem in outdoor
education or related discipline.

597 MASTER'S THESIS
4-6 credits
An original composition demonstrating independent scholarship in a discipline related to out-
door 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 comprehen-
sive school health curricula 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
Prerequisite: permission of instructor. Planning, organization, use of instructional resources
and delivery of health education content and teaching processes (70-90 field hours).

560 PRACTICUM IN HEALTH EDUCATION
2-4 credits
Prerequisite: permission of instructor. The practicum in Health Education is an on-site participa-
tion in a community health organization, agency, or resource.
667 MASTERS THERAPY
Prerequisite: 655. In-depth study of theories and interventions which focus on the nature and quality of marital relationships.
3 credits

669 SYSTEMS THEORY IN FAMILY THERAPY
Prerequisite: 655. In-depth exploration of systems theory in family therapy. Major assumptions of systems theory will be examined and the implications for interventions will be explored.
3 credits

675 PRACTICUM IN COUNSELING I
Prerequisites: 623, 645, 646, 651, 653, 655, 667, 669, 666, 664, 699. This course will provide training for family counseling students in an intensive supervised clinical experience, which includes live supervision and videotape review of therapy sessions.
3 credits

685 INTERNSHIP
Prerequisite: 675. Must be repeated for a minimum of 6 credit hours over two semesters. May be repeated for a maximum of 12 credit hours. Paid or unpaid supervised clinical experience taken at least two consecutive semesters immediately following completion of 675.
3 credits

992 RELATE EXPERIENCE: MASTER’S
Prerequisites: permission of advisor and department chair. Placement in selected setting for purpose of acquiring experiences and demonstration skills related to student’s counseling program.
1-3 credits

697 INDEPENDENT STUDY
May be repeated for a total of nine credits. Prerequisites: permission of advisor and department chair. Specified area of focus determined in accordance with student needs.
1-3 credits

702 ADVANCED COUNSELING PRACTICUM
May be repeated for a total of 12 credits. Prerequisites: 675, 720, 710. Supervised counseling experience in selected settings.
4 credits

708 SUPERVISION IN COUNSELING
Prerequisites: doctoral residency or permission. Instruction and experience in supervising graduate students.
4 credits

710 THEORIES OF COUNSELING AND PSYCHOTHERAPY
Prerequisites: 3750:630 or departmental permission. Major systems of individual psychotherapy explored within a philosophy of science framework. Freudian, behaviorist, Rogerian, cognitive and other. Includes research, contemporary problems and ethics.
4 credits

711 VOCATIONAL BEHAVIOR
Prerequisites: 3750:630 or departmental permission. Theories and research on vocational behavior and vocational counseling. Topics include major theories on vocational behavior, empirical research on these theories, applied work in vocational counseling and applied research.
4 credits

712 PRINCIPLES AND PRACTICE OF INDIVIDUAL INTELLIGENCE TESTING
Prerequisites: 630 or graduate standing in psychology and instructor’s permission. History, principles and methodology of intelligence testing, supervised practice in administration, scoring and interpretation of intelligence tests for children and adults.
3 credits

713 PROFESSIONAL, ETHICAL AND LEGAL ISSUES IN COUNSELING PSYCHOLOGY
Prerequisites: 655. Presentation of professional responsibility and ethical codes. Major systems of individual psychotherapy explored within a philosophy of science framework. Freudian, behaviorist, Rogerian, cognitive and other. Includes research, contemporary problems and ethics.
4 credits

714 OBJECTIVE PERSONALITY EVALUATION
Prerequisite: completion of 3750:400/500, and 3750:750 or 6600:560. Special study of projective techniques and training in the administration and evaluation of objective personality instruments for assessment purposes.
3 credits

715 RESEARCH DESIGN IN COUNSELING I
Prerequisite: doctoral residency or permission. Study of major issues in the field. Such as the counselor as a professional and a person, issues, problems and trends in counseling.
3 credits

716 RESEARCH DESIGN IN COUNSELING II
Prerequisites: doctoral residency or permission. This course is designed for doctoral students utilizing the qualitative approach for conducting research. Theory, methods, and design of qualitative inquiry are reviewed.
3 credits

717 ISSUES OF DIVERSITY IN COUNSELING PSYCHOLOGY
Prerequisites: 3750:630; one semester of practicum work. Critical examination and application of research and therapy in counseling diverse populations, focusing on race/ethnicity, sex/gender, sexual orientation, age, disability and spirituality.
4 credits

718 HISTORY AND SYSTEMS IN PSYCHOLOGY
Prerequisites: 3750:630. Philosophical and scientific antecedents of psychology and details of the development of psychological viewpoints in the 19th and 20th centuries.
2 credits

720 TOPICAL SEMINAR: COUNSELOR EDUCATION AND SUPERVISION
Prerequisite: permission of instructor. A topical study with a variety of disciplinary input. Staffing will be by department faculty and other professionals in counseling and related fields. A maximum of six credits may be applied to a degree.
1-4 credits

722 INTRODUCTION TO PRACTICUM I
Prerequisite: 655 or departmental permission. This course is designed for graduate students utilizing the qualitative approach for conducting research. Theory, methods, and design of qualitative inquiry are reviewed.
3 credits

723 LEGAL AND ETHICAL ISSUES IN COUNSELOR EDUCATION
Prerequisites: Admission to the Counselor Education and Supervision Program. Examination of legal/ethical issues in the field of counseling and marriage and family therapy.
4 credits

725 DOCTORAL PROFESSIONAL SEMINAR IN COUNSELOR EDUCATION
Prerequisite: Admission to the doctoral program in Counselor Education and Supervision. To be taken during the first fall term. Prerequisite: 3750:530. Examination of major ethical/legal issues in the field of counseling and marriage and family therapy.
3 credits

730 USE OF ASSESSMENT DATA
Prerequisite: doctoral level status. Study of the methods and materials used to assess individual effectiveness, the use of these obtained leading to professional decisions, the diagnosis of individuals present condition, and recommendations for appropriate treatment intervention.
4 credits

732 ADDICTION COUNSELING I: THEORY AND ASSESSMENT
This course is designed to teach graduate-level students the history, foundations, theoretical models, assessment strategies, and diagnostic procedures associated with addictive disorders.
3 credits

734 ADDICTION COUNSELING II: TREATMENT PLANNING AND INTERVENTION STRATEGIES
This course is designed to teach graduate-level students the process of treatment planning and range of treatment interventions used with addictive disorders.
3 credits
737 CLINICAL SUPERVISION I 4 credits
Prerequisite: Successful completion of advanced practicum. Instruction and experience super-
vising 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.

756介紹和TREATMENT ISSUES IN MARRIAGE AND FAMILY THERAPY 3 credits
Prerequisite: 545. Provides advanced counseling students with the knowledge and skills in ap-
plication of methods, techniques and instruments relevant to the practice of marriage and family therapy.

752 OUTCOME RESEARCH IN MARRIAGE AND FAMILY THERAPY 3 credits
Prerequisite: 567, 5000/6000. (90). This course will provide an in-depth examination of marriage and family therapy outcome research.

760 COUNSELING CHILDREN 3 credits
Prerequisite: graduate student in counseling or related field. This course is designed as an en-
try-level course for counselors, school counselors, school psychologists, or other profes-
sionals preparing to engage in therapeutic work with children. It is not a class in diagnosis of child disorders.

785 DOCTORAL INTERNSHIP 3 credits
May be repeated for a total of 9 credits.) Prerequisite: passing grade on written and oral comprehensive examination. Supervision experience in clinical settings, individual supervision. A minimum of 600 clock hours must be completed in a minimum of two con-
ssecutive semesters immediately following passing of comprehensive examinations. Credit/no-credit.

796 COUNSELING PSYCHOLOGY PRACTICUM 4 credits
May be repeated for a total of 12 credits. Advanced counseling psychology students will have supervised training with clients in a variety of settings and will focus on supervised develop-
ment of specialized theoretical applications. Credit/no-credit.

797 INDEPENDENT READING AND/OR RESEARCH IN COUNSELING PSYCHOLOGY 1-16 credits
May be repeated. Prerequisite: permission of instructor. Independent readings and/or re-
search in an area of expertise in psychology beyond the direction of a faculty mentor.

895 FIELD EXPERIENCE: DOCTORAL 16 credits
May be repeated. Prerequisite: doctoral candidate status. Placement in a setting for the purpose of acquiring experiences and/or developing skills related to student's doctoral program.

897 INDEPENDENT STUDY 1-16 credits
May be repeated for a total of nine credits. Prerequisite: permission of advisor and depart-
ment chair. Specific area of investigation determined in accordance with student needs.

899 DOCTORAL DISSERTATION 20 credits
Prerequisite: permission of major doctoral advisor and department chair. Study, design and analysis of counseling problem.

SPECIAL EDUCATION 5610:

546 INDIVIDUALS WITH EXCEPTIONALITIES: EDUCATIONAL AND OCCUPATIONAL 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 field hour).

547 DEVELOPMENTAL CHARACTERISTICS OF INTELLECTUALLY GIFTED INDIVIDUALS 3 credits
Prerequisite: 540. Survey of the etiology, diagnosis, classification and development characteristics of intellectually gifted individuals.

549 INDIVIDUALS WITH MILD/MODERATE EDUCATIONAL NEEDS: CHARACTERISTICS AND IMPLICATIONS 4 credits
Prerequisite: 540. Survey of the etiology, identification, classification, and developmental char-
acteristics of individuals with mild/moderate educational needs.

550 INDIVIDUALS WITH MODERATE/INTENSIVE EDUCATIONAL NEEDS: CHARACTERISTICS AND IMPLICATIONS 4 credits
Prerequisite: 540. Survey of the etiology, identification, classification, and developmental char-
acteristics of individuals with moderate/intensive educational needs.

551 INCLUSION MODELS AND STRATEGIES 3 credits
Provides a survey of the etiology, diagnoses, classification, and developmental needs of indi-
viduals with disabilities in the development and implementation of educational interventions and related issues.

553 SPECIAL EDUCATION PROGRAMMING: MODERATE/INTENSIVE I 3 credits
Advanced program for providing educational planning and intervention for individuals with disabilities in the development and implementation of educational interventions and related issues.

554 ASSESSMENT AND EVALUATION IN SPECIAL EDUCATION 3 credits
Prequisites: 440/540 and 448/548. The assessment of children (three to eight) and their envi-
ronments who are at risk for disabilities or who are already identified as having disabilities.

556 MANAGEMENT STRATEGIES IN SPECIAL EDUCATION 3 credits
Content emphasizing the development of application strategies with a variety of behavior management models for implementing research relevant to classroom management will be cov-
ered. Behavioral theory will be stressed.

560 SEMINAR SPECIAL EDUCATION CURRICULUM PLANNING 3 credits
Prerequisite: certification in an area of special education. Study of curriculum planning prac-
tices and specific educational classes and services. Appropriate curriculum objectives for selectedareas of instruction as well as effective organizational programs examined.

561 SPECIAL EDUCATION PROGRAMMING ISSUES FOR INDIVIDUALS WITH PERVASIVE DEVELOPMENTAL DISORDERS 3 credits
This course provides a survey of the etiology, diagnoses, characteristics, and needs of indi-
viduals with pervasive developmental disorders.

562 PROGRAMMING ISSUES FOR INDIVIDUALS WITH PERVASIVE DEVELOPMENTAL DISORDERS 3 credits
This course provides a comprehensive examination of the educational prac-
tices of supporting and intervention strategies for providing interventions for individuals demonstrating pervasive developmental disorders.

563 ASSESSMENT IN SPECIAL EDUCATION 3 credits
Prequisites: study to select, administer and interpret formal and informal assessment proce-
dures and use resulting data in planning educational programs for exceptional individuals.

564 ASSESSMENT AND EVALUATION IN EARLY CHILDHOOD SPECIAL EDUCATION 3 credits
Prequisites: 440/540 and 448/548. The assessment of children (three to eight) and their envi-
ronments who are at risk for disabilities or who are already identified as having disabilities.

566 ADVANCED BEHAVIOR MANAGEMENT 3 credits
Prequisites: 567 Advanced techniques for remediating problematic behavior; establishing effective procedures and evaluating research relevant to classroom management will be cov-
ered. Behavioral theory will be stressed.

575 SEMINAR INVITATIONAL STUDIES IN SPECIAL EDUCATION 1-2 credits
May be repeated for a total of four credits. Topic study with a varied array of disciplinary input. Staffing will be invited members of allied and contributing professions active in man-
agement of exceptional children.

581 SEMINAR SPECIAL EDUCATION CURRICULUM PLANNING 3 credits
Prerequisite: certification in an area of special education. Study of curriculum planning prac-
tices and specific educational classes and services. Appropriate curriculum objectives for selectedareas of instruction as well as effective organizational programs examined.

601 SEMINAR IN SPECIAL EDUCATION CURRICULUM PLANNING 3 credits
Prerequisite: certification in an area of special education. Study of curriculum planning prac-
tices and specific educational classes and services. Appropriate curriculum objectives for selectedareas of instruction as well as effective organizational programs examined.

602 SUPERVISION OF INSTRUCTION 3 credits
Study of administration supervisory practices unique to special education classes and ser-
vices.

607 COLLABORATION AND CONSULTATION SKILLS FOR SPECIAL EDUCATORS 3 credits
Advanced consultation and the roles of parents, professionals and individ-
uals with disabilities in the development and implementation of educational interventions and related issues.

611 SEMINAR: LEGAL ISSUES IN SPECIAL EDUCATION 3 credits
Prerequisite: admission to program in special education and 5070/670. An exami-
nation of legal aspects of student rights in special education and the application of the field of special education. Applied research is an essential component of the course.

612 CHARACTERS OF Needs in INDIVIDUALS DEMONSTRATING PERVASIVE DEVELOPMENTAL DISORDERS 3 credits
This course provides a comprehensive examination of the educational prac-
tices of supporting and intervention strategies for providing interventions for individuals demonstrating pervasive developmental disorders.

614 ADVANCED BEHAVIORAL AND EMOTIONAL DISORDERS 3 credits
This course provides a survey of the etiology, diagnoses, classification, and developmental (birth through adult) characteristics of individuals in need of behavioral support.

617 SEMINAR: SOCIAL/EThICAL ISSUES IN SPECIAL EDUCATION 3 credits
Culminating seminar for graduate students in special education designed to study, examine and reflect upon the social and ethical aspects of historical curriculum changes, and social practices.

618 SPECIAL TOPICS IN SPECIAL EDUCATION I 1-4 credits
Prerequisite: Permission of advisor or department chair. In-depth examination of current critical research on issues in Special Education.

620 SEMINAR: SPECIAL EDUCATION CURRICULUM PLANNING I 3 credits
Prerequisite: Permission of advisor or department chair. Corequisites: 570. Directed teaching under supervision of a special education teacher and a university supervisor.

621 SCHOOLBASED EXTERNSHIP SEMINAR 1 credit
Take a seminar concurrently with School-Based Externship in Audiology or Speech-Language Pathology. Review and discussion of issues raised during externship experience.

622 SCHOOLBASED EXTERNSHIP: SCHOOL AUDILOGY 6 credits
Directed professional experience under supervision of a licensed and certified audiologist and a University supervisor.

623 SCHOOLBASED EXTERNSHIP: SPEECH LANGUAGE PATHOLOGY 6 credits
Directed professional experience under supervision of a licensed and certified speech-lan-
guage pathologist and a University supervisor.

625 RESEARCH PROJECT IN SPECIAL AREA (SCHOLARLY PAPER) 3 credits
An in-depth study of an identified topic in a scholarly paper.

637 FIELD EXPERIENCE: MASTER'S 1-4 credits
May be repeated for a total of eight credits. Designed to provide on-the-job experience in a special education program on an individual basis.

648 INDEPENDENT STUDY 1-14 credits
May be repeated for a total of nine credits. Area specific of investigation determined in accor-
dance with student's needs.

649 MASTER'S PROBLEM 2-4 credits
In-depth study of a research problem in education. Student must be able to demonstrate crit-
ical and analytical skills in dealing with a problem in special education.

650 MASTER'S THESIS 4-6 credits
Thorough study and analysis in depth of an educational problem, field projects in special areas; synthesis of existing knowledge in relationship to a specific topic.
SCHOOL PSYCHOLOGY 5620:

600 SEMINAR: ROLE AND FUNCTION OF THE SCHOOL PSYCHOLOGIST 3 credits
Prerequisite: permission of instructor. Seminar on role and function of school psychologist. The course, tailored to meet individual needs of trainees, is a consideration of professional standards of school psychology practice.

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 as related to consultant process and with school and agency personnel, parents and children.

610 EDUCATIONAL DIAGNOSIS FOR SCHOOL PSYCHOLOGISTS 4 credits
Prerequisite: 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 State 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. Individual work under staff guidance on curriculum problems; utilization of community resources; planning of curricular units.

695 FIELD EXPERIENCE: MASTER'S 3 credits
Prerequisite: permission of instructor. Practical school psychology related experience in school setting.

697 INDEPENDENT STUDY 14 credits
Prerequisite: permission of advisor and supervisor of independent study. Documentation of specific area of investigation. Nature of the inquiry to be determined by student-supervisor agreement.

698 MASTER'S PROBLEM 24 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 46 credits
Prerequisite: permission of instructor. Thorough study, analysis and reporting in depth of an educational problem, field study 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 curricular units.

Business Administration

ACCOUNTANCY 6200:

520 ADVANCED ACCOUNTING 3 credits
Prerequisite: 622 or equivalent. Examination of accounting theory emphasizing accounting for business combinations, partnerships, foreign operations, nonprofit entities and consolidated statements.

530 TAXATION I 3 credits
Prerequisite: 621 or equivalent. Federal tax law related to individuals. Master of Taxation students will not be able to take this course to satisfy tax electives in the Master of Taxation program.

531 TAXATION II 3 credits
Prerequisite: 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.

540 AUDITING 3 credits
Prerequisite: 621 or equivalent. Evaluating auditing standards and procedures used by independent auditors in determining whether a firm has fairly presented its financial position.

541 INFORMATION SYSTEMS AUDIT AND CONTROL 3 credits
Prerequisite: 540 or permission of instructor. Learn the fundamental concepts and practices of information systems today. Use control objectives and standards by information systems control, audit and security organizations.

554 INFORMATION SYSTEMS SECURITY 3 credits
Prerequisite: 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.

570 GOVERNMENTAL AND INSTITUTIONAL ACCOUNTING 3 credits
Prerequisite: 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.

601 FINANCIAL ACCOUNTING 3 credits
Introductory course for student with no accounting background. Examines accounting principles as applied to financial problems of firm.

603 ACCOUNTING DECISION SUPPORT SYSTEMS 3 credits
Introduction to basic financial statement information; coverage of databases, electronic spreadsheets, and other information technology tools that support accounting and assurance services.

606 APPLICATIONS DEVELOPMENT FOR FINANCIAL SYSTEMS 3 credits
Prerequisite: 615 and 6501/619. Analysis, design and development of financial control applications, using object oriented languages, integrated development environments (IDE), and object analysis and design methodology.

607 FINANCIAL DATA COMMUNICATIONS AND ENTERPRISE INTEGRATION 3 credits
Prerequisites: 6200.001 and 6500.001. In-depth study of contemporary methodologies, technologies, and standards used to integrate business processes and systems, including XML and XBRL.

610 PROCESS ANALYSIS AND COST MANAGEMENT 3 credits
Prerequisites: 6200.063 or 6290.061, 6500.001, or permission of instructor. Investigates management accounting and control systems and the use of accounting information in cost management, risk assessment, planning, decision making, and performance evaluation.

615 ERP AND FINANCIAL DATA COMMUNICATIONS 3 credits
Prerequisite: 615 or equivalent. Risk assessment and mitigation of ERP systems and integration of contemporary data communication technologies such as XML and XBRL into financial applications.

621 CORPORATE ACCOUNTING AND FINANCIAL REPORTING I 3 credits
Prerequisite: 601 or graduate accounting status. An examination of generally accepted accounting principles in theory and application, as well as financial statement preparation. Not open to students who have taken Intermediate Accounting I.

622 CORPORATE ACCOUNTING AND FINANCIAL REPORTING II 3 credits
Prerequisite: Permission of instructor. A continuation of 621.001 which examines generally accepted accounting principles in theory and practice, as well as financial statement preparation. Not open to students who have taken Intermediate Accounting II.

628 SURVEY OF FEDERAL TAXATION 3 credits
Survey of federal taxation of entities, tax research, and individual taxation. Tax cases, projects, and problems will be assigned.

629 TAX RESEARCH 3 credits
Prerequisites: Admission to Master of Tax program or special admission. Designed to develop basic research competencies involving federal income, estate, and gift tax laws.

631 CORPORATION TAXATION I 3 credits
Prerequisite: Admission to Master of Tax program or special permission. Detailed examination of tax problems of corporations and their shareholders. Formation, distribution, redemption, and liquidation.

632 TAXATION OF TRANSACTIONS IN PROPERTY 3 credits
Prerequisite: Admission to Master of Tax program or special permission. Explores general tax implications of gains and losses derived from sales, exchanges and other dispositions of property.

633 ESTATE AND GIFT TAXATION 3 credits
Prerequisite: Admission to Master of Tax program or special permission. Analyzes provisions of federal estate and gift tax laws and tax consequences of testamentary and lifetime transfers.

637 CONTEMPORARY ACCOUNTING ISSUES 3 credits
Prerequisite: Permission of instructor. Critical examination of contemporary issues and trends in accounting, including professional ethics and corporate social responsibility, standard setting process, regulatory compliance, and international issues.

640 ADVANCED AUDITING 3 credits
Prerequisite: 640 or equivalent or permission. Conceptual foundations and current research on professional and internal auditing. Includes government regulation and litigation, statistics, computer systems as well as current and prospective developments in auditing.

641 TAXATION OF PARTNERSHIPS 3 credits
Prerequisite: Admission to Master of Tax program or special permission. Examines intensive provisions of chapters K and S of Internal Revenue Code and uses of partnerships for tax planning.

642 CORPORATE TAXATION II 3 credits
Prerequisite: 631. Continuation of 631. Concludes study of chapter C on Internal Revenue Code with major focus on corporate reorganization.

643 TAX ACCOUNTING 3 credits
Prerequisite: Admission to Master of Tax program or special permission. Attention focused on timing of income and expenses, for individual businesses and its relation to tax planning.

644 INCOME TAXATION OF DECEDES, ESTATES AND TRUSTS 3 credits
Prerequisite: 633. An in-depth examination of the decedent's last income tax return along with the analysis of income taxation of trusts and estates and their creators, fiduciaries and beneficiaries.

645 ADVANCED INDIVIDUAL TAXATION 3 credits
Prerequisite: Admission to Master of Tax program or special permission. In-depth study of some of the more involved areas of individual income taxation.

646 CONSOLIDATED TAX RETURNS 3 credits
Prerequisite: 631. Intensive study of tax provisions concerning use of consolidated tax returns.

647 QUALIFIED PENSIONS AND PROFIT SHARING 3 credits
Prerequisites: Admission to Master of Tax program or special permission. Nature, purpose and operation of various forms of deferred compensation examined with much emphasis on pension and profit-sharing plans.

648 TAX PAYMENT AND PROCEDURE 2 credits
Prerequisite: Permission of instructor. In-depth study of administration and procedures of Internal Revenue Service and responsibilities of taxpayers.

649 STATE AND LOCAL TAXATION 3 credits
Prerequisite: Admission to Master of Tax program or special permission. Examines common types of taxes imposed by state and local governments and includes taxation of multistate businesses.

650 ESTATE PLANNING 2 credits
Prerequisite: 633. Consider entire process of planning the estate with due regard for disposition of property, tax minimization, liquidity requirements and administrative costs.
FINANCE 6400:

538 INTERNATIONAL BANKING 3 credits
Prerequisite: 602 or permission. Examination of recent trends in the expansion of international banking acts and associated revenue maximizing strategies.

602 MANAGERIAL FINANCE 3 credits
Prerequisite: 6200:601 or equivalent. 6400:602 may be taken concurrently with 6200:601.

631 FINANCIAL MARKETS AND INSTITUTIONS 3 credits
Prerequisite: 602 or equivalent. A study of major financial markets and financial institutions with an emphasis on the decision making processes within a rapidly changing, but regulated operating environment.

645 INVESTMENT ANALYSIS 3 credits
Prerequisite: 602 or equivalent. Study of the economic and market forces that influence securities. Techniques of analysis used in evaluating limited income and equity securities.

650 TECHNIQUES OF FINANCIAL MODELING 3 credits
Prerequisites: 5250:600 and 6400:602. Current techniques and methods of financial analysis are examined, including the use of financial models for short and long run profitability decisions.

651 GOVERNMENT AND BUSINESS 3 credits
Public policy with regard to business institutions and issues are considered from an economic, legal, and political framework.

674 STRATEGIC FINANCIAL DECISION MAKING 3 credits
Prerequisite: 602. Examines the role of financial decision makers as strategic consultants to organizations or units/functional groups with integrative decision-making role.

678 CAPITAL BUDGETING 3 credits
Prerequisite: 602 or equivalent. Attempt to integrate various theories of capital budgeting into a capital budgeting conceptual scheme. Theoretical concepts and practical applications blended for better understanding of capital problems.

681 MULTINATIONAL CORPORATE FINANCE 3 credits
Prerequisite: 602 or equivalent. Financial policies and practices of companies involved in multinational activities. Focuses on the integration of working capital and permanent assets, return on investment and capital budgeting for the global firm.

685 E-BUSINESS: LEGAL ISSUES 3 credits
Study of the application of law to emerging e-commerce form of business with concentration on emerging law and policy.

690 SELECTED TOPICS IN FINANCE 3 credits
(May be repeated for a total of six credits) Prerequisite: 602 or equivalent. Provides study of contemporary issues and areas not covered in current finance graduate courses.

691 INTERNATIONAL MARKETS AND INVESTMENTS 3 credits
Prerequisite: 602 or equivalent. A study of international financial markets with an emphasis on international investments and risks in a rapidly changing global economy.

697 INDEPENDENT STUDY IN FINANCE 1-3 credits
(May be repeated for a total of six credits) Focus on special topics of study and research in finance on an independent basis.

MANAGEMENT 6500:

520 MANAGEMENT OF DATA NETWORKS 3 credits
Prerequisite: 602. Principles of the design and management of data networks for business communications.

533 SUPPLY CHAIN LOGISTICS PLANNING 3 credits
Prerequisites: 670, 675. Emphasis on the importance of planning in the development of the domestic and global supply chain logistics system that includes transportation, inventory, warehousing, and procurement.

571 PROJECT MANAGEMENT 3 credits
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.

576 SUPPLY CHAIN SOURCING 3 credits
Prerequisite: 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.

580 INTRODUCTION TO HEALTH-CARE MANAGEMENT 3 credits
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.

582 HEALTH SERVICES OPERATIONS MANAGEMENT 3 credits
Prerequisite: 580 or 600 or equivalent or permission of instructor. Application of operations and systems analysis to health services organizations.

585 SPECIAL TOPICS IN HEALTH SERVICES ADMINISTRATION 1-3 credits
Prerequisite: permission of instructor. Special topics in health services administration (e.g., management) focusing on historical and/or contemporary managerial organizational and/or policy/strategy issues as related to healthcare organizations and healthcare systems. Separate topics may be repeated for a maximum of six credits. For those registered for graduate credit, a major paper is required.

601 QUANTITATIVE DECISION MAKING 3 credits
Prerequisite: 602 or equivalent. An introduction to the use of integrated spreadsheet software, database management software and the analysis and design of management information systems.

605 BUSINESS APPLICATIONS DEVELOPMENT 3 credits
The analysis and automation of standard business processes with examples from diverse business functions. Students will integrate these applications for business decision making.

608 ENTREPRENEURSHIP 3 credits
Prerequisite: undergraduate or graduate standing and 301 or 600 or equivalent. Students develop new products and work with entrepreneurial businesses in the development and implementation of business plans that are presented to investors and entrepreneurs in local and international business plan competitions.

620 E-BUSINESS FOUNDATIONS 3 credits
Prerequisite: 602 or 620. This course provides a foundation in internet related technologies for successfully managing an e-business. Students will be required to design and implement a functional e-business prototype.

640 INFORMATION SYSTEMS AND IT GOVERNANCE 3 credits
Prerequisite: 602. Covets issues, strategies, tactics for managing organizational use of information technology and systems. Includes strategic alignment, project management, offshoring, security, application systems, and emerging technologies.

641 BUSINESS DATABASE SYSTEMS 3 credits
Prerequisites: 602. Introduction to database design and implementation, management, and database maintenance.

643 ANALYSIS AND DESIGN OF BUSINESS SYSTEMS 3 credits
Prerequisites: 602 or 6200:601. A hands-on treatment of the methods used to develop different types of business information systems.

644 KNOWLEDGE MANAGEMENT AND BUSINESS INTELLIGENCE 3 credits
Prerequisites: 602 or 6200:601. Emphasizes the importance of planning in the development of the domestic and global supply chain logistics system that includes transportation, inventory, warehousing, and procurement.

645 SOFTWARE DEVELOPMENT AND QUALITY ASSURANCE 3 credits
Prerequisite: 602. Introduction to business software development and quality assurance. Student teams will work on projects with an emphasis on implementation of business systems.

646 ENTERPRISE SYSTEMS IMPLEMENTATION 3 credits
Prerequisite: 602. The configuration and implementation of Enterprise Systems to support the cross functional integration of business processes.

648 MANAGEMENT OF TELECOMMUNICATIONS 3 credits
Prerequisites: 602 or 6200:603. An introduction to the use and management of telecommunications resources to support the activities of the organization.

650 HUMAN RESOURCE SYSTEMS FOR MANAGERS 3 credits
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.

651 MANAGEMENT OF ORGANIZATIONAL TRANSFORMATION 3 credits
Prerequisite: 600 or equivalent. A comprehensive study of innovations in organizations designed to increase human satisfaction and productivity through changes in human management.

652 ORGANIZATIONAL BEHAVIOR 3 credits
Prerequisite: 600 or equivalent. Study of factors which influence human behavior in business organizations. Emphasis on theories of individual and group behavior, motivation, leadership and communication in organizations.

653 ORGANIZATIONAL THEORY 3 credits
Prerequisite: 600. Examines the structure, design and overall effectiveness of a business organization.

654 MANAGEMENT OF ORGANIZATIONAL CONFLICT 3 credits
Prerequisite: 600 or equivalent. Course emphasizes ensuring 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
540 PRODUCT AND BRAND MANAGEMENT
3 credits
540: Applied research and practical application of the marketing management process in a brand management setting.

2 credits
570 BUSINESS NEGOTIATIONS
Examines complex business negotiation strategies and tactics in a global environment.

3 credits
580 SALES MANAGEMENT
Develops a strategy for managing a new and existing sales force.

3 credits
600 MARKETING CONCEPTS
Introduction to the field of marketing management.
MUSIC 750:

525 MUSIC TEACHING METHODOLOGIES FOR GRADUATE STUDENTS 2 credits
Basic pedagogic techniques related to the teaching of undergraduate music courses, including preparation of syllabi, methods of evaluation, and instruction on class preparation and presentation.

526 GRADUATE MUSIC THEORY REVIEW 2 credits
Prerequisite: Undergraduate music theory equivalent to four semesters. Review of basic music: a theory concepts. Coverage includes the chromatic harmony vocabulary of the 18th, 19th, and 20th centuries.

527 GRADUATE MUSIC HISTORY REVIEW 2 credits
Prerequisite: Undergraduate music history equivalent to four semesters of music history or literature study. Review of basic music history for graduate students. Coverage extends from antiquity to the present. Both reading and listening assignments will be required.

530 TEXT, PARKS, AND LITERATURE: PERCUSSION INSTRUMENTS 2 credits
To train undergraduate and graduate percussion students in techniques of percussion education. Emphasis on research, literature, performance, and techniques from elementary through secondary levels.

551 INTRODUCTION TO MUSICOLOGY 2 credits
Prerequisite: 252. Comparative musicology: acoustics; psychology and phonology of music; aesthetics; the history of music theory; historical musicology.

553 MUSIC SOFTWARE SURVEY AND USE 2 credits
Prerequisite: 222 or permission of instructor. A survey and evaluation of available software in the various facets of musical instruction. Students will design a course suitable for submission to a programmer.

555 ADVANCED CONDUCTING: INSTRUMENTAL 2 credits (30 clinical hours)
Prerequisite: 361 and 452 or permission. Baton techniques and problems relating to practice, reading and preparation of scores; organization of ensembles; conducting large instrumental ensembles. One hour lab required.

556 ADVANCED CONDUCTION: CHORAL 2 credits
Prerequisite: 261 or equivalent. Conducting techniques to the choral ensemble, including sight singing, ear training, error detection, tonal development, stylistic accuracy and analysis. One hour lab required.

563 REPETIORE AND PEDAGOGY: STRING INSTRUMENTS 3 credits
Prerequisite: permission of instructor. Study of the four bowed string instruments, their repertory and close relationship. To study of obvious differences in physical application of cells and bass from violin and viola, methods of bowing, sound production and coloring are close-ly related. Application of the instruments to solo, chamber and orchestral playing.

567 GUITAR PEDAGOGY 2 credits
Prerequisite: permission of instructor. A systematic analysis of prevailing schools of guitar pedagogy: sound production psychology, method books and special problems in teaching addressed.

568 GUITAR ARRANGING 2 credits
Prerequisite: permission of instructor. After comparative analyses of selected examples, student make original solo guitar arrangements of works written for other solo instruments ensembles.

569 HISTORY AND LITERATURE OF THE GUITAR AND LUTE 2 credits
Prerequisite: permission of instructor. Study of plucked, fretted, string instruments from the 16th Century to the present: construction, notation, literature and performance practices. Modern editions and recordings evaluated.

570 STUDIES IN CHORAL LITERATURE: MEDIEVAL-RENAISSANCE 2 credits
A study of choral repertoire of general structure, character, voice, notation, pitch, ornamentation, improvisation, and interpretation of dynamics, rhythm, articulation, and tempo.

571 STUDIES IN CHORAL LITERATURE: BAROQUE 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.

572 STUDIES IN CHORAL LITERATURE III: CLASSIC-ROMANTIC 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.

573 STUDIES IN CHORAL LITERATURE IV: THE 20TH CENTURY 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.

574 INTEGRATIVE CONDUCTING WORKSHOP 2 credits
A study of how to prepare and execute effective rehearsal which respond to the needs of the singers while maintaining stylistic integrity in executing the music.

590 WORKSHOP IN MUSIC 1-3 credits
Prerequisite: permission of instructor. Investigation of topics not offered in regular curriculum. Graduate student must fulfill additional requirements.

601 CHORAL LITERATURE 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.

604 DEVELOPMENT OF OPERA 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.

609 PEDAGOGY OF JAZZ IMPROVISATION 3 credits
Prerequisite: advanced standing in music education. Study of the methods and materials as they relate to the teaching of jazz improvisation.

611 FOUNDATIONS AND PRINCIPLES OF MUSIC EDUCATION 3 credits
A study of basic historical, philosophical, sociological, and psychological concepts in the context of music education.

612 PRACTICES AND TRENDS IN MUSIC EDUCATION 3 credits
A study of the history of practices and trends in American music education.

613 INSTRUCTIONAL PROGRAMMING IN MUSIC FOR THE MICROCOMPUTER 3 credits
Prerequisite: 503. Introduction to programming languages for the microcomputer including BASIC, Pascal, and Assembler. Programming will be directed towards music educational concepts.

614 MEASUREMENT AND EVALUATION IN MUSIC 3 credits
A study of measurement and evaluation techniques and their application in music education.

615 MUSICAL STYLES AND ANALYSIS I 2 credits
Prerequisite: permission of instructor. Detailed study of compositional techniques and stylistic traits observed in Western music from period of Gregorian chant through music of Palestrina Gesualdo and others of late Renaissance.

616 MUSICAL STYLES AND ANALYSIS II 2 credits
Prerequisite: permission of instructor. Detailed study of compositional techniques and stylistic traits observed in Western music from Monteverdi through early Beethoven.

617 MUSICAL STYLES AND ANALYSIS III 2 credits
Prerequisite: permission of instructor. Detailed study of compositional techniques and stylistic traits observed in Western music from period of late Beethoven through Mahler and Strauss.

618 MUSICAL STYLES AND ANALYSIS IV 2 credits
Prerequisite: permission of instructor. Detailed study of compositional techniques and stylistic traits observed in Western music in 20th Century.

621 MUSIC HISTORY SURVEY: MIDDLE AGES AND RENAISSANCE 2 credits
Prerequisite: permission of instructor. Historical and stylistic analysis of all aspects of music of Middle Ages and Renaissance. Research and writing in areas of special interest.

622 MUSIC HISTORY SURVEY: BAROQUE 2 credits
Prerequisite: permission of instructor. Historical and stylistic analysis of Baroque music. Study in depth of specific examples, from recordings, scores and live performances; continuation and synthesis of approaches to study of music history; selected readings related to each student's particular fields of interest; project papers.

623 MUSIC HISTORY SURVEY: CLASSIC AND ROMANTIC 2 credits
Prerequisite: permission of instructor. Historical and stylistic analysis of classic and romantic music; study in depth of specific examples, through recordings, scores and live performances; continuation and synthesis of approaches to study of music history; selected readings related to each student's particular fields of interest; project papers.

624 MUSIC HISTORY SURVEY: MUSIC SINCE 1900 2 credits
Prerequisite: permission of instructor. Historical and stylistic analysis of music since 1900; study in depth of specific examples through recordings and live performances, continuation and synthesis of approaches to study of music history; selected readings and project papers.

625 GRADUATE BIBLIOGRAPHY AND RESEARCH IN MUSIC 2 credits
Prerequisite: undergraduate music degree of equivalent. Examination of all types of published music materials; research methods for thesis preparation and professional publishing; field study of music libraries, components of general structure.

627 COMPUTER SOFTWARE DESIGN 2 credits
The design and maintenance of a computer lab. Emphasis on hardware and software setup to maximize function and minimize maintenance.
630 TEACHING AND LITERATURE: BRASS INSTRUMENTS 2 credits
Prerequisite: permission of instructor. Research in current trends and issues in brass teaching techniques and appropriate literature.

631 TEACHING AND LITERATURE: WOODWIND INSTRUMENTS 2 credits
Prerequisite: permission of instructor. To delineate and clarify contemporary techniques of woodwind pedagogy and to develop a comprehensive understanding of woodwind literature.

633 TEACHING AND LITERATURE: PIANO AND HARPSCORD 2 credits
Prerequisite: permission of instructor. The examination of piano and harpsichord literature in historically chronological order with special attention to its psychological and stylistic differences.

634 TEACHING AND LITERATURE: STRING INSTRUMENTS 2 credits
Prerequisite: permission of instructor. Research in current trends and issues in string teaching techniques and appropriate literature.

640,1,2,3 ADVANCED ACCOMPANYING I, II, III, IV 1 credit each
Prerequisite: Graduate standing in keyboard performance and/or accompanying and the permission of the instructor. An in-depth study of principles of accompanying, sight-reading, standard repertoire, and transposition.

653 ELECTRONIC MUSIC 3 credits

657 STUDENT RECITAL 0 credits
Required of all music majors. Forum for student and faculty providing lectures, recitals, and opportunities to practice skills for successful music performance.

665 VOCAL PEDAGOGY 3 credits
Prerequisite: permission. In-depth study of subjects dealing with teaching of voice: physiology of vocal structures, principles governing vocal production and application of vocal pedagogy.

666 ADVANCED SONG LITERATURE 2 credits
Prerequisite: permission of instructor. Systematic study of song literature presented chronologically according to national schools of composition. Stylistic compositional characteristics and representative works of all major composers of solo song literature.

675 SEMINAR IN MUSIC EDUCATION 1-3 credits
(May be repeated for a total of 6 credits) Intensive examination of special topics in the field of music education.

697 ADVANCED PROBLEMS IN MUSIC 1-3 credits
(May be repeated for a total of eight credits) Prerequisite: permission of graduate advisor. Studies or research projects related to problems in music.

698 GRADUATE RECITAL 2 credits
Prerequisite: permission of graduate advisor. Recital prepared and presented as a requirement for any appropriate degree option. If recital document is to be written in conjunction with the recital, add 699 for the additional credit. Once passed, may not be repeated for credit.

699 MASTER’S THESIS/PROJECT 4-6 credits
Prerequisite: permission of graduate advisor. Research related to the completion of the master’s thesis, project, or recital document written in conjunction with the graduate recital, depending on the student’s degree option.

MUSICAL ORGANIZATIONS 7510:

602 AKRON SYMPHONY CHORUS 1 credit
Open to University and community members by audition. Prospective members should contact School of Music two weeks before semester begins. Performs with Akron Symphony Orchestra.

603 UNIVERSITY SYMPHONY ORCHESTRA 1 credit
Membership by audition. Organization devoted to study of orchestral literature. Full-length concerts of all University appearances. Major conducted ensemble.

604 SYMPHONIC BAND 1 credit
Membership by audition. The University Symphony Band is the most select band at the University and performs the most demanding and challenging music available.

605 VOCAL CHAMBER ENSEMBLE 1 credit
Membership open to those enrolled in applied voice studies. Coaching and rehearsal of solo and ensemble literature for voices from operatic, oratorio and lieder repertories.

606 BRASS ENSEMBLE 1 credit
Membership by audition. Study and performance of literature for brass ensemble from all periods of music history. Frequent public concerts. For advanced brass players.

607 STRING ENSEMBLE 1 credit
Membership by audition. In-depth study and performance of chamber music literature with special emphasis on string quartet and piano trio.

608 OPERA WORKSHOP 1 credit
Membership by audition. Musical and dramatic group study of excerpts from operatic repertoire. Includes annual production of standard opera and/or contemporary chamber work with staging, costumes and scenery.

609 PERCUSSION ENSEMBLE 1 credit
Membership by audition. Study and performance of literature for various percussion groups; develops skill in ensemble performance.

610 WOODWIND ENSEMBLE 1 credit
Membership by audition. Study and performance of orchestral literature from all periods for various combinations of woodwinds. Develops performance skills and knowledge of woodwind literature.

614 KEYBOARD ENSEMBLE 1 credit
In-depth study of ensemble playing. Required for keyboard assistantship recipients.

615 JAZZ ENSEMBLE 1 credit
Membership by audition. Provides experience in jazz ensemble performance. A student is assumed to have knowledge of rudiments of music and some experience in jazz ensemble performance.

618 SMALL ENSEMBLE-MIXED 1 credit
Chamber Ensemble, Baroque Ensemble and Contemporary Music Ensemble. Each is a group of diverse instruments which rehearses and performs a selected body of music.

620 CONCERT CHOR 1 credit
Membership by audition. Highly select mixed choir. Performs classical literature from all periods. Campus, regional, and tour performances. “Major conducted ensemble” for vocal majors.

621 UNIVERSITY SINGERS 1 credit
Membership by audition. Mixed ensemble devoted to performance of a wide variety of choral literature from classical to popular. “Major conducted ensemble” for vocal majors.

625 CONCERT BAND 1 credit
Membership by Audition. Performs the finest in concert band literature available for concert bands today.

628 MARCHING BAND 1 credit
This organization is noted for its high energy performances a University football games. Enrollment is open to all members of the University student body.

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 (800 for freshmen, 200 for sophomore, etc.) A student may progress up to 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 BARITONE
535 Tuba
536 FLUTE OR PICCOLO
537 OBOE OR ENGLISH HORN
538 CLARINET OR BASS CLARINET
539 BASSOON OR CONTRABASSOON
540 SAXOPHONE
541 HARPSCORD
542 PRIVATE LESSONS IN MUSIC COMPOSITION 2-4 credits each
(May be repeated) Prerequisites: 7500:252 and permission of instructor; 7500:452 recommended. Private instruction in composition. Primarily for student whose major is theory-composition.

621-661 GRADUATE STUDY IN APPLIED MUSIC 2 or 4 credits each
(May be repeated) Prerequisite: permission of instructor. Undergraduate degree in music, graduate standing and/or permission of instructor determined through audition.

621 PERCUSSION
622 CLASSICAL GUITAR
623 HARP
624 VOICE
625 PIANO
626 ORGAN
627 VIOLIN
628 VIOLA
629 CELLO
630 STRING BASS
631 TRUMPET OR CORNET
632 FRENCH HORN
633 TROMBONE
634 BARITONE
635 Tuba
636 FLUTE OR PICCOLO
637 OBOE OR ENGLISH HORN
638 CLARINET OR BASS CLARINET
639 BASSOON OR CONTRABASSOON
640 SAXOPHONE
641 HARPSCORD
642 APPLIED COMPOSITION
661 JAZZ PERCUSSION
662 JAZZ GUITAR 2-4 credits each
(May be repeated) Prerequisite: undergraduate degree with a major in music. Private instruction in composition offered primarily for a student majoring in composition. Another student may be approved by composition faculty.

663 JAZZ ELECTRIC BASS
664 JAZZ PIANO
665 JAZZ TRUMPET
666 JAZZ TROMBONE
COMMUNICATION 7600:

500 HISTORY OF JOURNALISM IN AMERICA 3 credits
A review and analysis of the historical evolution of journalism in America, focusing primarily on newspapers, magazines, radio, television.

506 CONTENORARY RELATIONS 3 credits
Study of practical application of communication concepts, theories and skills relevant to business programs in businesses and nonprofit organizations.

508 WOMEN, MINORITIES AND NEWS 3 credits
Study of images of women and minorities in U.S. news, along with the power women and minorities have as decision-makers in the news industry.

516 NEW MEDIA WRITING 3 credits
Prerequisite: Permission. This class will look at how today's professionals practice online publishing. Students will work on writing and reporting skills need in New Media.

517 MEDIA PRODUCTION 3 credits
Prerequisite: 516 or permission. Covers practical application of software to create on-line multimedia documents and explores design ideas for New Media content.

520 MAGAZINE WRITING 3 credits
An intensive, writing class designed to develop the specialized reporting, researching, and writing skills needed in consumer and specialized business magazines today.

525 COMMERCIAL ELECTRONIC PUBLISHING 3 credits
Theories and case studies in depth investigation of the business and production principles of electronic publishing of magazines.

535 COMMUNICATION IN ORGANIZATIONS 3 credits
Overview of theories of communication and approaches to understanding communication flow and practices in organizations; including interdepartmental, networks, superordinate/format, formal and informal communication.

536 ADVANCED ORGANIZATIONAL COMMUNICATION 3 credits
Prerequisite: 535 or permission. Methodology for indepth analysis and application of communication in organizations; team building, conflict management, communication flow, individual and group projects; simulations.

537 TRAINING METHODS IN COMMUNICATION 3 credits
Principles and concepts in the design and delivery of communication training programs; integration of theory and methodology; presentation skills; matching methods and learner needs.

538 HEALTH COMMUNICATION 3 credits
This course presents an overview of health communication theory and research issues in interpersonal, small group, organizational, public relations, and mass media contexts.

546 WOMEN, MINORITIES, AND MEDIA 3 credits
Examination of the media's portrayal of white women and people of color and the roles of media decisionmakers as powerful counterparts to these images.

550 THEORY OF GROUP PROCESSES 3 credits
Group communication theory and conference leadership as applied to individual projects and seminar reports.

557 PUBLIC SPEAKING IN AMERICA 3 credits
Survey and critical analysis of major speakers, speeches and speech movements in American history. Examines how style and content of American speaking influenced events and reflected them.

559 LEADERSHIP AND COMMUNICATION 3 credits
Theories of leadership and communication across professional, small group, organizational, public relations, and mass media contexts.

562 ADVANCED MEDIA WRITING 3 credits
Practical applications of script writing principles and techniques, focusing on the skills and discipline required to finish an entire script.

566 ADVANCED AUDIO/VIDEO EDITING 3 credits
Prerequisite: Permission of instructor. Advanced computerized multi-track audio and video editing. Theory and practice of multi-track sound mix for video productions.

571 THEORIES OF RHETORIC 3 credits
Study of key figures in history of rhetorical theory, stressing interrelationships among theories of rhetoric, intellectual climates and social climates.

575 POLITICAL COMMUNICATION 3 credits
Students explore the relationship between politicians, citizens, and media. Topics include media coverage, 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 media coverage, campaign technologies, advertising, debates, engagement, rhetoric, and attitudes. Theories and methodologies analyzed.

580 COMMUNICATION WORKSHOP 1-3 credits
May be repeated for a total of six credits. Group study or group projects investigating a particular phase of media not covered by other courses in curriculum. (May be repeated as different subject areas are covered, but no more than 12 credits may be applied toward M.A. degree) Traditional and experimental courses in theatre, supplementing those listed in the General Bulletin.

582 THEATRE 7800:

555 CREATING PERFORMANCE 3 credits
Prerequisite: 608. (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.

557 CONTEMPORARY THEATRE STYLES 3 credits
Prerequisites: Permission. A study of performance styles of the contemporary theatre.

560 METHODS OF TEACHING ELEMENTARY THEATRE ARTS 3 credits
Prerequisite: Graduate status. Course provides skills, knowledge, and experience essential to teaching innovative and creative theatre arts in the elementary school. (May be repeated for a total of six credits.)

562 METHODS OF TEACHING SECONDARY THEATRE ARTS 3 credits
Prerequisite: Graduate status. This course presents skills, knowledge, and experiences essential to teaching innovative and creative theatre arts in the elementary school curriculum.

570 ACTING FOR THE MUSICAL THEATRE 3 credits
Prerequisite: Permission. A study of acting in performing roles in musicals. Guest speakers.

590 WORKSHOP IN THEATRE ARTS 1-3 credits
May be repeated for a total of six credits. Prerequisites: Advanced standing or permission. Group study or group projects investigating particular phases of theatre arts not covered by other courses in curriculum.

591 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.

593 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. Traditional and experimental courses in theatre, supplementing those listed in the General Bulletin.

595 COLLOQUIUM ON THE ARTS 3 credits
A brief exploration of the major visual and performing art forms and organizations examined in relationship to the business management of arts. Team taught.

597 PROBLEMS IN DIRECTING 3 credits
Advanced directing course with special emphasis on staging of complex plays from all periods of dramatic literature.

598 SEMINAR IN DRAMATIC LITERATURE 3 credits
A representative Western stage play (non-American) are examined in theatrical, historical, and critical/theoretical contexts.

599 GRADUATE ACTING: TECHNIQUES 3 credits
Advanced study of basic acting techniques, especially Stanislavski, through analysis and performance. Voice/Movement Lab required.

608 GRADUATE ACTING: PROBLEMS 3 credits
Study of problems confronting the advanced actor in various modern styles of performance. Voice/Movement Lab required.

609 HISTORY OF THEATRE 3 credits
Study of theatre history from the Greeks to the present with emphasis on physical theatre, conventions, and theatre architecture of each period.

609 STAGE LIGHTING DESIGN AND TECHNOLOGY 3 credits
Study of the art and technique of stage lighting design, including drafting of lighting plots, function of lighting instruments and control.

610 ADVANCED THEATRE ARTS 3 credits
Processes including multiple set productions, revolves and their rigging, techniques in simple hydraulic, pneumatics and load capacities, and properties and techniques in multi-media.

612 SEMINAR IN SCENE DESIGN 3 credits
Prerequisite: 106 or undergraduate studio design course or permission of instructor. Study of problems in scene design. Portfolios of projects, research of noted designers, studies of theatre spaces, and new scenographic materials.

615 AUDIENCE DEVELOPMENT 3 credits
Developing audiences for the Arts through Arts marketing techniques, including selecting a season and single ticket campaigns, promotional strategies, media/public relations, market research, and telemarketing.

616 PRINCIPLES OF ARTS ADMINISTRATION 3 credits
Principles and practices in nonprofit arts management, including organizational structure, function of boards, personnel and volunteer management, and public policy for the arts.
Health Sciences & Human Services

FAMILY AND CONSUMER SCIENCES 7400:

500 NUTRITION COMMUNICATION AND EDUCATION SKILLS 4 credits
Prerequisite: Permission of instructor. Theory and development of communication and education skills essential to dietetic practice; interpersonal communication; interviewing; nutrition counseling; education techniques, media, and current technology.

501 AMERICAN FAMILIES IN POVERTY 3 credits
Overview of the issues, trends, and social policies affecting American families living in poverty. Online section available.

502 ADVANCED FIBER ARTS 2 credits
Prerequisite: Permission of instructor. An advanced course that builds on the skills taught in the prerequisite, with the intention of reaching a caliber suitable for one of the many professions in this field, including business aspects such as market analysis and product development.

503 ADVANCED FOOD PREPARATION 3 credits
Prerequisite: 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
Prerequisite: Permission of instructor. The influences of middle childhood and adolescent behavior on the family and the influences of the family environment on middle childhood and adolescent development.

506 FAMILY FINANCIAL MANAGEMENT 3 credits
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 4 credits
Provides student with knowledge of current business and industrial practices at level minimally comparable with employment expectations of graduates of vocational job training programs in Family and Consumer Sciences.

513 FOOD SYSTEMS MANAGEMENT I 3 credits
Prerequisite: Acceptance by the graduate program or permission of instructor. Advanced concepts in management of dietetic service systems relating to achievement of nutritional care goals.

514 FOOD SYSTEMS MANAGEMENT II CLINICAL 3 credits
Prerequisite: Acceptance CP program. Corequisite: 513. This clinical experience involves the role of the dietitian in the graduate program or permission of instructor. Professional competencies are learned, leading to employment as an entry level dietitian.

518 HISTORY OF INTERIOR DESIGN I 4 credits
The study of furnishings, interiors, and architecture from antiquity through the eighteenth century, with emphasis on the socio-cultural influences shaping their development.

519 HISTORY OF INTERIOR DESIGN II 4 credits
The study of nineteenth and twentieth-century furnishings and interiors, with emphasis on the socio-cultural influences shaping their development.

522 TEXTILES FOR INTERIORS 3 credits
Prerequisite: Permission of instructor. Evaluation 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 3 credits
Prerequisite: Permission of instructor. Study of the physiological basis for nutritional requirements, intervening factors which affect growth, development, maturation and nutritional status from conception through the elderly years.

525 TEXTILES FOR APPAREL 3 credits
Prerequisite: Permission of instructor. 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 3 credits
Prerequisite: Acceptance into the graduate program or permission of instructor. Corequisite: 543. Application of principles of nutrition, metabolism, and assessment. Analysis and interpretation of current literature.

527 GLOBAL ISSUES IN TEXTILES AND APPAREL 3 credits
Prerequisite: Permission of instructor. Examines the global structure and scope of the textile and apparel industries emphasizing an economic perspective.

528 NUTRITION IN MEDICAL SCIENCE II 3 credits
Prerequisite: Acceptance into the graduate program or permission of instructor. Emphasizing nutritional implications of more complex metabolic and pathological conditions as well as nutrition support strategies.

529 NUTRITION IN MEDICAL SCIENCE II CLINICAL 3 credits
Prerequisite: Admission to CP program. Corequisite: 528. Clinical experience in hospitals; application of principles of nutritional care.

531 PROFESSIONAL PRESENTATION SKILLS IN FAMILY & CONSUMER SCIENCES 3 credits
Prerequisite: Permission of instructor. Emphasis on development of abilities and strengths in communication of equipment, materials, motion, speech, and presentation delivery relating to education and industry in Family and Consumer Sciences.

536 TEXTILE CONSERVATION 3 credits
Prerequisite: Permission of instructor. Principles and practices of textile conservation with special emphasis on procedures appropriate for collectors and small historical agencies.

537 HISTORIC COSTUME 3 credits
Study of western costume and textiles from antiquity to 1830, with emphasis on social-cultural influences.

538 HISTORY OF FASHION 3 credits
Prerequisite: Permission of instructor. Study of western fashion, textiles, and designers from the eighteenth century to present, with emphasis on social-cultural influences.

540 FAMILY CRISIS 3 credits
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 3 credits
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 3 credits
Prerequisite: 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 3 credits
Corequisites: 542 or permission. Application of principles of nutrition assessment. Analysis and interpretation of current literature. Open to dietetics majors only.

544 NUTRITION IN MEDICAL SCIENCE LONG TERM CARE - CLINICAL 2 credits
Prerequisites: CP graduate students only. Clinical experiences in long term care facilities for application of principles of nutritional care.

546 CULTURE, ETHNICITY AND THE FAMILY 2 credits
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 2 credits
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 3 credits
Prerequisite: Permission of instructor. Theory and experience in clothing design using flat pattern techniques.

551 CHILD IN THE HOSPITAL 4 credits
Prerequisite: Permission of instructor. Seminar dealing with special needs and problems of hospitalized child and family. Literature related to effects, separation, illness and stress. Examination of strategies for coping.

552 CHILD, ILLNESS AND LOSS 3 credits
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 3 credits
Theories, strategies and skills needed to facilitate support groups for children and for adults are studied using a variety of approaches including participation in a support group.

555 PRACTICUM EXPERIENCE IN A CHILD LIFE PROGRAM 3 credits
Prerequisite: 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 3 credits
Theory, principles and procedures involved in establishing and operating centers for infants, toddlers, preschool and school-age children.

561 CASE MANAGEMENT FOR CHILDREN AND FAMILIES I 3 credits
Provides an overview of case management basics in a multi-systems collaborative context. Includes roles, values, principles, state and service systems, and service coordination.

562 CASE MANAGEMENT FOR CHILDREN AND FAMILIES II 3 credits
Prerequisite: 561. Provides in-depth exploration of Case Management principles and practice. Emphasis on process and functions, assessment, cross-system service planning and coordination, advocacy, and cultural diversity.

570 THE FOOD INDUSTRY: ANALYSIS AND FIELD STUDY 3 credits
Prerequisite: permission. Role of technology in extending the food supply. Chemical, physical and biological effects of processing and storage, on-site tours of processing plants.

574 CULTURAL DIMENSIONS OF FOOD 3 credits
An examination of cultural, geographical and historical influences on development of food habits. Emphasis on evolution of diets, effects of religion, education, gender roles, media.

576 DEVELOPMENTS IN FOOD SCIENCE 3 credits
Prerequisite: permission. Advanced study of the chemistry and physics of food components, affecting characteristics of foods. Critical evaluation of current basic and applied research emphasized.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>715</td>
<td>CENTRAL AUDITORY PROCESSING: EVALUATION AND MEASUREMENT</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Prerequisites: 705 and 706. Study of audiologic evaluation and habilitation/rehabilitation process for people having hearing impairments.</td>
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<tr>
<td>716</td>
<td>ADULT HEARING AID FITTING AND SELECTION</td>
<td>3</td>
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<tr>
<td></td>
<td>Prerequisite: 713. Examination of the theory and practice of fitting hearing aids. Emphasis on special clinical procedures, research needs, and evolving technology in hearing instruments (includes 1 credit hour lab).</td>
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<tr>
<td>717</td>
<td>PEDIATRIC AUDIOLOGY</td>
<td>3</td>
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<tr>
<td></td>
<td>Prerequisite: 709. Study of audiologic diagnostic and auditory habilitative protocols for the birth to 5-year-old population. Both assessment and management strategies will be emphasized.</td>
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<tr>
<td>718</td>
<td>COCHLEAR IMPLANTS</td>
<td>2</td>
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<tr>
<td></td>
<td>Prerequisite: admission to the Au.D. program or permission of instructor. Study of cochlear implants in children and adults including equipment, candidacy, mapping, and overview of (re)habilitation.</td>
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<tr>
<td>719</td>
<td>COUNSELING IN AUDIOLOGY</td>
<td>3</td>
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<td></td>
<td>Prerequisite: admission to the Au.D. program or permission of instructor. Focus on interviewing, counseling, and interacting with individuals with hearing impairments, their families, and significant others.</td>
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<tr>
<td>720</td>
<td>PEDIATRIC AMPLIFICATION</td>
<td>3</td>
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<tr>
<td></td>
<td>Prerequisites: 713, 716. The focus of study is on amplification systems and fitting techniques for the pediatric population.</td>
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<tr>
<td>721</td>
<td>EVALUATION AND MANAGEMENT OF BALANCE DISORDERS</td>
<td>3</td>
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<tr>
<td></td>
<td>Prerequisite: admission to the Au.D. program or permission of instructor. Study of the balance mechanism; differential diagnostic assessment of balance disorders including electromyography, posturography and rotational testing; rehabilitation of the balance disordered patient (includes 1 credit hour lab).</td>
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<tr>
<td>722</td>
<td>AUDIOLOGIC MANAGEMENT OF THE SCHOOL-AGED CHILD</td>
<td>3</td>
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<td></td>
<td>Prerequisite: 717. Focus on educational audiology, Features delivery of audiologic services designed to address the school environment for children ages 4-21.</td>
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<tr>
<td>723</td>
<td>AUDIOLOGIC REHABILITATION OF ADULTS</td>
<td>3</td>
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<td></td>
<td>Prerequisite: 716. Study of current methodologies employed in the audiologic rehabilitation of adult individuals. Implementation of remedial strategies is emphasized.</td>
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<tr>
<td>724</td>
<td>HISTORY OF AUDIOLOGY</td>
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<td></td>
<td>Prerequisite: admission to the Au.D. program or permission of instructor. An examination of the history of deafness/hearing impairment and the profession of audiology.</td>
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<tr>
<td>725</td>
<td>MEDICAL MANAGEMENT OF AUDITORY DISORDERS</td>
<td>2</td>
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<tr>
<td></td>
<td>Prerequisite: 712. A study of the multidisciplinary approach to medical/surgical management of adult auditory disorders.</td>
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<tr>
<td>726</td>
<td>ELECTROPHYSIOLOGICAL TECHNIQUES IN AUDIOLOGY</td>
<td>3</td>
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<tr>
<td></td>
<td>Prerequisite: 709. Study of evoked responses used in diagnostic audiology, including ABR, VNG, ECoG, ENG, ALP, P3000, VER, and SSW.</td>
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<tr>
<td>727</td>
<td>CULTURAL ISSUES IN DEAFNESS</td>
<td>2</td>
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<tr>
<td></td>
<td>Prerequisite: admission 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.</td>
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<tr>
<td>728</td>
<td>SEMINAR IN AUDIOLOGY</td>
<td>2</td>
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<td></td>
<td>Prerequisite: admission to the Au.D. program or permission of instructor. Selected current topics in audiology with emphasis on review of current literature. Course may be repeated up to six credits.</td>
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<tr>
<td>729</td>
<td>RESEARCH PROJECT IN AUDIOLOGY</td>
<td>3</td>
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<td></td>
<td>Prerequisite: admission to the Au.D. program or permission. Completion of a Doctoral Research Project including data collection, analysis, write-up, and oral presentation.</td>
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<td>730</td>
<td>PRACTICE MANAGEMENT IN AUDIOLOGY</td>
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<td></td>
<td>Prerequisite: admission 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.</td>
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<tr>
<td>731</td>
<td>FOURTH YEAR SEMINAR</td>
<td>1</td>
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<td></td>
<td>Prerequisite: admission to the Au.D. program or permission of instructor. Corequisite: 743 or 750 or permission of instructor. In depth consideration of topics/issues in the practice of audiology with emphasis upon issues related to clinical rotation issues. Repeatable up to six credits.</td>
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<tr>
<td>732</td>
<td>DIRECTED OBSERVATION IN AUDIOLOGY I</td>
<td>1</td>
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<td></td>
<td>Prerequisite: admission to the Au.D. program or permission of instructor. Introduction to clinical pracitc in Audiology. Directed observation of clinical practice including audiological diagnostic and audiologic habilitation is required. Repeatable up to six credits.</td>
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<tr>
<td>733</td>
<td>DIRECTED OBSERVATION IN AUDIOLOGY II</td>
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<tr>
<td></td>
<td>Prerequisite: 741. Introduction to clinical practice in Audiology. Directed observation of clinical practice including audiological diagnostic and audiological rehabilitation is required. Repeatable up to six credits.</td>
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<tr>
<td>734</td>
<td>CLERKSHIP I</td>
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<td></td>
<td>Corequisite: 709. Clinical practicum in audiology during which students perform discrete task under supervision. Repeatable for up to 6 credits.</td>
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<tr>
<td>735</td>
<td>CLERKSHIP II</td>
<td>1</td>
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<tr>
<td></td>
<td>Prerequisite: 743. Supervised clinical practicum in audiology during which students perform discrete clinical tasks while under supervision. Repeatable for up to 6 credits.</td>
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<tr>
<td>736</td>
<td>INTERNSHIP IN AUDIOLOGY</td>
<td>2</td>
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<td></td>
<td>Prerequisite: 744 and permission. Supervised practicum in audiology requiring the independent performance of basic audiologic procedures, including hearing aid management. Repeatable up to eight credits.</td>
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<tr>
<td>737</td>
<td>INTERNSHIP IN AUDIOLOGY II</td>
<td>2</td>
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<td></td>
<td>Prerequisites: 745 and permission. Supervised clinical practicum in audiology requiring the independent performance of clinical and audiologic procedures, rehabilitation, and vestibular assessment and rehabilitation. Repeatable up to eight credits.</td>
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<tr>
<td>738</td>
<td>GRADUATE AUDIOLOGIST</td>
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<td></td>
<td>Prerequisites: 746. Supervised clinical practicum in audiology which encompasses audiological assessments and audiologic rehabilitation. Repeatable for up to 9 credits.</td>
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<tr>
<td>739</td>
<td>GRADUATE AUDIOLOGIST II</td>
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<td></td>
<td>Prerequisites: 747 and permission. Supervised clinical practicum in audiology requiring the independent performance of audiological procedures, audiologic rehabilitation, and vestibular assessment and rehabilitation. Repeatable for up to 9 credits.</td>
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<tr>
<td>740</td>
<td>GRADUATE AUDIOLOGIST III</td>
<td>8</td>
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<td></td>
<td>Prerequisites: 748, permission, successful completion of PRAXIS Exam. Corequisite: 731. Supervised clinical practicum in audiology requiring the independent performance of audiologic assessment procedures, audiologist rehabilitation, and vestibular assessment and rehabilitation. Repeatable up to 24 credits.</td>
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</tr>
</tbody>
</table>
663 PSYCHOPATHOLOGY AND SOCIAL WORK 3 credits
Prerequisite: second level graduate student or permission of instructor. An examination of the somatic and psychological symptoms, theories, and psychosocial 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 about the methodology of single-system design and skills to implement an evaluation study of their intervention with clients.

665 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, 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 MacArthur 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 problems, and how to organize and empower diverse 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 of evaluating programs in agencies, including approaches, measurement, design, data collection and analyses employed in program outcome research.

676 FISCAL MANAGEMENT OF SOCIAL AGENCIES 3 credits
Prerequisite: second level graduate student or permission of instructor. This elective course concentrates on the financial management of social administration, financial planning and management, principles of economic and fiscal exchange, accountability and fiscal accounting.

680 SOCIAL AND 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: FAMILIES 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 substantive 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 practice with people involved in substance abuse, evaluating programs, and preventive work.

693 SPECIAL TOPICS FOR ADVANCED SOCIAL WORK PRACTICE 1-3 credits
Prerequisite: admission to MSW program or permission of program director. Designed analysis and study of current practice issues and considerations faced by social work practitioners providing services and interventions at advanced levels.

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, and how social work can interface with health care providers.

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

8020:

509 INTERNATIONAL HEALTH 2-3 credits
Prerequisite: Admission to MSN program. A comparison of nursing roles and responsibilities in an international environment. The influence of education, ethics, government, demography, and geography on health care will be considered.

512 GLOBAL PERSPECTIVES OF HEALTH AND HEALTH CARE 2-3 credits
Prerequisite: Senior or graduate standing. (May be repeated for a maximum of 6 credits) Cultural, political, educational, and economical perspectives of different regions of the world and the impact of these factors on health will be compared and examined.

553 SCHOOL NURSE PRACTICUM I 5 credits
Prerequisite: 557, 552, 620 and 200-225 or 650; corequisite: 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, school contexts.

554 SCHOOL NURSE PRACTICUM II 5 credits
Prerequisites: 557, 552, 620 and 200-225 or 650, 620-553. Emphasis on primary health care nursing to enhance positive health behavior outcomes of children/adolescents with minor common health or behavioral problems and chronic illnesses.
655 CHILD AND ADOLESCENT HEALTH NURSING II 3 credits
Prerequisite: Admission to the program. Focus on Pediatric health care issues of children and adolescents with acute and chronic health problems in family/community contexts.

659 PHARMACOLOGY FOR CHILD AND ADOLESCENT HEALTH NURSING 3 credits
Prerequisite: Admission to the program. Focus on medication safety, pharmacology, and medication therapy management.

672 CHILD AND ADOLESCENT HEALTH NURSING IV PRACTICUM 3 credits
Prerequisite: Admission to the program. Focus on advanced practice in primary health care for children and adolescents with chronic health conditions.

676 INDEPENDENT STUDY 1-4 credits
Prerequisite: Permission of the instructor. Focus on advanced practice in selected area of specialization.

678 GRADUATE SEMINAR IN HUMAN DEVELOPMENT 3 credits
Prerequisite: Permission of the instructor. Focus on advanced practice in selected area of specialization.

679 CIVIL AND CRIMINAL LAW 3 credits
Prerequisite: Admission to the program. Focus on legal issues in health care delivery.

680 CHILD AND ADOLESCENT HEALTH NURSING IV 3 credits
Prerequisite: Admission to the program. Focus on advanced practice in primary health care for children and adolescents with chronic health conditions.

681 INSTRUCTIONAL METHODS IN NURSING EDUCATION 3 credits
Prerequisite: Admission to the program. Focus on instructional methods in nursing education.

682 NURSING CURRICULUM DEVELOPMENT 3 credits
Prerequisite: Admission to the program. Focus on curriculum development.

683 EVALUATION IN NURSING EDUCATION 3 credits
Prerequisite: Admission to the program. Focus on evaluation in nursing education.

684 PRACTICUM: THE ACADEMIC ROLE OF THE NURSE EDUCATOR 3 credits
Prerequisite: Admission to the program. Focus on academic role of the nurse educator.

685 CHILD AND ADOLESCENT HEALTH NURSING-ACTUARY CARE III 3 credits
Prerequisite: Admission to the program. Focus on actuarial care of children and adolescents with chronic health conditions.

686 PSYCHIATRIC MENTAL HEALTH-SYNTHESIS, APN IV PRACTICUM 2 credits
Prerequisite: Admission to the program. Focus on advanced practice in psychiatric mental health.

687 PSYCHIATRIC MENTAL HEALTH-SYNTHESIS, APN III PRACTICUM 2 credits
Prerequisite: Admission to the program. Focus on advanced practice in psychiatric mental health.

688 CHILD AND ADOLESCENT HEALTH NURSING-ACUTE CARE IV PRACTICUM 2 credits
Prerequisite: Admission to the program. Focus on advanced practice in acute care for children and adolescents with chronic health conditions.

689 PSYCHIATRIC MENTAL HEALTH-ACUTE, APN II PRACTICUM 2 credits
Prerequisite: Admission to the program. Focus on advanced practice in psychiatric mental health.

690 PSYCHIATRIC MENTAL HEALTH POST MSN RESIDENCY 1-4 credits
Prerequisite: Admission to the program. Focus on advanced practice in psychiatric mental health.

691 PSYCHIATRIC MENTAL HEALTH-ACUTE, APN I PRACTICUM 2 credits
Prerequisite: Admission to the program. Focus on advanced practice in psychiatric mental health.

692 CLINICAL MANAGEMENT II 3 credits
Prerequisite: Admission to the program. Focus on clinical management of complex chronic health problems.

693 ACUTE CARE NURSE PRACTITIONER III 4 credits
Prerequisite: Admission to the program. Focus on advanced practice in acute care for adults with chronic health conditions.

694 CLINICAL MANAGEMENT III 3 credits
Prerequisite: Admission to the program. Focus on clinical management of complex chronic health problems.

695 ACUTE CARE NURSE PRACTITIONER IV 4 credits
Prerequisite: Admission to the program. Focus on advanced practice in acute care for adults with chronic health conditions.

696 CLINICAL MANAGEMENT IV 3 credits
Prerequisite: Admission to the program. Focus on clinical management of complex chronic health problems.

697 MASTER’S THESIS 1-6 credits
Prerequisite: Admission to the program. Focus on advanced practice in selected area of specialization.

698 HISTORY AND PHILOSOPHY OF NURSING SCIENCE 4 credits
Prerequisite: Admission to the program. Focus on history and philosophy of nursing science.

699 MASTER’S THESIS 1-6 credits
Prerequisite: Admission to the program. Focus on advanced practice in selected area of specialization.

700 DOCTORAL DISSERTATION I 1-6 credits
Prerequisite: Admission to the program. Focus on advanced practice in selected area of specialization.

701 HISTORY AND PHILOSOPHY OF NURSING SCIENCE 3 credits
Prerequisite: Permission of the instructor. Focus on history and philosophy of nursing science.

702 THEORY CONSTRUCTION AND DEVELOPMENT IN NURSING 3 credits
Prerequisite: Permission of the instructor. Focus on theory construction and development in nursing.

703 FUNDATIONS OF SCHOLARLY INQUIRY IN NURSING 3 credits
Prerequisite: Permission of the instructor. Focus on scholarly inquiry in nursing.

704 QUANTITATIVE RESEARCH METHODS 3 credits
Prerequisite: Permission of the instructor. Focus on quantitative research methods.

705 ADVANCED HEALTH CARE STATISTICS I 3 credits
Prerequisite: Permission of the instructor. Focus on advanced health care statistics.

706 ADVANCED HEALTH CARE STATISTICS II 3 credits
Prerequisite: Permission of the instructor. Focus on advanced health care statistics.

707 ADULT/GERONTOLOGICAL HEALTH NURSING/CNS III PRACTICUM 3 credits
Prerequisite: Admission to the program. Focus on advanced practice in adult/gerontological health nursing.

708 ADULT/GERONTOLOGICAL HEALTH NURSING/CNS III PRACTICUM 3 credits
Prerequisite: Admission to the program. Focus on advanced practice in adult/gerontological health nursing.

709 ADULT/GERONTOLOGICAL HEALTH NURSING/CNS III PRACTICUM 3 credits
Prerequisite: Admission to the program. Focus on advanced practice in adult/gerontological health nursing.

710 ADULT/GERONTOLOGICAL HEALTH NURSING/CNS III PRACTICUM 3 credits
Prerequisite: Admission to the program. Focus on advanced practice in adult/gerontological health nursing.
POLYMER ENGINEERING 9841:

525 INTRODUCTION TO BLENDING AND COMPOUNDING POLYMERS 3 credits
- Principles of polymer science and technology
- Techniques of polymer processing
- Polymer blends and composites
- Blending and compounding processes

527 MOLD DESIGN 3 credits
- Principles of mold design
- Molding process simulation
- Mold design software

556 ENGINEERING PROPERTIES OF POLYMERS 2 credits
- Principles of polymer engineering
- Properties of polymers
- Polymer processing concepts

551 POLYMER ENGINEERING LABORATORY 2 credits
- Laboratory experiments on polymer engineering

651 POLYMER ENGINEERING SEMINAR 1 credit
- Presentations on research topics in polymer engineering

680 POLYMER COATINGS 3 credits
- Principles of polymer coatings
- Coating formulation and application

699 MASTER’S THESIS 14 credits
- Supervised research in polymer engineering

721 RHEOLOGY OF POLYMERS 2 credits
- Principles of polymer rheology
- Rheological properties of polymers

727 RHEOLOGY AND PROCESSING TWO-PHASE POLYMERIC SYSTEMS 2 credits
- Principles of two-phase polymer systems
- Rheology and processing of two-phase systems

731 STRESS ANALYSIS OF POLYMERS AND COMPOSITES 2 credits
- Principles of stress analysis
- Composite material behavior

745 LIQUID CRYSTALS 2 credits
- Principles of liquid crystals
- Properties and applications of liquid crystals

80199 1-15 credits
- Doctoral dissertation

802 MEASUREMENT IN NURSING RESEARCH 3 credits
- Research methods in nursing
- Design and analysis of research studies

811 STRUCTURAL CHARACTERIZATION OF POLYMERS WITH ELECTROMAGNETIC RADIATION 2 credits
- Principles of electromagnetic radiation
- Characterization of polymer structures

827 ADVANCED POLYMERIC MATERIALS ENGINEERING SCIENCES 2 credits
- Advanced materials in polymer science
- Applications of polymer materials

835 NURSING AND HEALTH CARE POLICY 3 credits
- Principles of nursing and health care policy
- Policy formulation and implementation

850 ENGINEERING PROPERTIES OF POLYMERS 3 credits
- Principles of polymer engineering
- Properties of polymeric materials

851 POLYMER ENGINEERING LABORATORY 3 credits
- Laboratory experiments in polymer engineering

853 ADVANCED MULTIDISCIPLINARY LEADERSHIP FOR THE HEALTH SCIENCES 4 credits
- Leadership in healthcare organizations
- Team building and interpersonal skills

883 EVALUATION IN NURSING 3 credits
- Principles of evaluation in nursing
- Application of evaluation principles

884 PRACTICUM: ACADEMIC ROLE OF THE NURSE EDUCATOR 3 credits
- Principles of nurse education
- Application of nurse education principles

885 NURSING SCIENCE SEMINAR I 3 credits
- Seminar on nursing science
- Presentation of research topics

886 NURSING SCIENCE SEMINAR II 3 credits
- Seminar on nursing science
- Application of nursing science principles

899 DOCTORAL DISSERTATION 136 credits
- Independent dissertation project
- Research and data analysis

960 BASIC ENGINEERING FOR POLYMER ENGINEERS 3 credits
- Principles of polymer engineering
- Basic concepts of polymer science

961 POLYMER ENGINEERING LABORATORY 3 credits
- Laboratory experiments in polymer engineering

968 PRACTICUM: ACADEMIC ROLE OF THE NURSE EDUCATOR 3 credits
- Principles of nurse education
- Application of nurse education principles

969 MASTER’S THESIS 14 credits
- Supervised research in polymer engineering

972 RHEO-OPTICS OF POLYMERS 2 credits
- Principles of rheo-optics
- Applications of rheo-optics in polymer processing

975 CARBON-POLYMER NANOTECHNOLOGY 3 credits
- Principles of nanotechnology
- Application of nanotechnology principles

980 POLYMER SCIENCE & POLYMER ENGINEERING 136 credits
- Principles of polymer science
- Application of polymer science principles

POLYMER SCIENCE & POLYMER ENGINEERING
POLYMER SCIENCE 9871:

601 POLYMER CONCEPTS
2 credits
Prerequisite: Permission of instructor. Introduction to basic concepts in polymer science, including polymerization, copolymerization processes and naturally occurring polymers. Polymer nomenclature, definitions and classifications. Polymer stereochemistry and structure-property relationships.

602 SYNTHESIS AND CHEMICAL BEHAVIOR OF POLYMERS
2 credits
Prerequisite: 601 or permission of instructor. Introduction to fundamentals and practical aspects of polymer synthesis and reactions of polymers; general knowledge of laboratory and commercial methods for polymer preparation; practical examples.

604 SPECIAL PROJECTS IN POLYMER SCIENCE
1-3 credits
Prerequisite: permission. Research projects of limited nature assigned to student entering polymer science program. Intended to familiarize student with typical problems and techniques in this field.

6028 POLYMER SCIENCE SEMINAR I AND II
1 credit each
Prerequisite: limited to first-and second-year resident graduate students. Participants are to present a 25-minute lecture on some aspect of polymer science and to participate in discussions of lectures presented by other seminar participants.

613 POLYMER SCIENCE LABORATORY
3 credits
Prerequisites: 601 or 602. Students should be familiar with the laboratory procedures and techniques of polymer science. Laboratory experiments in synthesis, characterization, physical properties and processing and testing of polymers.

615 LABORATORY COMPUTER APPLICATIONS IN POLYMER SCIENCE
2 credits
Prerequisite: Basic knowledge of computer programming and permission of instructor. Laboratory use of computers in polymer science research for data acquisition, data analysis, graphing, and preparation of reports and thesis.

631 PHYSICAL PROPERTIES OF POLYMERS I
2 credits
Prerequisite: permission of instructor. Thermodynamic and molecular basis of rubber elastic behavior; stress-strain mechanical properties of polymeric materials; melt flow and entanglements; the morphology of crystalline polymeric materials; fracture of polymers.

632 PHYSICAL PROPERTIES OF POLYMERS II
2 credits
Prerequisite: 631 or permission of instructor. Normal-coordinate theories of molecular motion and applications to time-dependent mechanical, electrical, and scattering properties of polymeric systems; time-temperature superposition; free volume; WLF relation; fracture; glass transition.

674 POLYMER STRUCTURE AND CHARACTERIZATION
2 credits
Prerequisites: 3520:433 and 3520:434 or permission of instructor. Presentation of statistical descriptions of polymer molecular properties including chain models of polymerization and degradation, characterization of conformation, molecular weight, local structure, crystal structures and ordering.

675 POLYMER THERMODYNAMICS
2 credits
Prerequisite: 674 or permission of instructor. Presentation of the theories and experiments concerning polymer solutions, polymer phase equilibria, and polymer phase transitions and dilute solution steady-state transport.

699 MASTER'S THESIS
16 credits
Prerequisite: permission. For properly qualified candidate for master's degree. Supervised original research in polymer science, under direction of faculty member, followed by submission of thesis.

701 POLYMER TECHNOLOGY I
2 credits
Principles of compounding and testing, processing principles and types of operation, design principles.

702 POLYMER TECHNOLOGY II
2 credits
Prerequisites: 701 or permission of instructor. Rubber industry, rubber compounding and processing, vulcanization methods, physical testing, plastics preparation and compounding, manufacturing processes. Lecture/laboratory.

703 POLYMER TECHNOLOGY III
2 credits
Prerequisites: 702 or permission of instructor. Flow properties, extrusion, calendaring and milling, molding, bonding, and analysis design consideration. Lecture/laboratory.
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 at or if the problems has not been adequately solved 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 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.

5. When the grievance has been filed with the Chairperson of the Hearing Committee, it shall be the responsibility of that Chairperson to notify 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 Hearing Committee shall be constituted. The Hearing Committee shall be organized in no more than two weeks.

7. 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 an appropriate resolution in consultation with the Hearing Committee.

8. 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 expeditious 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.

University Rule 3359-24-02
http://www.uakron.edu/ogc/docs/24-02.doc
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) 370-4000, concerning any belief you may have that The University of Akron has failed to comply with the provisions of FERPA.

Release of Directory Information

The Family Educational Rights and Privacy Act of 1974 (FERPA) permits The University of Akron to release directory (public) information about students. Directory (public) information includes the student’s name, local (mailing) address, telephone number, major field of study, participation in officially recognized activities and sports, the student’s photograph, weight and height of members of athletic teams, dates of attendance, degrees and awards received, and the most recent previous education agency or institution attended by the student.

Withhold Directory Information

If a student asks for directory information to be withheld, it will be withheld from a variety of sources, including friends, relatives, prospective employers, honor societies, the news media, and the commencement program. Students should carefully consider the consequences of a decision to withhold directory information. Students may obtain a “DIRECTORY INFORMATION RESTRICTION REQUEST” form at http://www3.uakron.edu/registrar/DirInfoRel.doc or at the Office of the University Registrar.

Completed forms must be provided to the Office of the University Registrar more than ten (10) days prior to the starting date of the semester or summer session for instructions to be effective for that semester. Return to: Office of The University Registrar, The University of Akron, Akron, Ohio 44325-6208, or fax to (330) 972-4097.

Note: The above is a very general summary of the Family Educational Rights and Privacy Act (FERPA) and the University’s policy implementing this law. The full text of the University’s policy implementing FERPA may be accessed at http://www.uakron.edu/ogc/docs/11-08-6-25-07.doc.
**Intellectual Property Rights and Obligations**

During your graduate study at The University of Akron and your professional career thereafter, you may become involved with at least one of the three main forms of intellectual property matters: copyrights, patents, and proprietary information/trade secrets. It is possible that certain discoveries may have commercial value, and therefore may invoke one or more of the above forms of intellectual property ownership.

**Copyright**

Copyright, by law, is automatically owned by the author or the authors, employer or sponsor when the work is placed in a fixed form (or medium). The University Board of Trustees automatically waives any claim of the University to copyright in books, texts, or articles of a purely academic nature or owned by faculty or students except when the material is prepared as a sponsored project in which case it is the property of the University. Ownership would then be assigned to the University or its designee as the Board of Trustees directs. Questions of authorship are often best handled informally between potential joint authors.

**Patents**

All discoveries and inventions made by you while associated with The University of Akron must be reported to your faculty advisor, and through your advisor to your department chair, dean, and thereafter to the Office of Research Services and Sponsored Programs using the standard University of Akron invention disclosure form. This form provides a guide to describing and identifying the invention broadly and referencing specific results. Those persons thought to be possible inventors should also be identified on this form.

Patents on inventions made by University faculty, staff, students or anyone using University facilities are automatically owned by The University of Akron, as provided by Ohio Revised Code Section 3345.14. The final decision as to inventorship is a technical legal conclusion and will be made in the course of preparing a patent application by the patent attorney handling the application.

**Proprietary Information**

Those engaged in sponsored research may also be involved with developing or receiving proprietary information owned by others outside the University. Patents on inventions made by University faculty, staff, students or anyone using University facilities are automatically owned by The University of Akron, as provided by Ohio Revised Code Section 3345.14. The final decision as to inventorship is a technical legal conclusion and will be made in the course of preparing a patent application by the patent attorney handling the application. Proprietary Information may be provided to you or other project investigators during a research project. The sponsor desires, in these situations, to keep the information confidential (or secret) for as long as possible.

You are free to use the confidential information in the course of the project and discuss it with other students or faculty members engaged in that project. However, you may not use the information on other projects, nor may you discuss it with other individuals not involved with that project. While these commitments could delay public access to your thesis for a specified time, it will not delay acceptance or approval of your thesis/dissertation nor delay your graduation date.

The University and principal investigator must have written personal commitments from anyone working on a project involving and securing proprietary information. Therefore, all research students are required to execute the Confidentiality Agreement (sample form attached to this page). Prior to the start of your research, it is the responsibility of the research director to inform you in writing of any restrictions on the research with a copy also sent to the Office of Research Services and Sponsored Programs, if your research subject confidentiality provisions. If you are also to be informed by the research director about the scope of the research that is covered by any confidentiality provisions.

If you have any questions as to what information is proprietary, seek guidance from your project’s principal investigator or your faculty research advisor.

**Questions of Authorship and Inventorship**

In the event you think you have been improperly omitted from the list of authors, you should first discuss the matter with your faculty advisor. If you have further questions or consider the matter unresolved, you should inform the following order the appropriate department chair, the college dean, and finally the Dean of the Graduate School. (Questions are usually, and most quickly, resolved at the lowest administrative levels.)

In the event you think you have been omitted as an inventor on a patent application, you should first discuss the matter with your faculty research advisor and, thereafter, with your department chair and finally with your academic dean. Following such consultations, either you or your faculty advisor, or your department chair, or your dean can request the patent attorney who prepared the application to recheck the findings and then prepare a formal report on inventorship. The whole patent application file may then be referred to the Office of General Counsel for re-evaluation of valid inventors. However such re-evaluation by patent counsel shall only occur with the prior knowledge of your faculty advisor, Department Chair and Dean.

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**THE UNIVERSITY OF AKRON INVENTION PATENT AGREEMENT**

Name: __________________________  Last  First  Middle Initial

Social Security No.: __________________________

The University of Akron graduate students are required to sign this form as a condition of being permitted to participate in any research activity at the University.

1. As a condition of and in consideration of my participating in sponsored research or other financially supported activity at The University of Akron, I hereby agree to communicate fully with my Faculty Advisor, including discussing the details of any work conducted by me and the results which flow therefrom. I recognize that this communication is essential as it relates to any sponsored research, to any course and thesis/dissertation research, and to my safety and the safety of everyone else using the same facility that I use.

2. I further agree to disclose promptly to the director of the research and to my faculty research advisor any invention conceived and/or reduced to practice by me whether jointly with others or solely, which results in whole or in part from such sponsored research or financially supported activity. I agree that I will comply with the provisions of any agreement between The University of Akron and any sponsor for any information and laboratory practice to which I am privileged to know. I will cooperate in assuring that the sponsor’s rights, including rights in inventions, patents, copyrights, are fully protected. Further, I hereby assign all rights, title and interest to The University of Akron for its disposal at its sole discretion.

3. I also acknowledge that certain technical information that may arise as a result of the sponsored research or supported activity may be of a confidential nature. I agree to be bound to the reasonable terms of any nondisclosure agreement as it has been agreed to by the University.

4. Finally, I acknowledge and agree that any rights which arise as a result of the sponsored research or supported activity belong to The University of Akron or to the sponsor as determined by agreement between The University of Akron and the sponsor.

Date: __________________________  Student’s Signature: __________________________

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Graduate Faculty*  
September 2009

LUI S M. PROENZA, President; Professor of Biology; Adjunct Professor of Education; Adjunct Professor of Political Science (January 1998 B.A., Emory University; M.A., The Ohio State University; Ph.D., The University of Minnesota, 1971.

AL A R. ABBAS, Assistant Professor of Civil Engineering (2005) B.S., University of Jordan; M.S., Ph.D., Washington State University, 2004.

STEPH E N H. A B Y, Professor of Bibliography; Education Bibliographer (August 1988 B.A., University of Texas at Austin; M.A., University of Houston; Ph.D., State University of New York at Buffalo; M.S., Kent State University, 1986.

MARIA A D A M O WICZ - H A R A S Z, Associate Professor of Modern Languages (1989) M.A., Maria Curie-Sklodowska University, Poland; M.A., Ph.D., University of Pennsylvania, 1994.


AGIBE AKIHIGBE, Professor of Finance, Frederick W. Moyer Chair in Finance (2000) B.S., University of Ibadan; M.A., State University of Western Louisiana, M.B.A., Ph.D., University of Houston, 1991.

SONIA ALEMA NG O, Associate Professor of Public Administration and Urban Studies; Director, Institute for Health and Social Policy (1988) B.A., John Carroll University; M.A., Ph.D., Case Western Reserve University, 1991.

PHILLIP ALLEN, Professor of Psychology, Senior Fellow, Institute for Life-Span Development and Gerontology (2000) B.S., M.A., Ph.D., The Ohio State University, 1982.


ALFRED L. ANDERSON, Professor of Music (1985) B.M.E., Mississippi College; M.M., Indiana University, 1970.

CAROLYN M. ANDERSON, Professor of Communication (1995) B.A., University of Detroit; M.A., Wayne State University; Ph.D., Kent State University, 1992.

WILLI AM B. ARBUCKLE, Associate Professor of Civil Engineering (July 1982) B.S.C.E., Ohio University; M.S.C.E., Ph.D., University of North Carolina, 1976.


STEVE N R. ASH, Associate Professor of Management (2001) B.M.A., Ph.D., New Mexico State University, 1996.

KENNETH E. APPERL E, Professor of Management (1986) B.A., M.S., Western Michigan University; M.B.A., Kansas State University; Ph.D., University of Georgia, 1982.

JAMES F. AU STON, Associate Professor of Education (1987) B.A., M.A., Ph.D., Case Western Reserve University, 1971.

BRIAN P. BAGATTO, Associate Professor of Biology; Bachelor of Science/Medical Doctor Coordinator (2001) B.S., Queen's University; M.A., Ph.D., University of London, North Texas, 2001.

DAVID B. BAKER, Intern Senior Vice President and Provost; Margaret Clark Morgan Director of the History of American Psychology; Professor of Psychology (1998) B.A., Millersville State College; M.Ed., Ph.D., University of South Carolina, 1998.


CELAL BURAT, Department Chair of Mechanical Engineering, Professor of Mechanical Engineering (February 1980) B.Sc., M.Sc., The Technical University of Istanbul; Ph.D., The University of Lecce, 1976.

JANET P. BEAN, Associate Professor of English; Director, Composition (1998) M.A., University of New Hampshire; B.A., Ph.D., University of North Carolina, 1996.


RAJADE M. BERRY-JAMES, Associate Professor of Public Administration and Urban Studies (2000) B.S., Rider College; M.A., Kearney College of New Jersey; Ph.D., Rutgers University, 1999.

KULDHUR S. BHATI, Assistant Professor of Education (2008) B.C., University of Bombay; M.A., University of Notre Dame; M.A., Boston College; Ph.D., University of Wisconsin, 2000.


WIESLAW K. BINIENDA, Professor of Civil Engineering; Department Chair of Civil Engineering (1988) M.S., Warsaw Technical University; M.S.E., Ph.D., Drexel University, 1986.

DIANA L. BIODER, Associate Dean of Nursing Research and Scholarship; Professor of Nursing (2008) B.S., Faneuil Park Hospital; M.A., University of Illinois-Chicago; M.S.N., Rush University; Ph.D., Northwestern University, 1984.

TONI L. BISCONTI, Assistant Professor of Psychology; Fellow, Institute for Life-Span Development and Gerontology (2006) B.S., Youngstown State University; M.A., Ph.D., University of Notre Dame, 2006.

DOUG ALAN BLACKLEDGE, Associate Professor of Biology (January 2005) B.S., George Washington University; Ph.D., The Ohio State University, 2000.


TRACY J. BOISSEAU, Associate Professor of History (1999) B.A., Suffolk University; M.A., George-town University; Ph.D., Binghamton, 1996.


DALE S. BOROWIAK, Professor of Statistics (1983) B.S., M.S., The University of Akron; Ph.D., Bowling Green State University, 1980.

CONSTANCE BOUCHARD, Distinguished Professor of History (1990) B.A., Middlebury College; M.A., Ph.D., University of Chicago, 1936.


FRANCIS S. BROADWAY, Professor Education; Co-Director, Center for Collaboration and Inquiry (1997) B.A., Kalamazoo College; M.A., Eastern Michigan University, Ph.D., University of South Carolina, 1997.

* The dates in parentheses indicate the beginning of service at The University of Akron; unless otherwise stated, service began in the month of September.
STEPHEN C. BROOKS, Associate Professor of Political Science (1982) B.A., Colorado College; M.A., Ph.D., Northwestern University, 1982.

ROSE M. BROUGHTHAM, Assistant Professor of Modern Languages (2008) B.A., M.A., Western Michigan University; Ph.D., Western Michigan University, 2008.

NANCY J. BROWN, Associate Professor of Communication (1997) B.A., Chatham College; M.A., Northeastern University; Ph.D. Bowling Green State University, 1998.


ALPHIER BULDUM, Associate Professor of Physics; Adjunct Associate Professor of Mechanical Engineering (2001) B.S., M.S., Ph.D., Bilkent University, 1998.

SEAN X. CAI, Associate Professor of Physical and Health Education (1995) B.S., Southwest Normal University; M.Ed., Shanghai Institute of Physical Education; Ph.D., University of Arkansas, 1995.

KYOUNSU K. CAKMAK, Associate Professor of Polymer Engineering (August 1983) B.Eng., King’s College, University of London; Ph.D., University of Tennessee, 1984.

MUKEREM C. CAKMAK, Distinguished Professor of Polymer Engineering (August 1983) B.S., Techni- cal University of Istanbul, M.S., Ph.D., University of Tennessee, 1984.

THOMAS G. CALDERON, Professor of Accounting; Chair of the School of Accountancy; Director of Quality Assurance (1988) B.S., M.S., University of the West Indies; Ph.D., Virginia Polytechnic Institute and State University, 1987.

VALERIE J. CALLANAN, Associate Professor of Sociology (2006) B.A., California State Polytechnic University, 1986.

KIM C. CALVO, Professor of Chemistry; Department Chair of Chemistry (1984) B.A., Ph.D., The Ohio State University, 1981.

CYNTHIA F. CAPERS, Special Assistant to Provost/Chief Operating Officer; Professor of Nursing; Fel-

JOAN E. CARLETTA, Associate Professor of Electrical and Computer Engineering; ABET Coordinator (1999) B.S., M.S., Ph.D., University of the West Indies; Ph.D., Virginia Polytechnic Institute and State University, 1987.

SUSAN G. COLVILLE-HALL, Professor of Applied Mathematics (August 1990) B.S., Ashland College; M.A., University of Maryland at College Park, 1990.

FRED CATHERINE COFFEE, Assistant Professor of Political Science; Fellow; Ray C. Bliss Institute of Applied Politics (2000) B.A., College of Holy Cross; M.A., Ph.D., University of Virginia, 2006.

DANIEL J. COHEN, Associate Professor of Political Science; Fellow; Ray C. Bliss Institute of Applied Politics (2000) B.A., College of Holy Cross; M.A., Ph.D., University of Virginia, 2006.

ROBERT J. DUFF, Associate Professor of Biology (1999) B.S., Calvin College; M.S., Ph.D., University of Tennessee, 1995.


MALIK E. ELBULUK, Professor of Chemical and Biomolecular Engineering (1989) B.Sc., University of Jordan; M.S., Ph.D., Virginia Polytechnic Institute and State University, 1998.


KEVIN A. EUCHESS, Assistant Professor of Polymer Science (2003) B.S., Case Western Reserve University; M.S., Ph.D., University of Massachusetts, Amherst, 2000.

FREDERICO DE GREGORIO, Associate Professor of Polymer Science; H.A. Morton Professor of Polymer Science (1997) B.A., University of America; M.Sc., Ph.D., University of Akron, 1992.

JOHN A. EVANS, Professor of Modern Languages, Interim Chair of the Department of Modern Languages (2000) B.A., Brown University; M.S., Middlebury College; Ph.D., Indiana University, 1993.

EDWARD A. EVANS, Associate Professor of Chemical and Biomolecular Engineering; ABET Coordi- nator (2000) B.S., M.S., Ph.D., Case Western Reserve University, 1996.


KATHRYN M. FELETY, Associate Professor of Sociology (January 1988) B.A., M.A., Wright State Uni-

TERESA J. CUTRIGH, Associate Professor of Civil Engineering (1994) B.S., M.S., Ph.D., The University of Akron, 1994.
ANNABELLE M. FOOS, Associate Dean of the Buchtel College of Arts and Sciences; Professor of Geology and Environmental Science (1984) B.A., State University of New York at Potsdam; Ph.D., University of Texas at Dallas, 1984.

BRIDGE A. FORD, Professor of Education; Department Chair of Curricular and Instructional Studies (1987) B.S., M.S., Eastern Illinois University, Ph.D., Purdue University, 1983.

ANTONIA M. FORSTER, Professor of English (1986) B.A., M.A., Flinders University; Ph.D., University of Melbourne, 1986.


MARK D. FOSTER, Associate Dean of Programs, Policy, and Engagement; Professor of Polymer Science (2003) B.S., B.S., The College of Wooster; M.S., Ph.D., University of Minnesota, 1987.


WANDA J. FRANKLIN, Associate Professor of Nursing (2007) A.A.B., Miami University; B.S.N., M.S., Wright State University, Ph.D., The University of Akron, 2008.

LA VERNE M. FRIEBERG, Associate Professor of Geology and Environmental Science (March 1976) B.S., University of Wisconsin; M.S., Ph.D., University of Illinois, 1976.

PATRICIA A. GALON, Associate Professor of Nursing (2006) M.S.N., University of Cincinnati; M.A., Cleveland State University, Ph.D., The University of Akron, 2006.

XIAOSHENG GAO, Associate Professor of Mechanical Engineering (January 2001) B.S., M.S., Xian Jiaotong University; Ph.D., Brown University, 1997.

PAMELA G. GARN-NUNN, Professor of Speech-Language Pathology and Audiology (1996) B.S., University of Maryland, M.S., University of Southern California at Los Angeles, Ph.D., University of Oklahoma, 1996.


RONALD D. GELLANY, Associate Professor of Political Science (2006) B.A., McMaster University; M.A., Ph.D., Virginia Commonwealth University, 2002.

SUSAN C. HANLON, Associate Professor of Music; Assistant Director, University Bands; Director, Art and Biology (2009) B.A., M.A., Flinders University; Ph.D., Indiana University, 2009.


HENDRIK HEINZ, Assistant Professor of Polymer Engineering (2006) B.S., University of Heidelberg; M.S., Ph.D., ETH Zurich, 2003.

JOHN A. HEMINGER, Associate Professor of Applied Mathematics (1984) B.S., University of Cincinnati; Ph.D., Purdue University, 1974.

SUSAN C. HILL, Associate Professor of Communication (1999) A.A., Cuyahoga Community College; B.A., M.A., Kent State University; Ph.D., Bowling Green State University, 1998.

JOHN J. HIRSCHBUHL, Senior Multi-Media Producer; Professor of Education (1971) B.S., M.A., Temple University; Ph.D., Pennsylvania State University, 1971.

WALTER L. HIXSON, Professor of History (1989) B.A., University of Kentucky; M.A., Western Kentucky University; Ph.D., University of Virginia, 1986.

JACOB H. HOLDA, Associate Professor of Biology (1967) B.S., University of Michigan at Dearborn; Ph.D., Wayne State University, 1982.

MELANIE S. HOO FATT, Associate Professor of Biology (2007) B.S., M.S., Ph.D., Massachusetts Institute of Technology, 1992.

CHRISTOPHER P. HOOT, Associate Professor of Art (1991) B.A., Indiana University; M.F.A, Yale University, 1996.

JESSICA M. HOPKINS, Associate Professor of Biology (2007) B.S., Baldwin Wallace College; M.S., Towson State College; Ph.D., Idaho State University, 2007.

WILLIAM G. HOY, Jr., Professor of Music (1981) B.M., University of Wisconsin; M.M., Yale School of Music, 1975.


JUN HU, Associate Professor of Chemistry (1999) B.S., Fudan University; M.S., Shanghai Institute of Organic Chemistry; M.S., West Virginia University; Ph.D, Purdue University, 1997.

YU-KUANG HU, Associate Professor of Physics (1998) B.A., Swarthmore College; M.S., Ph.D., Cornell University, 1999.

MARLENE S. HUFF, Associate Professor of Nursing; Coordinator of Educational Progression Programs (1984) M.S.N., The University of Akron; Ph.D, Case Western Reserve University, 1991.


IOBAL HUSAIN, Professor of Electrical and Computer Engineering (July 1994) B.S., Bangalore University; M.S., Ph.D., Texas A&M University, 1995.


NATHAN I DA, Distinguished Professor of Electrical and Computer Engineering (January 1985) B.Sc.E., M.Sc.E., Ben-Gurion University of the Negev; Ph.D., Colorado State University, 1983.


SAHIB C. JANA, Professor of Polymer Engineering; Department Chair of Polymer Engineering (1998) Ph.D., Northwestern University, 1993.

LI JIA, Assistant Professor of Polymer Science (2007) B.S., Lanzhou University; Ph.D., Northwestern University, 2007.

DAWN JOHNSON, Assistant Professor of Psychology (2009) B.A., Denison University; M.S., Manera University; Ph.D., University of Kentucky, 2001.

SCOTT A. JOHNSTON, Professor of Music (1978) B.M., University of Wisconsin; M.M., The Ohio State University, 1979.


KARIN B. JORDAN, Professor of Education; Department Chair of Counseling (2007) B.A., Colorado Christian College; M.A., Rollins College; Ph.D., University of Georgia, 1992.

ROBERT D. JORGENSEN, Professor of Music; Director of University Bands (1987) B.S.M., University of Illinois at Urbana; M.M., Michigan State University, 1974.

LU-KWANG JU, Professor of Chemical and Biomolecular Engineering; Department Chair of Chemical and Biomolecular Engineering (1986) B.S., National Taiwan University; M.S., Ph.D., State University of New York at Buffalo, 1988.


G A L E N S. KARRIKER, Associate Professor of Music; Assistant Director, University Bands; Director, Marching Band (1999) B.S., Louisiana State University at New Orleans; M.M., Michigan State University, 1999.

KARYN BOBKOFF KATZ, Associate Professor of Speech-Language Pathology and Audiology; Associate Director, Institute for Teaching and Learning; Academic Projects (1979) B.S., University of Texas at Austin; M.A., Case Western Reserve University, Ph.D., Kent State University, 1992.

KEVIN P. KAUT, Associate Professor of Psychology; Fellow, Institute for Life-Span Development and Gerontology (2000) B.A., The University of Akron; Ph.D., Kent State University, 1999.
Continuing Education and Evening Division (formerly Evening College)
L. L. HOLMES, 1932-1934, M.A. (director)
LESLIE P. HARDY*, 1934-1953, M.S.Ed., L.H.D. (director)
CAFÉSAR A. CARRINO, 1974-1986, Ph.D. (dean)
WILLIAM H. BEISEL, 1986-2004, Ph.D. (dean)

Summit College (formerly Community and Technical College)
W. M. PETRY*, 1964-1974, M.S.M.E.
ROBERT C. WYERICK, 1974-1985, M.S.
JAMES P. LONG, 1992-1995, Ph.D.
DEBORAH S. WEBER, 1995-96, M.A. (interim)
DAVID A. SAM, 1996-2000, Ph.D.
WILLIAM H. BEISEL, 2000-2004, Ph.D. (interim)
STANLEY B. SILVERMAN, 2004-present, M.A.

College of Fine and Applied Arts
RAY H. SANDSFUR*, 1967-1978, Ph.D.
GERARD L. KNIEIT, 1978-1986, Ph.D.
WALACE T. WILLIAMS*, 1987-1991, Ph.D.
LINDA L. MOORE, 1992-1998, Ph.D.
MARK S. AUBURN, 1998-2000 (interim); 2000-2005, Ph.D.
JAMES M. LYNN, 2005-2009, Ph.D. (interim)

College of Creative and Professional Arts
DUDLEY B. TURNER, 2009-present, Ph.D. (interim)

College of Health Sciences and Human Services
JAMES M. LYNN, 2009-present, Ph.D. (interim)

College of Nursing
ESTELLE B. NAES, 1967-1975, Ph.D.
LILLIAN J. DeYOUNG, 1975-1988, Ph.D.
ELIZABETH J. MARTIN, 1988-1992, Ph.D.
CYNTHIA CAPERS, 1997-2006, Ph.D.
N. MARGARET WINEMAN, 2006-present, Ph.D.

Wayne College
MARVIN E. PHILLIPS, 1972-1974, M.A. (acting director)
JOHN G. HEDRICK, 1974-1979, M.A. (director)
JOHN G. HEDRICK, 1979-1987, M.A. (interim)
ROBERT L. McELWEE, 1979-1980, M.A. (acting dean)
TYRONNE M. TURNING, 1980-1995, Ph.D. (dean)
JOHN P. KRISTOFCO, 1997-present, Ph.D. (dean)

College of Polymer Science and Polymer Engineering
FRANK N. KELLY, 1986-2006, Ph.D. (dean)
GEORGE R. NEWKOME, 2006-2007, Ph.D. (interim)
STEPHEN Z. CHIENG, 2007-present, Ph.D. (dean)
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Complaint of possible discrimination, including sexual harassment, should be referred to:
Director, Equal Employment Opportunity and Training
Polsky Building 326
The University of Akron
Akron, Ohio 44325-4709
330-972-7300

Information on Title IX (sex discrimination) may be obtained from
Title IX Coordinator
330-972-7300